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Special Issue 269(E)

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Effective Marketing of Library and Information Services

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Abstract :

This paper deals with the marketing of library and information services using information technology . It discusses about the marketing services, management of libraries and user satisfaction . The paper also professional skills and factors influencing marketing of library services. It highlights effective marketing and modern way of Marketing of library services to users because user is the main person of the Information Market and they decide that which services are useful to them.

Keywords:- Marketing, library and information services, Modern techniques, Professional skills

Introduction: -

Marketing is basic reason for the existence of any organization. In the age of fast changes marketing is the springboard of all activities. It works as the guide for all types of organizations. It is a powerful mechanism which alone can satisfy the needs and wants of consumer at the place and price they desire. The success of any organization depends on the effectiveness with which its marketing strategies are formulated and implemented. User is the main person of the Information Market and they decide that which services are useful to them.

Marketing Guru Philips Kotler defines “marketing is the analysis, planning, implementation, and control of carefully formulated programmes, designed to bring about voluntary exchanges of values with targets, markets for the purpose of achieving organizational objectives. It relies heavily on designing the organization’s offering in terms of the target markets needs and desires and as using effective pricing, communication, and distribution to inform, motivate and serve the markets”.

Marketing is a planning and managing the organizations exchange relations with its clientele. It consists of studying the target market’s need, designing appropriate products and services, and using effective pricing, communication, and distribution to inform, motivate and serve the market. The American Marketing association defines marketing as “those activities which direct the flow of goods and services, from production to consumption”.

Shanton defines the concept of marketing and outlines its major aspects. Marketing is a systematic approach to planning and achieving desired exchange relation with other groups. Marketing is concerned with developing maintaining and or regulating exchange relations involving products, services, organizations, persons, places or causes.

A soft approach to marketing may be as follows:

- Marketing equates management in service set up.
- Marketing in libraries is an organization wide philosophy.
- Marketing put people to work.
- Marketing is not promotion or advertising these are part of it.
- Marketing is adaptable, flexible and opens
- Marketing really never ends.

Information Marketing in libraries: -

Marketing in nonprofit organization like a library involves activities conducted by people and institution to achieve goals other than normal business goals, though it may use concepts and practices applied to business situations. Marketing is about everything that a library does or says. It is concerned with development of relationships with all stakeholders, telling them about what you are, and what you do, etc.

Library marketing is a process in which users' needs for information and knowledge are identified and met through matching these against appropriate information resources and services. User satisfaction is the cornerstone of marketing library services.

This is the very first aspect of employing effective marketing in any kind of libraries. Many librarians correlate marketing with profit and consider that libraries are not for making profits. Basically, because they were not taught marketing at library schools and do not see marketing to have anything to do with running a library. It is a planned process of identifying, attracting, satisfying and gaining the support of specific users' groups in a manner that furthers the goals of the health library.

Information marketing by libraries is essential in order to :-

- Promotion of the use of information resources.
- Create perception of needs and thereby create demand.
- Ensure the optimum use of information.
- Improve the image and status of the libraries and library professional.
- Tackle the problem of rising cost of reading materials, journals, and database.
- Cope with information explosion.
- Balance shrinking funds.
- Save libraries from devaluation.
- Save libraries from declining reader support.

Marketing in LIS :-

Marketing, therefore, enable libraries to establish relationship with users, fund providers, governments, parental organization, local groups. Not only to satisfy their needs but also convince them for efforts resources that are invested for the benefit of the user community. Finally, marketing can ensure the survival and growth of the libraries and information services.

Marketing Activities: -

1. Product
2. Promotion
3. Pricing
4. Place
5. People

Marketing of Academic library services: -

1) Library Management:-

This is an age of information technology age, due to explosion of information at global level, the more information available in the market, therefore management of libraries is necessary to meet information needs of users.

2) Users satisfaction: -

In academic library services primary aims to provide “the right information to the right user at the right time. ”New business information enterprises have emerged to challenge and compete with libraries .The academic library is not a profit –oriented organization in marketing .The increased customer satisfaction will result in the increased willingness to use and pay for the services offered .Hence, the customer’s satisfaction has a direct link with the support we get for the library and information services.

3) Understanding users: -

Marketing is a management function. There is a common understanding that who knows better about the library then he knows better about its resources, facilities services, and products particularly in the information era. The most important role of marketing in Academic library is to find information for the customer, not customer for the information.

4) Users welcome again and again: -

Academic librarians and his library staff deal with a smile to the users. We should give positive attitude and favorable relationships with users. But they will come again only if their present needs are well met, and in meeting the information needs of users marketing attitude plays a vital role.

5) Libraries can need to grow: -

Dr .S. R. Ranganathan’s 5th law “library is growing organism” .Due to global information explosion , more information comes every second and today’s information is old very fast for tomorrow .Libraries continue to face continuing changes in the environment strategies and outcomes .Good marketing efforts take care of all resources and how it can be done in an efficient way.

Levels of Marketing: -

There are two types of levels of Marketing, Strategic Marketing and Operational Marketing.

Strategic Marketing:

Strategic Marketing attempts to determine how a library competes against its competitions in a marketing place. In particular, it aims at generating competitors.

Operational Marketing:

It is executing marketing functions to attract and keep customers and to maximize the value derived for them, as well as to satisfy the customer with prompt service and meting the customer expectation.

Dr. Ranganthan concepts of the five law of Library science had the marketing strategic concepts at their core five laws were.

1st Law Books are for Use: Maximize the use of books as product.

2nd Law Every Reader his/her Book: Reader is the prime factor and their need must be satisfied.

3rd Law Every Book its reader: Find a reader or customer for every book.

4th Law Save the time of the reader: Arrange information in such a way that the reader finds his desired information promptly. Don’t dissatisfy a customer

5th Law A Library is growing organism: Libraries are not made, they grow

Modern way of information marketing: -

There have been following methods for promoting information services,

1. Electronic Networked environment (WEB- OPAC System): Library is equipped with Web OPAC system. It is the main basic search or the best online cataloging. It provides the user with appropriate information about the new arrivals, Books etc.
2. Current Awareness Services (CAS): Current Awareness Service (CAS) is extensively for users. The list of new additions to the Library collection is displayed on the Library notice board every month.
3. Clippings Services: Clippings of content page of the subscribed Journals/ Magazines are maintained for reference to the users. And any other important News related to the AICTE, DTE or any other governing bodies are also stored for the reference.
4. Inter Library Loan Services: Interlibrary Loan (Abbreviated ILL, and sometimes called inter loan, document delivery or document supply) is a service whereby a user of one library can borrow books or receive photocopies of documents that are owned by another library.
5. Interface with the other Library: We have created good relation with other libraries in the city. For example, we try to get the Xerox copy of the book which is unavailable in our Library from other institution.
6. Research Activities of the Library: There is growing recognition of the need to manage the increasing flow of information, Ideas & Knowledge more affectively & efficiently. The Seminar conference aims to bring together Academics Researchers & Industry Practitioners on a single platform to review research in the domain of Library & Information management
7. Annual Membership: Library provide to services with ex Students for their benefit as annual membership. And anybody can come and refer the book from Library showing their identifications as I- Card, authority letter etc.
8. Suggestions/ Feedback: For continuous improvement in the library, we have suggestion box so, that user suggestion, as well as feedback from will help us to improve our services. we get feedback filled after the course completion.
9. Question Paper for reference: Hard copies of Questions paper are available in the library. User can take when they required.
10. Organizational Membership: Institute has tied up different libraries to share their literary resources to benefit the users, who are also invited for special screening and other educational interactions.
11. Xerox and Printout facility: Library User can save their time and use both the facilities in the library.
12. Orientation: Library organizes and orientations every year for all the users at the time of induction programme, so that all the resources are utilized to the optimum level.
13. Professional Skills for marketing: -Library personnel require the following professional knowledge and skills for marketing information and library services; Perception of user needs and ability to obtain feedback from users, technical knowledge, such as ability to use the internet, Knowledge of various marketing strategies for promoting information skills etc.
14. Library Website:-Information about the library-staff directories, Library Timing ,departmental information , full text magazines, and journals ,digitized special collections free e books ,freely accessible internet resources etc.
15. Email marketing :- Where a large proportion of the users are on email it is an easy way of reaching them, quickly and cheaply

Barriers to Information Marketing: -

Most librarians do not market their library products, since they do not know how to market, or how to do it. The following are barriers to Information services.

- Lack of Funds
- Attitude
- Lack of training and education
- Confusion
- Complex and complicated tasks

Conclusion: -

Marketing is essential in marketing the proper planning, designing and use of such services and products for the better and optimal use of information. The library should give priority to provide excellent customer and optimal use of information. The library should give priority to provide excellent customer service enhancing its image as information provider in the information era. The basic aim of marketing is to know and understand our user in order that the library is able to satisfy those needs in an effective way. A marketing plan is an essential tool which will enable us to focus our efforts.

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Problems and Challenges Faced by Women and Children during COVID-19

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Abstract:

When there is outrage of any natural or manmade disaster certain section of societies are get affected primarily. In the case Covid-19 Women are affected more than men by the social and economic effects of infectious-disease outbreaks. The reason for their suffering is they are one who bear the responsibilities as schools close and family members fall ill. They are at greater risk of domestic violence and are disproportionately disadvantaged by reduced access to sexual- and reproductive-health services. In the case of economy, they get affected much. Because women are more likely than men to have fewer hours of employed work and be on insecure or zero-hour contracts, they are more affected by job losses in times of economic instability. These leads to various types of exploitation especially the young girls and women who perform low paid work. This paper has been prepared based on available secondary data and author tried to analyse the problem of women and children during the pandemic.

Key Words: Covid-19, Social and Economic effects, Domestic Violence, Women and Children. Reproductive-Health Services. Economic Instability.

Introduction:

Every Society is dynamic one. There is constant force which would lead to changes. No society is exceptional to these kinds of changes. When we look into the forces would lead into changes in society, it is because of physical or man -made factors. But both leads to sizeable influence on the existing structure and function the of society. As a result, it would affect more on normal function. As a pandemic it left none affected. It affected male and female, rich and poor, literate and illiterate, elite and common man. Here author refers 21st centuries great crisis, that is Covid 19 and its influences on the certain section of the society

Here author tries to analyze the problem from gender perspective. How pandemic like covid 19 become a killer disease in the case of female population? Like all other previous pandemic on the earth, how covid 19 is a curse on the life and existence of female population. When you look into the problem from historical point of view, it has been proved that throughout the world the female population are worst sufferers of any evils. The major reasons for such suffering may be is their social, economic physical, emotional and psychological and other conditions. In fact, they are worst sufferer of the situation in comparison with their counterpart.

When we perceive the problem from economic point of view, women are worst sufferers. The reason may be loss of job, loss of family members, poor economic condition the family, if someone fell ill in the family they cannot cope of with situation. It is true in case of present pandemic. When perceive the economic aspect of the pandemic, the loss of employment or closure of employment opportunities are disrupted their livelihoods and ability to fulfill basic requirements. This kind of problem is severe in the case poor and single parent families. It is absolutely true that when resources become scare, women may be getting greater risk of experiencing economic abuse. For countless women in economies of every size, along with losing income, unpaid care and domestic work burden has exploded. While everyone is facing

unprecedented challenges, women are bearing the brunt of the economic and social fallout of COVID-19. In most cases they lost job as house maid. It is greater burden to them to manage the family expenses.

The evidences shows that there is gender-based impact during COVID19. The women are affected disproportionately and differently. Looking into worldwide, it is true that they are working in informal sector, earn less permanent and insecure jobs than their counter parts. As a result, they are unable to access social protections. Their capacity to absorb economic shocks are less that of men. The developing countries like India majority of the women are working a for daily wages or in informal sectors. They face real shock due to lock down during Covid=19 because they depend on public space and social interaction for their livelihood.

With any pandemic or any situation which impact the society at large comes the problem of psychological trauma. The lockdown has proved that “man is a social being” because continuous lockdown for about months have impacted people psychologically and the burden has been faced by women and children in the form of domestic violence. It is alarming among that group there include young girls and other category of women. They have experience by own relatives and neighbours. The major reason for the continuous increase of violence is closure of schools. During their stay at home sometimes they exposed to violence and sometimes they are exploited by their own family members for different reasons like economic, and other reasons. This has increased stress on family and parents. It is true because during lockdown period, multiple calls have been received on the helpline number made for the people going through domestic violence. The main reason for this is they are stay back at home. The violence which women are undergo results in injuries and serious physical and mental, sexual and reproductive health problems including sexually transmitted diseases, HIV and unplanned pregnancies. The cases of domestic violence are increased due to stress and the scale back of social and protective networks and decreased access to service canters, shelters, legal aid and etc.

Another area that women get affected is the area of health. Here author analysing problem in two perspectives. That is women working in health sectors particular and women in general. When we analyse problem from second perspectives health pandemics can make it more difficult for women and girls to receive treatment and health services. This is compounded by multiple or intersecting inequalities, such as ethnicity, socioeconomic status, disability, age, race, geographic location and sexual orientation, among others which influences access and decision-making to critical health services and information about COVID-19. Women and girls have unique health needs, but they are less likely to have access to quality health services, essential medicines and vaccines, maternal and reproductive health care, or insurance coverage for routine and catastrophic health costs, especially in rural and marginalized communities they do not have awareness about these aspects. In rural areas restrictive social norms and gender stereotypes can also limit women's ability to access health services. All of this has particular impacts during a widespread health crisis.

Another perspective of problem is about women those work in health sectors. In majority of the cases, they are front-line health workers, especially nurses, midwives and community health workers. They are also the majority of health facility service-staff – such as cleaners, laundry, catering – and as such they are more likely to be exposed to the virus. In some areas, women have less access to personal protective equipment or correctly sized equipment. Despite these numbers, women are often not reflected in national or global decision-making on the

response to COVID-19. Impacts on sexual and reproductive health. The provision of sexual and reproductive health services, including maternal health care and gender-based violence related services, are central to health, rights and well-being of women and girls. The diversion of attention and critical resources away from these provisions may result in exacerbated maternal mortality and morbidity, increased rates of adolescent pregnancies, HIV and sexually transmitted diseases.

Unpaid Care Work:

The COVID-19 global crisis has made it very clear that the world's formal economies and the maintenance of our daily lives are built on the invisible and unpaid labour of women and girls. This is a basic foundation for economic needs of most of the poor and other lower-class groups. They have shouldered the responsibility take care of their children who out of school, intensified care needs of older persons and ill family members, and overwhelmed health services, demands for care work in a COVID19 world have intensified the problem.

Psychological impact:

The COVID-19 has impact on psychological level of all the human beings. It has created stress and strain of all kinds. The stress has been noticed both inside and outside their locality. As result some people are become ill and some have committed suicide. It shows lack of emotional and psychological support to the members. This nature has observed more among the divorced, separated, family which do not any support. What is need of hour is support and suggestions of health workers to sufferers to overcome the problem Health. The health providers need to be aware of the risks and health consequences of violence against women and their emotional conditions. They can help women who disclose by offering first-line support and medical treatment. It includes: listening empathetically and without judgment, inquiring about needs and concerns, validating survivors' experiences and feelings, enhancing safety, and connecting survivors to support services. Trying to maintain daily routines and make time for physical activity and sleep. Using relaxation exercises (e.g., slow breathing, meditation, progressive muscle relaxation, grounding exercises) to relieve stressful thoughts and feelings. Engaging in activities that in the past have helped with managing adversity. Women who are experiencing violence may find help reach out to supportive family and friends who can help practically (e.g., food, child care) as well as in coping with stress. They also can develop a safety plan for their and their children's safety in case the violence gets worse. This includes keeping numbers of neighbours, friends, and family whom you can call for or go to for help during time of need.

Psychological impact of the COVID-19 pandemic

- Acute panic attacks
- Significant positive statistical correlation between self-reported social media use and the spread of panic related to Covid-19
- Stress, fear and anxiety during physical distancing seen in children and adults
- Obsessive behaviours
- Hoarding
- Paranoia
- Depression
- Post-traumatic stress disorder (PTSD) in the long run

Sources: Ahmad and Murad; UNICEF^[18]

Another impact of pandemic on the women is decreased hospitalisation of pregnant women in labour. The major reason for this is the major allocation of health-care infrastructure and human resources, including emergency services and intensive care unit beds, for the care of patients infected with this virus; this change to the Indian health-care system has affected the care of pregnant women. Although the implementation of a lockdown by the government slowed the community spread of COVID-19, it could have inadvertently affected the emergency obstetric care for referred women through the suspension of public transport, most pregnant women in India still use public transport for emergency visits. Another reason for unprecedented apprehension because of the rapid spread of the pandemic might have resulted in hospital-avoiding behaviour among pregnant women. Women are avoiding hospital visits even when they require tertiary-level care added to that reduction of the availability of public transit systems during lockdown further hinders access to tertiary care for referred women from rural areas. It resulted a substantial rise in late intrauterine foetal death and stillbirth, along with in-hospital maternal mortality, which might be because of the delayed presentation of women requiring emergency obstetric care.

Child marriages increased.

In the beginning of the pandemic took grip of the world, and India went into a lockdown, child rights activists were alarmed to see a slew of child marriages being reported in Karnataka. Both during first and second lockdown in place, and this time weddings being restricted to houses due to tough guidelines, there are fears of child marriages going unnoticed. In relation to this, the chairperson of the Karnataka State Commission for Protection of Child Rights (KSCPCR), told that a total of 2,180 child marriage cases were reported in Karnataka as per reports of the Childline from April 2020 to January 2021. In December 2020, out of the 1,598 complaints, 365 were related to this category. The other complaints ranged from illegal adoption, child trafficking and child labour to need for medical help or shelter. After lockdown eased there have been increase in number cases, it is still worrying. In the year 2020 August month as many as 214 complaints were received, 111 complaints in September. 190 complaints for October and November 321. The above figure highlights seriousness of problems in Karnataka relation with early marriages. The major reason for increase of child marriages are marriages are not taking place at public places or temples, but now, marriages happening at homes the authorities and public agencies are not noticing

The reason for child marriages:

When we look into the child marriages, during the first lockdown, we saw child marriages for a variety of reasons, ranging from insecurity for the girl, wherein the parents assume their responsibility is over with her marriage, to the fact that they could get away with a simple marriage without calling too many people, resulting in lesser expenditure. Many people don't know what the punishment is for the offence. When they learn about it, they are surprised. It is because of that there is continuous increase in child marriages.

Conclusion:

The pandemic COVID -19 has started in December 2019 and it has increased and enhanced all existing inequality. The inequalities are lead to other form of disabilities among certain section of society especially women. It is also difficulty to them to cope with its sheer scale and complexity. The existing policies and programmes are unable to rebuild more equal,

inclusive and resilience societies. When condition is likewise what is need of hour is gender inclusive responsive and recovery. The pandemic has also made starkly clear the way in which the daily functioning of families, communities, and the formal economy are dependent on this invisible work of women. As we need rebuild economic structures which are more inclusive and resilient, there is an opportunity to be transformative, and to recognize, reduce and redistribute unpaid care work once and for all.

In the case of national Governments could develop information packages on eliminating stereotypes related to gender and reproductive roles, featuring images of new patterns of families spending time together and sharing workloads during the pandemic. The activities of women-led NGOs could be documented on social media platforms, highlighting their activism and engagement. Special funds could be allocated for media programmes that amplify the voices of women and emphasize the importance of their representation in the fields of science and politics, among others, during the pandemic.

The women who are working in informal sector are affected more during pandemic. Whatever support measures in response to COVID-19 need to go beyond workers who hold formal sector jobs and include informal, part-time and seasonal workers, most of whom are women. The supportive measures are not only for large and medium-sized enterprises, but also micro- and small businesses, where women entrepreneurs are relatively more represented. In addition, private sector financial support and access to credit should be equally available to women and men.

It is clear that COVID-19 has to be fought at various levels. These strategies also have to evolve with time as new social and scientific evidence is reported. The social policy with respect to COVID-19 also needs to encompass the most vulnerable sections of the population, i.e., women and children who face abuse, mistreatment, domestic violence, decreased financial stability and who face double discrimination during these times. What we need now is long term plan for rebuild the supporting economy and healthier and safer society.

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Role of Yoga in Sport

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Introduction:

Ultimately the goal of yoga is purely psychological. As defined in the Yoga Sutras of Patanjali, one of the authoritative texts in yoga, yoga is the control of the mental fluctuations and energies. In Ashtanga, the purpose of working the body out is to burn the six poisons of the heart – desire, anger, delusion, greed, envy, and sloth (the Practice, 2009). Simply put] the goal is to live a peaceful life free from hatred and negativities.

Meaning and Definition of Yoga:

Yoga is a generic term for the physical, mental, and spiritual practices or disciplines which originated in ancient India with a view to attain a state of permanent peace. Yoga is a Sanskrit word which “Union” and is interpreted as “Union with the divine” One of the most detailed and though expositions on the subject as the Yoga Satras of Patanjali, which defines yoga as “the stilling of the changing states.

Yoga has become a universal language of spiritual exercise in the United States, crossing many lines of religion and cultures ...Every day, millions of people practice yoga to improve their health and overall well-being, that's why we're encouraging everyone to take part in. PALA (President Active Lifestyle Award), so show your support for yoga and answer the challenge to the mind.

Yoga is also interpreted as the yoke that connects beings to the machine of existence Earning.

Objective of the Paper:

The main object of this paper is study for Yoga in main roll in sport. Yoga is mind and body discipline developed in India some 2000 years age. Almost two decades ago, the fitness industry rediscovered this ancient form of physical activity and a new category called mind-body exercise was created. In a more recent article, Larkey, Jahnke, Etnier, and Gonzales (2009) proposed the term “Meditative Movement” to and deep stated of relaxation. As a yoga practitioner for many years and a student of sport and exercise psychology, I was thinking of ways on how to better integrate these two disciplines. I practice a dynamic form of yoga called Ashtanga Vinyasa Yoga. This method was taught by the late Sri Pattabhi Jois of Mysore, India, and ws passed on to him by his teacher Shri Kisnamacharya, said to be great yogi and healer (K.Pattabhi Jois, 2009) The was taught by the late Sri Pattabhi Jois of Mysore, India, and was passed on to him by his teacher Shri Kisnamacharya, said to be great yogi and healer (K.Pattabhi. Jois, 2009). The dynamic element of the practice called Vinyasa provide alight aerobic stimulus which, based on a personal experience and some published studies (Cowen & Adams, 2005:2007), cab raise ones heart rate up to 60% of the relative maximum. Contrary to popular belief, yoga is not only for increased flexibility and relaxation. It also increases muscular endurance, increases perceived stress, and improves overall health perception (Cowen & Adams, 2005.)

Yoga has five Principal Meanings:

Yoga as disciplined method of attaining a goal

Yoga as techniques of controlling the by the body and the mind

Yoga as a name of one of the schools or systems of Philosophy (darsana)

Yoga in connection with other words, such as “hath-, mantra-, and laya-,” referring to traditions specializing in particular techniques of yoga yoga as the goal of yoga practice.

Hindu monks, beginning with Swami Vivekananda, brought yoga to the West in the late 19th century, in the 1980s, yoga became popular as a system of physical exercise across the Western world. This form of yoga is called Hatha Yoga, Many studies have tried to determine the effectiveness of yoga as a complementary intervention for cancer, Schizophrenia, asthma and heart patients, [17] [18] [19] [20] in a national survey. Long-term yoga practitioners in the United States reported muscular-skeletal.

In India, the practice of yoga can be as sedentary as sitting for hours in deep meditation or as active as the jumping transitions in Ashtanga, when we talk about yoga a physical activity, we are actually focusing on the practice of hatha yoga. The practice of hatha yoga consists of several practical techniques aimed to make the body clean, healthy, and strong, These modalities includes cleansing techniques, physical exercise, breath work, attention focus, and attitude training, All of which, I believe, are important to physical and psychological health and well-being. A recent review article comparing the health benefits of yoga versus conventional exercise suggest that yoga appears to be as effective as or even superior than exercise in reduces perceived fatigue and stress in addition to improving health-related outcomes like blood glucose, bold lipids, and salivary cortisol (Ross & Thomas, 2010). This review implies that yoga, in general, can be an effective alternative physical activity intervention program which not only addresses the health/fitness triad of aerobic exercise, muscular fitness, and flexibility, but also provides a number of psychological benefits such as reduced stress and anxiety.

Yoga for mental skills training:

Breath work is essential to developing inner awareness which is prerequisite to relaxation and imagery. One school of yoga actually teaches a technique called yoga nidra (yogic sleep) with preparatory exercises very similar to imagery training, Attention focus in yoga includes sense with drawl, concentration, and meditation, which are in essence centering in sport psychology language.

Yoga also teaches positive thinking, Generally, attitude training in yoga involves the practice of ethical rules and observances called yamas and niyamas, but in the context of sport psychology, attitude training in yoga means thinking positively or applying positive self-talk.

Conclusion:

Yoga as physical activity has many physical as well as psychological benefits, It offers a holistic approach to a physical activity has many physical as well as psychological benefits, it offers a holistic approach to physical activity intervention and an alternative strategy to enhance mental skills in sport. Yoga has wide range of techniques designed to improve health and fitness. To teach inner awareness, breathing and relaxation: and to cultivate a positive mental state. As sport psychology is still in its infancy in some parts of the world, offering yoga as a cross-training program is good introduction to a comprehensive mental skills training program and may assist in providing a way to gain entry into an athletic team.

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Research Design and Research Methodology : A Comparative Study

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Abstract :

Research methods play a central role in scholarly endeavors in the field of library and information science (LIS), and many scholars have explored LIS research methodology. Some researchers survey types of research methods. The research design is a broad framework that describes how the entire research project is carried out. This Paper discuss about the concept of research Methods of research design, Research Design Types of research Design, Comparative study of Research design and Research Methodology .

Keyword: Research, Research Design, research methodology

Introduction:

The LIS field in terms of research method selection and application in that greater number and wider variety of research methods are used in all the research publications this study examines. All the methods reported in 1162 scholarly publications in a sense constitute tool box of research methods. The research methods traditionally applied in LIS explorations (questionnaire and and historical method) .Researcher can instead choose research methods from this expanded toolbox according to their study objective.

Research:

Research may be very broadly defined as systematic gathering of data and information and its analysis for advancement of knowledge in any subject.

Research methods

Research methods may be understood as all those methods/ techniques that are used for conduction of research. Research methods or techniques*, thus, refer to the methods the researchers use in performing research operations research methods can be put into the following three groups:

1. In the first group we include those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;
2. The second group consists of those statistical techniques which are used for establishing relationships between the data and the unknowns;
3. The third group consists of those methods which are used to evaluate the accuracy of the results obtained.

Research Design :

Research design is the conceptual blueprint within which research is conducted. A scholar for his research, prepare an action plan, it constitutes the outline of collection, measurement and analysis of data.

Good Research Design

A **good research design** is characterized by its flexibility, efficiency, appropriateness etcetera. A **research design** is one that has little to no error.

Basically, there can be three types of research designs

1. *Exploratory research design*
2. *Descriptive research design,*
3. *Experimental (or causal) research design.*

How to develop a research design?

- Classify the intended outcome of what needs to be understood
- Developing the research question
- What needs to be measured
- Select the population for the experiment
- Identify the ideal data collection method
- Construct Interrelated characteristics
- Use correct analysis tools
- Choose a channel for disseminating your findings

Steps of Research Design:

- 1) Formulation of the research problem
- 2) Literature review
- 3) Formation of Hypothesis in Research Design
- 4) Formulating a Research Design
- 5) Defining the nature of the study
- 6) Sample design
- 7) Administration of the tools of Data collection in Research Design
- 8) Data analysis
- 9) Hypothesis testing in Research Design
- 10) Interpretation and generalization
- 11) Preparing the report of the Research

Conclusion:

From the overall investigation it was observed that research methods are the procedure that will be used to collect and analyze data. Whereas research design is the overall structure of the research. Research method depends on research design whereas research design is based on question or problem.

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Export Diversification : Key for 'be Vocal for Local to be Global'

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Abstract:

Perception about the disruption and uncertainty related to Covid-19 shocks likely to prevail in long run. The policy response at global as well as national level is supportive to inward looking trade stance which diverges from the idea of liberalization. India has significant contribution (nearly 40%) of foreign trade to its Gross Domestic Product (GDP). The high trade openness elucidates vulnerability of Covid-19 shock in terms of losses in export revenues, increasing cost of import and growth slowdowns. It is important to understand trade portfolio of India in terms of product and market concentration in order to strategized foreign trade policy during post Covid-19 period. It is observed that export composition of India is dominated by capital and technology intensive sectors. However, a marginal improvement in export of unskilled labour need a policy support as this sector has capacity to absorb the excess labour supply. In terms of spatial coverage there is observed 'U' turn in terms of exports to traditional developed market.

Key Words: Export, Trade diversification, export concentration

Introduction:

Foreign trade is known as an engine of economic growth of a country. It is true specially when India has significant contribution (nearly 40%) of foreign trade to its Gross Domestic Product (GDP). It is well-known fact that the engine gets hit badly during uncertain situations. Same thing is expected to happen with India's export in upcoming few quarters due to the outbreak of novel corona-virus. Worldwide lockdown in economies adds the twin-trouble to India's exports. Healthy global demand and smooth supply chains are two important pillars of export growth. Contraction in world demand and disturbances in supply chain are signs of weak economic health. The speed and spread of this pandemic weaken the export of India which already recorded sluggish growth from the beginning of current financial year (2019-20). Furthermore, anticipated fall in demand for export from Covid-19 affected countries which are the major export partners of India adds the pressure on India's export.

The exponential growth in Covid-19 across the countries without proper remedial measure appears as turmoil. Perception about the disruption and uncertainty related to such shocks likely to prevail in long run. Early policy response at global as well as national level is supportive to inward looking trade stance which diverges from the idea of liberalization. The increasing trade openness is back by several policy initiatives related to trade, investment and industry which date back to early nineties. The new economic policies adopted by then government pave a way for laissez-faire trade, under which focus was on to reduce the trade barriers. Policies like or 'Be Vocal for Local to be Global' and 'Aatmanirbhar Bharat' needs a cautious understanding and strategic implementation.

Trade openness explains that Indian economy is vulnerable to Covid-19 shocks via external channel. The high correlation between the world and India's exports elucidate vulnerability of Covid-19 shock in terms of losses in export revenues, increasing cost of import

and growth slowdowns. The scale of impact also depends on degree of trade concentration. The higher degrees of trade concentration are strongly correlated with greater volatility in export and economic growth. It is also important to understand trade portfolio of India in terms of product and market concentration in order to strategized foreign trade policy considering newly evolving global trade patterns during Covid-19 pandemic.

India's Product Concentration: Need to be Vocal for Local

Product concentration reflects the degree to which a country's exports (imports) are concentrated on a small number of products. Conversely, when exports (import) are comprised of a larger number of products it has a low product concentration ratio or diversify trade. A high degree of export product concentration leads to greater volatility in export earnings. To analyze sectoral impact of Covid-19 it is important to know the degree of product concentration. Although, India export nearly 258 products as per SITC revision-3, top twenty products contributes nearly half of the total exports. In other words major large piece of export earning rely on only 8 percent of total exported products. The export basket of India witnesses a diversion towards the technology and human-capital intensive sectors from primary, natural resource intensive sectors. Structural change in India's export basket favors the diversification of exports towards capital intensive products it is contradictory to comparative cost theories (Table 1). Classification of products (SITC Revision 3) based on the factor intensity shows that there is slight improvement in the export share of unskilled labour intensive sectors during 2010 to 2020. The rise in unskilled labour intensive sector attributed to increasing export of furniture, glass, pottery, toys, office stationary, travel goods, footwear, and articles of apparel and clothing accessories during 2010-2020 as compared to 2000-2010. The share of these unskilled products improved marginally to 7.75 percent in the year 2020 as compared to 6.86 percent in 2010.

Table 1: Factor Intensity Classification - Percentage Share of Total Export

Factor Intensity Classification	2020	2015	2010	2005	2000	1995
Primary Resource Intensive (Excluding Petroleum Oil)	13.89	14.66	15.46	16.53	16.19	23.28
Petroleum Oils	13.17	11.52	16.62	10.06	3.25	1.43
Natural Resource Intensive	11.01	12.72	15.70	16.23	19.75	18.71
Technology Intensive	27.90	23.12	18.79	17.82	14.59	11.98
Human-Capital Technology Intensive	19.07	17.64	16.76	18.18	13.83	12.67
Unskilled-Labour Intensive	14.86	17.45	14.59	20.05	30.41	30.40
Unclassified	0.10	2.88	2.08	1.13	1.99	1.53
Total	100	100	100	100	100	100

In spite of having comparative advantage in unskilled labour-intensive sectors like textile-clothing accessories India is losing their importance in the world export. Although China is the largest supplier of clothing and footwear it witnessed fall in the share. Countries like Vietnam and Bangladesh is moving at faster space in terms of absorbing global demand for clothing and footwear. At this juncture, labour intensive sectors need policy boost considering labour absorption capacity of these industries. As per the latest economic survey apparel sector is 80 fold more labour intensive than automobile and 240 fold more than that of steel sector thus it has more capacity to create job opportunities in post Covid-19.

According to 'Ricardian Model' country would specialize and export the products in which it has relative advantage in factor productivity. Furthermore, 'Heckscher-Ohlin model'

asserts that differences in the factor of production lead to comparative advantage. Country like India with abundant supply of labour would specialize and export labour intensive products. In order to reap the benefit from the factor intensity India needs 'to vocal about the local' products which are labour intensive.

With the technological advancement the export share of human capital-intensive sectors like road vehicles, rubbers manufactures, dyeing materials, essential oils, manufactures of metal, miscellaneous manufactured articles also increased in 2020 as compared to 2010. The diversion in India's export basket is attributed to sectors like organic chemicals (SITC 51), medicinal and pharmaceutical products (SITC 54), road vehicles (SITC 78) and miscellaneous manufactured articles (SITC 89) which witnessed remarkable increased in the share during 2000 to 2020. These sectors are relatively more capital intensive which use medium to high end technology (UNCTAD, 2021). Sectors like road vehicles, textiles, toy industry, furniture, apparel are low to medium technology intensive and at the risk of rising automation. Furthermore, rising protectionism in foreign trade also add the concern for supply of intermediate goods. Thus, upcoming foreign trade policy needs to consider three things to boost labour intensive sectors. Firstly, labour and human capital intensive sectors need skill up-gradation to cope up with rising automation in post Covid-19 world. Secondly, large part of these sectors is comprises of small and medium enterprises which need policy support in terms of export credit or subsidy rather than imposing tariff (Veeramani, 2012). Lastly, policy need to supportive the vision of be vocal about local in terms of boosting domestic comparative advantage.

India's Market Concentration: Need to be Global for Local:

Market concentration shows how much country is exporting to different parts of the world. The degree of geographical export diversification measured by HH Market concentration index which shows whether country's export is concentrated to fewer markets or not. To analyzed the market concentration India's export share and trade intensity with major trading partners divided into traditional trading partners and emerging trading partners. Trade intensity measure whether India's exports share to partner country is greater than the world export share. If India's average export to partner country is higher than that of average world export then value of index is greater than one and called the intense trade relationship. India's export to traditional trade partners remains dominated over emerging trading partners. India's traditional export destinations are developed countries with accounts more than 50 percent of its export during 1990 to 2000. Export share to traditional trading partners showcase a decelerated trend from the year 2000 onwards. India's export to traditional trade partners come down to 31 percent in 2010. The policy initiatives in the form of look east policy and incentives for market diversification leads to increasing India's export to emerging economies such as China and UAE. The contribution of emerging market rose to 50 percent during 2000 to 2010. The increasing trade with emerging market is following with the world export trend. Slowdown in the traditional countries may provide a short-term rationale for export diversification strategy.

However, considering the basic Heckscher-Ohlin trade patterns advocates trade specialization between dissimilar economies. Labour-intensive country like India should focus on capital-rich countries to promote trade. India's market concentration is shifting gear ones again to traditional trade partners. The share of traditional trading partner increased to 36 percent in 2020 thanks to rise in trade with United States. On the other hand, India's export to emerging region decreased to 43 percent in 2020 from 50 percent in 2010. Sharp fall in export to China and UAE lead to slowdown in trade intensity to emerging region. The increasing trade with traditional trading partners from 2010 onwards leads to increasing trade intensity. It is often argued that at the initial stages of development country become less specialized and more

diversified in terms of export, while with the development country focus on specialization (Panagariya, 2008). Geographical shift in India's export basket towards the developed countries need policy boost to enhance the comparative cost advantage in form of specialization of labour intensive products.

Policy Concentration: Caution implementation of 'Atamanirbhar':

At this juncture India's foreign trade policy needs to focus on recalibrate an export-led growth strategy by being vocal about local products. The focus on export of labour intensive products both the skilled and unskilled assist to boost the employment generation as it has capacity to absorb the excess labour from agricultural sector. The increasing trade with the developed countries can assist to reap the benefits of comparative advantage in labour intensive products. Thus, policy efforts need to be complement by trade facilitation and diversify market access to be global in true sense. The policy initiatives like Atamnirbhar Bharat needs a cautious implementation as the focus on substitution of import may hamper the comparative cost advantage. To facilitate the export growth the measure like export subsidy and export credit to selected sectors helps for policies like 'Atamanirbhar Bharat and Make in India'. Furthermore, considering the comparative advantage there is a need to be vocal about labour intensive products (unskilled and skilled) at global level.

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Marketing of Library and Information Science Products and Services : An Inclusive Approach

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Abstract :-

Inclusive education is a new approach towards educating the people with special needs and thus, the role of the libraries become much more important in imparting education by providing information resources to one and all accommodating individuals with disabilities. Lack of awareness and skills to utilize the library resources is a major barrier to Inclusive Literacy where all people regardless of their level of ability or disability have opportunities to participate in community life. Therefore libraries need to re-look, reanalyze and re-design their products & services and a bridge the gap between availability of library resources and users' awareness about them. Accordingly, marketing concept and strategies have been accepted and adopted by present day libraries to promote and publicize their nature, role, collection and services and to attract, inform and make users' aware about the latest developments and design tailor made services in anticipation .

Important Concepts:

Marketing:

Marketing is the process of discovering and translating consumer needs and wants into products and services specifications, creating demand for these products and services and then in turn expanding this demand. It is an exchange relationship providing mutual benefits to both producer and consumer.

Marketing of LIS Products and Services:

Marketing of LIS Products and Services imbibe library authority mindset, vision and objectives with professionals collective efforts to promote and inform the users' about library collection, services and facilities to satisfy and meet the information needs of varied category of users' using marketing tools and techniques. LIS products that are marketable are- Bibliographies, Handbook, State -of -the -Art Report, Databases, Index, Abstracts etc. Similarly library services such as – Circulation Service, Reference Service, Literature Search, DDS, CAS, SDI, Translation Service, Reprographic Service, Database search etc. can be promoted through various marketing tools.

Inclusive Library:

Access to information is the major problem for the disabled user in India. An inclusive library is a place that welcomes everyone to participate in its programs and services. It strives to remove physical and attitudinal barriers that prevent patrons with disabilities from using the library and promotes their full participation in their communities, catering the information needs of all. According to Census 2011 of India, there are eight types of disabilities recognized.

Need of the study:

The Google mania, age old services without changes in delivery modes, users' ever increasing varied information needs and demands for pinpointed, exhaustive and expeditious services with use of social media tools, reluctance of staff members thinking, training, and lack

of awareness among the users about availability of resources and how to access and put to use to all types of users irrespective of their ability and disability are few reasons to take up this study. The need can be seen in terms of:

- Identification of every user's needs.
- Creating awareness of LIS products and services in the users' by promotional measures in an inclusive manner.

Objectives of the Study:

- To examine the application of the marketing concept to library products and services in an inclusive environment.
- To unveil the marketing tools used to build an inclusive library.
- To find the specific needs of differently abled students in terms of library services.

Scope of the Study :

The scope of the present study is limited to the Marketing of LIS products and services to the differently abled users. The study is to know how the libraries can design tailor made products and services as per requirement, what more libraries can offer, what marketing tools and techniques are employed to make aware the current users'.

Research Methodology:

For the systematic study of any concept, methodology is important and most indispensable step. The present study "Marketing of Library and Information Science Products and Services: An Inclusive Approach" is based on literature review, various observations and professional experience. It is a concept paper with an intention to create awareness about the application of marketing techniques in promoting the library resources in an inclusive environment for the expected users.

Review of Related Literature:

Review of literature is essential to give insight of the topic through background readings. Amit Kumar and Bhatt at one side India is marching towards becoming the knowledge-based society in present era and at the other side the importance of librarianship and LIS professionals is growing rapidly world widely. Due to this the new changes and the new challenges have been also emerging in librarianship, thus, there is a need to consider and give due importance to the adaptation of these changes for sustainability and survival. Therefore, it is the need of the hour to redesign and reshape the functioning and to work dynamically. Indian librarianship not only welcoming these new changes and challenges but also adopting with open arms the new Information and Communication Technology and applying technology in redesigning and reshaping the entire functioning of the libraries for making them most efficient and effective library and information system. Out of many new challenges which have emerged in the past one decade or so one of the most challenging and dynamic change of Indian librarianship is the march towards applying the marketing management techniques and tools to make librarianship much more manful, thus, it has become a powerful tool in meeting the contemporary challenges.(155-158)

Amritpal Kaur and Sarita Rani determined the attitude of library professionals towards the concept of marketing and also how it is applied in practice to marketing of university library products and services. Library search concerning the subject was made to examine the findings of earlier relevant studies. To collect the relevant data, a questionnaire was designed and

distributed to the subjects under study. Interviews were also conducted with the librarians/professional staff to fill in any gaps in the questionnaire. The librarians/professional staff have positive attitudes towards the marketing of library information services and products and admit that each library should have a mission statement and a full time professional to handle marketing-related activities; but in practice, no library under study has its own logo, mission statement or a specifically designated personnel for marketing-related activities.(515-537)Chaddha started with the definition of marketing and its role in non-profit organizations like Library and Information Centers (LICs). Barriers to marketing of Library and Information Products and Services (LIPS) are discussed along with Dr. Ranganathan's Five Laws of Library Science and their impact on marketing of LIPS. The basics of marketing mix are analyzed as to how the librarians can apply innovative methods using the extended marketing mix or the "Seven Ps" for marketing of LIPS, which in the end fulfills the ultimate goal of the parent institution. The chapter concludes with suggested measures for innovation by libraries in emerging economies. (190-205)

Garoufallou discussed marketing supports the reaching of organizational goals by focusing on the identification and satisfaction of customer needs, thus it can also contribute considerably in achieving the objectives of non-profit organizations such as libraries. The purpose of this paper is to provide an overview of the literature on the incorporation of marketing notions and the implementation of marketing techniques in library management. It reviews definitions, present different opposing views, marketing issues, social media and Web 2.0 and opinions on the adoption of marketing in a non-profit organization environment, and examines different successful examples of marketing implementation, concentrating on the gains resulting from such a move. (312-334)

Gupta examined the concept of marketing is widely applicable in library and information environment. Marketing concept itself is changing and has different meaning for different people. Now marketing is whole organization concept and organization wide philosophy, which requires years of continual work. It is a way of working and a way of serving the customers in which every activity is committed to customer satisfaction. Marketing of library services is the effective execution of all the activities involved in increasing satisfaction of users by providing maximum value to them. It is a total solution for library and information centers. There have been enormous developments in marketing of library and information services around the world. The present paper explores the discipline of marketing of library services as a new academic subject in library and information education focusing on the Indian experience. (95-108)

Islam and Islam Considered the concept of marketing in the light of library and information services and mentions the necessity of marketing techniques in library and information centres. It outlines the principles of information products/ services marketing and discusses the key steps of marketing for library and information centres. The article indicates the methods of applying marketing techniques to library and information centres and marketing difficulties to library and information services in developing countries are also discussed, with particular reference to those in Bangladesh. (123-132)

Jestin and Parameswari discussed that a society that consumes and generates the most knowledge and information is the strongest society. The information industry has grown dramatically in services, revenue, and coherence over the last decade. Though the marketing of information services is a concept of comparatively recent origin, it has now emerged as an

important area for libraries and information centers. Marketing covers those activities that connect the organization to those parts of its outside world that use, buy, sell or influence the outputs it produces and the benefits and services it offers (O'Shaughnessy). As Kotler points out, organizations such as museums, universities, libraries, and charities need to market their causes and their products to gain political and social support as well as economic support. One of the major barriers to operating a profitable information business is the lack of business expertise among librarians and information scientists. Marketing is a comprehensive term that describes all the processes and interactions that result in satisfaction for users and revenue for the information firm. Libraries and information centers have begun to realize that marketing of information products and services is an integral part of administration, especially as a means for improving user satisfaction and promoting the use of services by current and potential users. Three main factors, namely the information explosion, the technology revolution, and escalating library costs are responsible for encouraging the library profession to develop a marketing approach in its operations and services. Some information service managers feel that marketing is inimical to the nature of their activities. But with increased competition in the world of information, marketing is a factor for survival. At the same time, there is a common misconception that promotional activities alone constitute marketing. (32-42)

Kanaujia reflected the gradual change in the need and use of the marketing concepts in libraries and information centres (LICs) and its fruitful effects in the service to the library users, and studies marketing of information products/services in LICs of R&D institutions of Council of Scientific & Industrial Research (CSIR) of India. The paper discusses the role of these LICs including marketing approach, need and application of a marketing program with the help of a survey. For the survey, data were collected through a detailed mailed questionnaire along with interviews. The findings reveal that librarians have a positive attitude towards the different aspects of marketing of a library's information products/services. The study recommends that currently efforts for increasing user-awareness and separate financial support are requisite for efficient marketing. Instead of scattered approaches and different styles, a coherent view must be taken.(350-360)

Srivastava and Bhatt Inclusive Education involve restructuring the culture, policies and practices in our academic institutions to meet the diversified needs of all students. Thus inclusive education means that all students, regardless of their ability level, are included in mainstream classroom. The students with disabilities are much more dependent on the library services as compared to the normal students. Thus, it is imperative that the library information resources and ICT gazettes available in the library for them be taken at the door step of them. In order to provide effective and efficient library services to them application of marketing tools in promotion of the library products and services are must. The present article deals with the concept of Inclusive Environment, Inclusive Education, and tools to be used for the promotion of LIS products and services. (122-126)

Style Used for Bibliographic References : Modern Language Association style has been adopted to give uniformity in referencing.

Marketing Tools for building Inclusive library: In order to bring all information resources and services available in the library at the door step of the users with disabilities, following important promotion tools need to be used:

Communication:

Communication can be personal and non-personal. Personal communication is one to one and usually word of mouth. Although other media such as e-mail, fax etc. are significant. Non-personal communication channels include TV, radio, posters, newspapers, etc.

Atmospherics:

This term is coined by Philip Kotler. It means the working environment, library ambience; appearance of employees, the physical setting, lighting, work environment, noise levels, etc. must be healthy and suitable to make a positive impact on differently abled users. There should be proper and large signages preferably in Braille for Visually Impaired users. Locker shelves should be at reachable height keeping in mind the specific need of locomotary disabled persons.

Advertising:

Advertising is important for promoting library services. A library can advertise its products and services in newspapers, scholarly journals, magazines, newsletters, brochures, pamphlets, radio, television, Web, etc. Advertisements help in image-building of a library. We can promote library services through user orientations.

Extension activities:

Activities such as book displays, lectures, quiz, debates, seminars, competitions, exhibitions, etc., can have a positive impact on the image of the library and can motivate people to come to the library and promote the use of its products and services. Also besides promoting traditional knowledge about library resources libraries can also take up general topics for discussion and talks like skills in technical writing, ICT competencies etc. which are of larger interest.

Library Tour:

Library tour for new and existing members can be used to promote the library services. While on a library tour, users can be prompted to ask questions and find out more about new activities, products, and services. Virtual library tour is also helpful to differently abled users.

Library Month/Day:

Organizing national library day/month can be an effective way to promote the library. A library can create awareness of its importance in society.

Websites

Libraries websites should be disabled friendly and accessible by users at any time. The websites contain details about the library, including the collection, subscriptions, service policy, terms and conditions, etc. It may also have graphics and multimedia advertising that can have an impact on visitors. The library website should be continuously updated to avoid an adverse effect the image of the library. The website can also be interactive so users can communicate with staff.

Electronic Means:

There are many electronic means to promote library services and products like- e mail, Facebook, Blog, Twitter, Mobile Technology etc. Mobile app gives personalized services to all types of users with information about library activities and event.

Few other measures that can make library inclusive and accessible to all are:

- Availability of Large print Books, Braille books and magazines, newspapers.

- Various assistive softwares like JAWS, NVDA and assistive devices like Laptops, DAISY Reader.
- Providing hearing Aids like FM system, OCR system.
- Collection must include CDs, audio books, captioned videos.
- Pictorial guide to the library must be available at help desk.
- Specialized computers, alternative keyboards, mouse for visually impaired users.
- Social awareness about the disability education.
- Training to library staff in sign language, assistive technologies is essential to make above all the measures meaningful.
- Patience is the key to understand user needs and thereby help in providing effective library services.

Conclusion:

Libraries sit at the heart of their communities. Building an inclusive library is one of the first steps in addressing the diverse information needs of all members in the community. An inclusive library is a vital community resource. Another aspect of becoming an inclusive library involves getting to know your user in a detailed way. This will help library to provide full access to their range of services and facilities to its entire user as per their requirement, thereby making its services more user oriented. Assistive devices and technologies such as wheel chairs, prosthesis, mobility aids, hearing aids, visual aids and specialized computer software and hardware increase mobility, hearing, vision and communication capacities. With aid of these technologies people with a loss in functioning are better able to live independently and participate in their society. Thus we can say that an inclusive library respects the dignity and privacy of all users. The need is to create awareness among library professionals. Special training program for library staff must be organized for providing better library services in an inclusive manner, keeping in view the needs of its entire user. They must be competent in handling all the available assistive technology in their organization. Academic institutions must also extend every possible support in creating a barrier free institution in terms of architectural facilities, policies and approach in imparting education.

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Understanding Consumer Behavior through Marketing Research

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Abstract:

As a matter of fact, consumer behavior differ in ages, incomes, education levels, tests, preferences etc, all these factors affect the behavior of the consumers. The study of consumer behavior helps in analyzing different factors that have an influence on the buying decisions of the consumers. If the marketers fail to understand these factors, they would not meet their targets. The modern marketing concept viewed from the customer point of view. Only producing the product is not enough after the production, services also play an important role to make customer a loyal one. Before launching a product producer has to make market research to know consumer behavior towards goods and services. The present study is based on secondary data, collected from online journals, books, articles etc. the objectives of the study is to know the consumer behavior and expectations through services marketing research, to understand the objectives of research, to study qualitative and quantitative research. Thus the marketing research differs from company to company, consumer to consumer. It helps to understand consumer behavior through a valid qualitative and quantitative research and helps the marketer to understand his customer expectations and perceptions.

Keywords : Marketing research, consumer behavior, consumer expectation, qualitative research, quantitative research

Introduction:

A consumer is a person or group who pays to consume the goods and/or services produced by a seller. A consumer is a person or a group who intends to order, orders, or uses purchased goods, or services primarily for personal, social, family, household and similar needs, not directly related to entrepreneurial or business activities. Consumer behavior is the study of how individuals make decisions to spend their valuable resources viz time, money and efforts on consumption related items. It includes what they buy, why they buy it, where they buy it, how often they buy it, and how often they use it.

Understanding consumer behavior is important for any organization before launching a product. If the organization fails to analyze how a customer will respond to a particular product, the company may face losses. Consumer behavior is very complex because each consumer has a different mindset and attitude towards purchase, consumption and the disposal of the product. Consumer behavior helps to market the product or services successfully. Moreover, studying consumer behavior helps in many aspects of the business. As there is continuous change in the living standards, trends, fashion and change in technology, consumer's attitude towards the purchase of product varies. Understanding these factors is very important because the marketing of the product is largely dependent on these factors. Thus, there is a need of service marketing research to understand consumer behavior, consumer expectations and perceptions.

Market research is the process of analyzing data about a market, product, or service. And the most obvious benefit is its ability to help you understand your customer through efficient research, businesses are able to establish an open-ended line of communication with their customers.

The ultimate goal of consumer research is to serve as the voice of the consumer. This type of research focuses on understanding the consumer as a person by learning more about his or her attitudes, needs, motivations, and behavior as they relate to a product or service. More broadly, consumer research helps provide a company with relevant, valid, reliable, and current information about their target buyer.

In the field of marketing, consumer market research can generally be defined as the systematic collection and evaluation of data regarding customers' preferences for actual and potential products and services. It is also important to note that consumer market research is not the exactly the same as marketing research. Marketing research is actually comprised of both consumer and business-to-business research and examines all aspects of a business environment.

Purposes of consumer market research are as follows:

- It helps the companies to take better business decisions and gain advantages over the competition
- It helps marketing managers or executives to take various strategic and tactical decisions in the process of identifying and satisfying customer needs
- It remove some of the uncertainty by providing relevant information about the marketing variables, environment, and consumers. In the absence of relevant information, the consumer response to marketing programs cannot be predicted reliably or accurately
- It provide insights that help to guide the creation of a business plan, launch a new product or service, optimize existing products and services, and guide expansion into new markets
- It determine which portion of the population will be most likely to purchase a product or service, based on variables such as age, gender, location, and income level
- It reveal characteristics of a target market
- It helps to understand how consumers response about the products in the market
- It helps to identify which consumer needs are important and whether the needs are being met by current products

Finding out what customers expect is essential to providing service quality, and marketing research is a key vehicle for understanding customer expectations and perceptions of services. In services, as with any offering, a firm that does no marketing research at all is unlikely to understand its customers. A firm that does marketing research, but not on the topic customer expectations, may also fail to know what is needed to say in tune with changing customer expectation.

Marketing research must focus on service issues such as : what features are most important to customers?, what levels of these features customers expect?, and what customers think the company can and should do when problems occur in service delivery. Even when a service firm is small and has limited resources to conduct research, avenues are open explore what customers expect.

Research objectives for services:

The first step in designing services marketing research is without doubt the most critical part is defining the problem and research objectives. Some of the common research objectives in series are:

To discover customer requirements or expectations for service.

- To monitor and track service performance.
- To assess overall company performance compared with that of competition.
- To assess gaps between customer expectations and perceptions.
- To identify dissatisfied customers, so that service recovery can be attempted.
- To gauge effectiveness of changes in service delivery.
- To appraise the service performance of individuals and teams for evaluations, recognition, and rewards.
- To determine customer expectations for a new service.
- To monitor changing customer expectations in an industry.
- To forecast future expectations of customers.

These research objectives are similar in many ways to the research conducted for physical products: both aim to assess customer requirements, dissatisfaction, and demand. Service research, however, incorporates additional elements that require specific attention.

First, services research must continually monitor and track service performance because performance is subject to human variability and heterogeneity. Conducting performance research at a single point in time, as might be done for a physical product such as an automobile, would be insufficient in services. A major focus of services research involves capturing human performance at the level of individual employee, team branch, organization as a whole, and competition. Another focus of services research involves documenting the process by which service is performed. Even when service employees are performing well, a service provider must continue to track performance because the potential for variation in service delivery always exists.

A second distinction in services research is the need to consider and monitor the gap between expectations and perceptions. This gap is dynamic because both perceptions and expectations fluctuate. Does the gap exist because performance is declining, because performance varies with demand and supply level, or because expectations are escalating?

Criteria for an effective service research program:

- Includes both qualitative and quantitative research
- Includes both expectations and perceptions of customers
- Balances the cost of the research and the value of the information
- Includes statistical validity when necessary
- Measures priorities or importance of attributes
- Occurs with appropriate frequency
- Includes measurement of loyalty, behavioural intentions or actual behavior.

Once objectives such as these have been identified, they will point the way to decisions about the most appropriate type of research, method of data collection, and ways to use the information.

Elements in an effective marketing research program for Service :

Understanding the criteria for an effective services research program will help a company evaluate different types of research and choose the ones most appropriate for its research objectives.

I. Qualitative Research:

Marketing research is not limited to surveys and statistics. Some forms of research, called qualitative research are exploratory and preliminary and are conducted to clarify problem definition, to prepare research for more formal research, or to gain insight when more formal research is not necessary.

1) Complaint Solicitation

- * To identify or attend to dissatisfied customers
- *To identify common service failure points

2) Critical incident studies :

- *To identify “best practices” at transaction level
- *To identify customer requirements as input for quantitative studies
- *To identify systemic strengths and weaknesses in customer contact services.

3) Requirements research:

- *To identify customer requirements as input for quantitative research.

4) Service expectation meetings and reviews

- *To create dialogue with important customers
- *To identify what individual large customers expect and then to ensure that it is delivered.
- *To close the loop with important customers.

5) Market- oriented ethnography

- *To research customers in natural settings
- *To study customers from cultures other than America in an unbiased way.

6) Customer Panels

- *To monitor changing customer expectations
- *To provide a forum for customers to suggest and evaluate new service ideas.

7) Lost customer research

- *To identify reasons for customer for customer defection.
- * To assess gaps between customer expectations and perceptions.

8) Future expectations research

- *To forecast future expectations of customers
- *To develop and test new service ideas.

II. Quantitative Research:

Quantitative research in marketing is designed to describe the nature, attitudes, or behaviours of customers empirically and to test specific hypotheses that a services marketer wants to examine. Quantitative research clearly is essential to assessing and improving service delivery, and design for it provides managers data from which they can make inferences about customer groups. These studies are key for quantifying the customers satisfaction, the importance of service attributes, the extent of service quality gaps, and perceptions of value. Such studies also provide managers with yardsticks for evaluation competitions.

1) Relationship surveys and SERVQUAL surveys:

- *To monitor and track service performance

- *To assess overall company performance compared with that of competition.
- *To determine links between satisfaction and behavioural intentions.
- *To assess gaps between customer expectations and perceptions.

2) Trailer calls

- *To obtain immediate feedback on performance of service transactions
- *To measure effectiveness of changes in service delivery
- *To assess service performance of individuals and teams.
- *To use as input for process improvements.
- *To identify common service failure points.

3) Process checkpoint evaluations

- *To determine customer perceptions of long term professional services during service provision.
- *To identify service problems and solve them early in the service relationship.

4) Mystery shopping

- *To measure individual employee performance for evaluation, recognition and rewards
- *To identify systemic strengths and weaknesses in customer contact services.

5) Database marketing research

- *To identify the individual requirements of customers using information technology and database information.

Marketing research identifies opportunities, generates informed marketing actions, monitors marketing performance, and improves understanding of the marketing process. Regardless of what type of research marketing managers conduct, it may be quantitative or qualitative and their ultimate goal is to understand and predict consumer behavior.

Conclusion:

Understanding Consumer behavior, expectation and perception, theories and concepts are of maximum importance to the marketing teams. As products and its related services are made to cater to the consumer's wants and needs, therefore, the products and services should be designed and marketed accordingly for meeting the organizational goals. With the help of a good services marketing research program which includes multiple types of research studies. The composite of studies and types of research will differ by company because the range of uses for service quality research from employee performance assessment to advertising campaign development to strategic planning requires a rich, multifaceted flow of information.

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A Systematic Investigation of Nanoparticle Synthesis of 1-Tetra-O-Acetyl –B-D-Glucosyl-3-aryl Thiocarbamide

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Abstract:-

In recent years, nanotechnology is an escalating field of modern research involving synthesis design, characterization, production, and application of structures, devices, and systems by controlling shape and size at the nanometer scale. Nanotechnology also involves the synthesis of nanoparticles. These compounds arouse interest as potential biologically active substances and versatile intermediates for preparing various derivatives. To achieve the principle of green chemistry process, it leads to the search for green synthesis of nanoparticles. Here we have synthesized 1-Tetra-O-acetyl-B-D-glucosyl -3-aryl thiocarbamide by reaction of Tetra-O-Acetyl-B-D-glucosyl isothiocyanate with various aryl amines. The identities of newly synthesis compounds have been established based on usual chemical transformation and U.V, IR, NMR, Mass and Particle Size analysis Analytical studies.

Keywords: TAG Isothiocyanate , Aryl Amines and Tetra-O-acetyl-B-D-glucosyl -3-aryl thiocarbamides nanoparticles.

Introduction:-

Described as the manipulation of atomic matter, nanotechnology was described theoretically in the 1960s by Richard Feynman, and the practice emerged a decade later. After Taniguchi's, Drexler's, and other scientist's valuable contributions, nanomedicine has developed [1,2] and recently, the three main applications of nanomedicine are in tissue engineering, nanoprobe, and nanoparticles for drug delivery. The field of nanotechnology is one of the most active research areas in modern materials science. Nanoparticles exhibit new or improved properties based on specific characteristics such as size, distribution, and morphology. There have been impressive developments in the field of nanotechnology in the recent past years, with numerous methodologies developed to synthesize nanoparticles of particular shape and size depending on specific requirements. New applications of nanoparticles and nanomaterials are increasing rapidly.

Nanotechnology, as defined by size, is naturally very broad, including the field of science as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, energy storage, microfabrication, molecular engineering, etc. The associated research and applications are equally diverse, ranging from extensions of conventional device physics to completely new approaches based upon molecular self-assembly, from developing new materials with dimensions on the nanoscale to direct control of matter on the atomic scale. Nanotechnology may create many new materials and devices with various applications, such as in Nanomedicines, Nanoelectronics, and biomaterial energy production and consumer products.

Lipid-based Nanoencapsulation systems are useful in the properties of antioxidants. It enhances the performance of antioxidants just by improving their solubility. Antioxidants

protect our body against age-related, and chronic diseases. When antioxidants are given in their free form, they cannot pass cell membranes, so can easily be cleared from the general circulations reason behind the usefulness of nanocapsulation.³

Carbohydrates are important, abundant, and a fundamental class of biomolecules containing Carbon, Hydrogen, and oxygen. The old view on carbohydrate as a natural energy source (starch and glycogen) and structural material (e.g., cellulose, collagen, proteoglycans, and DNA backbone) have expanded, and it is a fact that the role of carbohydrate is much more sophisticated and complex. Today carbohydrates are known to have a variety of functions in mammals⁴⁻⁵. Carbohydrates play an essential role in a vast array of biological processes, and mainly there are many advantages; for example, carbohydrate-based drugs show low toxicity and immunogenicity⁶. Thus because of biological importance, carbohydrates have aroused much interest in synthetic and medicinal chemistry^{7, 8}.

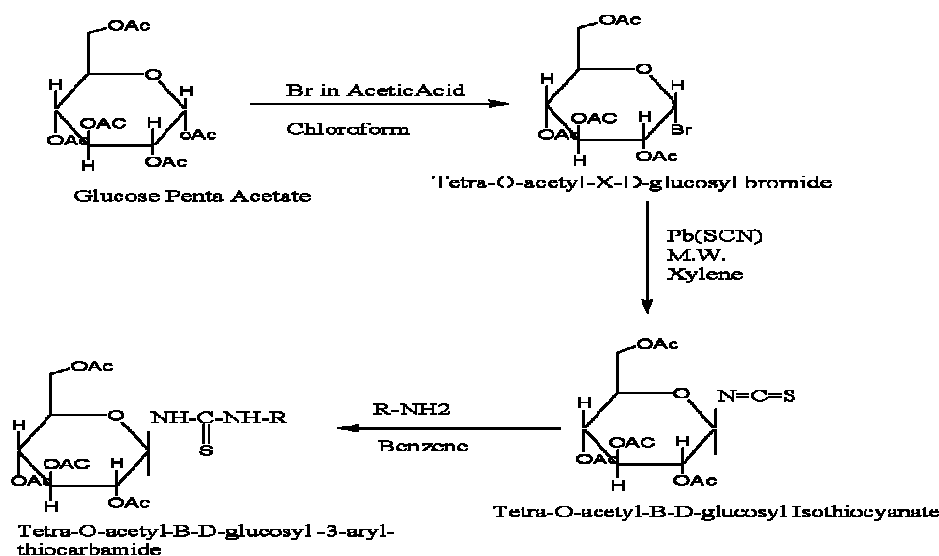
Carbohydrates derivatives have been extensively investigated, including synthesis, characterization, and biological activity. Partly due to the fact that many naturally occurring saccharides and synthesized analogs exhibit various and potent biological activities, and they have been widely employed as agrochemicals and pharmaceuticals⁹⁻¹⁰.

Results And Discussion:

Nanoparticles:

A nanoparticle is a sub-classification of the ultrafine particle with lengths in two or three dimensions greater than 0.001 micrometer (1 nanometer) and smaller than about 0.1 micrometer (100 nanometers) and which may or may not exhibit a size-related intensive property. This term is a subject of controversy regarding the size range and the presence of a size-related property. Current usage emphasizes size and not properties in the definition. The length scale may be a hydrodynamic diameter or a geometric length appropriate to the intended use of the nanoparticle. The chemistry of thiourea of carbohydrates is extensively elaborated and well documented. These compounds arouse interest as potential biologically active substances and versatile intermediates for preparing various derivatives

Reaction Scheme:-



Here Tetra-O-Acetyl-β-D-Glucosyl-3-aryl-Thiocarbamide was synthesized by both methods; conventional and Microwave method. Tetra-O-acetyl-β-D-glucosyl isothiocyanate was react with

aryl amines in benzene medium after that reaction mixture was titrated several times with petroleum ether. The product is confirmed based on the melting point and other studies.

Experimental:

Melting points recorded on electrothermal melting point apparatus are uncorrected. Specific Rotations were measured on Equip-Tronic digital polarimeter model no. EQ 800 at 30°C in CHCl₃. IR spectra were recorded on a Perkin Elmer spectrometer. ¹H NMR were obtained on a Bruker DRX-300 (300 MHz FT NMR) NMR spectrometer in CDCl₃ solution with TMS as an internal reference. The mass spectra were recorded on a DART mass spectrometer. Particle Size was analyzed by Malvern particle size analyzer.

I) Preparation of Tetra-O-acetyl-β-D-glucopyranosyl isothiocyanate :

This has been prepared by the interaction of tetra-O-acetyl-β-D-glucopyranosyl bromide and lead thiocyanate, the former was prepared according to the procedure described earlier. Details of typical experimental are as follows :

a) Microwave assisted preparation of glucose penta acetate :-

Peracetylation of glucose to give the acetyl derivative with small excess of acetic anhydride under the catalyst of either Potassium or Sodium acetate (anhydrous) was found practically quantitative in less than 15 min with microwave heating.

Herein, we reported first time peracetylation of glucose in molecular proportion of acetic anhydride (30 ml) using catalyst sodium acetate 0.8 gm. Under Microwave heating the reaction was complete in less than 10 min. Product was isolated by pouring in ice cold water with constant stirring and cooling.

The glucose penta acetate is separated out; purification of the product was done under a water ethanol system. Melting point of Glucose penta acetate was found to be 110°C.

b) Synthesis of Tetra-O-acetyl-β-D-glucopyranosyl bromide :

The finely powdered glucose pentaacetate (21.0g) was added gradually to the brominating reagent. After the addition the flask was kept for 2 hr. at room temperature. The reaction mixture was mixed with chloroform (50 ml) then the mixture was shaken vigorously for about 15 min. The resultant mixture was poured in ice cold water.

The chloroform layer was then separated. It was washed several times with aqueous sodium bicarbonate to remove excess of acetic acid followed by the aqueous sodium metabisulphate to remove the excess of bromine and finally 2-3 times with water. To the chloroform layer addition of petroleum ether afforded a solid (15 g). This solid was expected to be tetra-O-acetyl-β-D-glucopyranosyl bromide, it was crystallized from ethanol, m.p. 88-90°C.

d) Preparation of lead thiocyanate :

Lead thiocyanate was prepared by mixing aqueous solution of lead nitrate and ammonium thiocyanate. The white granular lead cyanate was filtered, washed with distilled water and dried at 50°C.

Preparation of Tetra-O-acetyl-β-D-glucopyranosyl isothiocyanate :

To a suspension of tetra-O-acetyl-β-D-glucopyranosyl bromide (21 g) in sodium dried xylene (80 ml) was added lead cyanate (15g). The reaction mixture was refluxed gently for 3 hr. with frequent shaking. This solution was then cooled and liberated lead bromide was removed by filtration. The xylene filtrate was then treated with petroleum ether (60-80°) with stirring, a pale

yellow solid obtained (12 g). This solid was expected to be tetra-O-acetyl- β -D-glucopyranosyl isocyanate. It was purified by dissolving it in a minimum quantity of chloroform and reprecipitating it with petroleum ether. m.p 115-120°C

Table No-2:- Study of synthesis of 1-tetra-O-acetyl- β -D-Glucosyl isothiocyanate under microwave irradiation¹¹

Sr. No.	Amount of G-Bromide	Amount of Xylene	Time	Power in watt	Temp. °C	% Yield
1	10.0 gm	80 ml	35 min	P-70	120-130	90%
2	20.0 gm	120 ml	40 min	P-80	130-140	80%
3	30.0 gm	150 ml	40 min	P-80	135-145	65%

- Lead thiocyanate was taken in equimolar proportion of G-Bromide.
- G-Bromide :- 1-tetra-O-acetyl- β -D-Glucosyl-Bromide

Experiment No. 1:- synthesis of 1- tetra-O-acetyl- β -D-glucosyl-3-p-amino phenyl thiocarbamides

Benzene solution of 1-tetra-O-acetyl- β -D-glucopyranosyl isothiocyanate (0.005 M, 1.0 g in 20 ml) was added to benzene solution of 1,4 phenyl diamine (0.005 M, 0.35 g in 10 ml) and reaction mixture was kept under microwave irradiation . Afterwards, solvent benzene was removed by distillation and resultant syrupy mass was triturated several times with petroleum ether, a granular solid was obtained, crystallized from ethanol-water, m.p. 162-167°C.

The product was found soluble in ethanol, acetone, chloroform and benzene while insoluble in water and petroleum ether. It charred on heating with conc. sulphuric acid. It was found non-desulphurised when boiled with alkaline plumbite solution. The product was optically active and its specific rotation was found to be $[\alpha]_D^{28} = 125.20^\circ$ (c, 0.96 in chloroform). The purity of the product was checked by TLC, Rf value 0.93 (CCl₄ : EtOAc, 3:2).

Analytical and Spectral Data of Compounds:

1) Synthesis of 1-tetra-O-acetyl- β -D-glucosyl-3-p-amino phenyl thiocarbamide

Yield 71 (%); Mp.162-167°C; $[\alpha]_D^{32} 125.42^\circ$ (0.1, in CHCl₃); Rf (Hexane:EtOAc)(1:1)0.93; **IR (KBr)cm- 1:** v 3373 (N-H)str 3055 (Ar-H)str ,1745 (C=O)str, 1624(C=N) str, 758 (C=S) str , 1242 (C-N)str, 939(char. of glucopyranosyl ring), 900 (mono Substituted Benzene) str.. **¹HNMR (CDCl₃)ppm:** 7.49-7.19 (m,8H, Ar-H), 5.17-5.99 (m, 7H, glucosyl-H), 2.31-2.01 (m, 12H,OAc),. **MS(m/z) :** 498 (M+),Not located ,387, 331, 169, 108.

Preparation of Nanoparticles of 1-tetra-O-acetyl- β -D-glucosyl-3-p-amino phenyl thiocarbamide:

Take about 1 gm of 1-tetra-O-acetyl- β -D-glucosyl-3-p-amino phenyl thiocarbamide and dissolve it completely in the 20ml of solvent in a 250 ml beaker and add polyvinyl alcohol as a stabilizer 1.5ml . Now put this beaker in a sonicator. The highly penetrating acoustic waves are passed through the mixture, which creates high-pressure bubbles in the beaker due to which breakdown of the bulk material took place and desired sized nanoparticles are formed. Then stirred mixture about 6hr. in a magnetic stirrer at room temperature. The size determination of nanoparticles is done by the particle size analyzer studies

Characterization of Nanoparticles:

1. Characterization using UV-Spectrophotometer: Single Beam UV-Spectrophotometer with software BI/CI/SP/SB-S-03 of Bio Era make. The UV-Visible Spectroscopy reveals the

formation of Nanoparticles Characterization of Nanoparticles was done using a visible Spectrophotometer by using a model by showing different absorption of those from bulk material.

2. Size determination of Glucose PentaAcetate, Nanoparticles by X-ray Diffraction studies(Particle Size Analysis): From the X-ray diffraction, it comes to know that size of nano Glucose Penta Acetate is 42.29 nm.

Size Distribution Report by Intensity v2.1



Sample Details

Sample Name: BULK 1
 SOP Name: mansettings.nano
 General Notes:

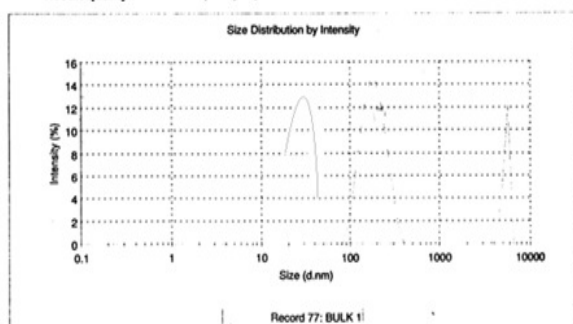
File Name: MARCH 2020 Dispersant Name: CHLOROFORM
 Record Number: 77 Dispersant RI: 1.446
 Material RI: 1.52 Viscosity (mPa.s): 0.7860
 Material Absorption: 0.100 Measurement Date and Time: Thursday, April 20, 2017 4:15...

System

Temperature (°C): 25.0 Duration Used (s): 50
 Count Rate (kcps): 28.7 Measurement Position (mm): 4.65
 Cell Description: Glass cuvette with square aper... Attenuator: 11

Results

Z-Average (d.nm): 44.2
 Pdi: 0.640
 Intercept: 0.196
 Result quality: Refer to quality report



Size Distribution Report by Intensity v2.1



Sample Details

Sample Name: BULK 1
 SOP Name: mansettings.nano
 General Notes:

File Name: MARCH 2020 Dispersant Name: CHLOROFORM
 Record Number: 77 Dispersant RI: 1.446
 Material RI: 1.52 Viscosity (mPa.s): 0.7860
 Material Absorption: 0.100 Measurement Date and Time: Thursday, April 20, 2017 4:15...

System

Temperature (°C): 25.0 Duration Used (s): 50
 Count Rate (kcps): 28.7 Measurement Position (mm): 4.65
 Cell Description: Glass cuvette with square aper... Attenuator: 11

Results

Z-Average (d.nm): 404.2 Peak 1: 184.7 82.4 55.92
 Pdi: 0.640 Peak 2: 5297 17.6 405.1
 Intercept: 0.196 Peak 3: 0.000 0.0 0.000

Result quality: Refer to quality report

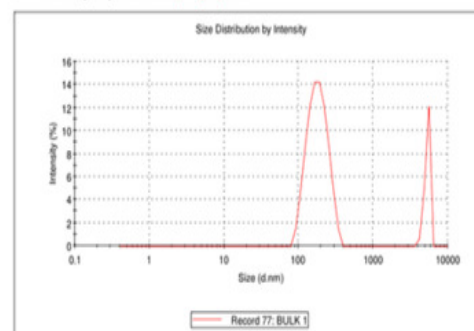


Table No. 2:- synthesis of 1- tetra-O-acetyl-β-D-glucosyl-3-aryl thiocarbamides

Sr.No.	-Nano of synthesis of 1- tetra-O-acetyl-β-D-glucosyl-3-aryl thiocarbamides	M.P. °C	Particle Size
1	synthesis of 1- tetra-O-acetyl-β-D-glucosyl-3-p-amino phenyl thiocarbamides	162-167	44.2 nm
2	synthesis of 1- tetra-O-acetyl-β-D-glucosyl-3-O-amino phenyl thiocarbamides	145-151	105 nm
3.	synthesis of 1- tetra-O-acetyl-β-D-glucosyl-3-m-amino phenyl thiocarbamides	184-190	175 nm

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New Approach for Solving Transportation Problem under Uncertain Environment : Fuzzy Transportation Problem

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Abstract:

In the present scenario of the competitive market, it is very important to satisfy customer's requirements within optimal cost and time. To meet these challenges, Transportation mode provides a robust framework. One of the most important applications of linear programming problems is the transportation problem. A transportation problem permits only those shipments that go directly from supply point to demand point. The traditional transportation problem deals with precise data in which the transportation cost, demands and supplies are certain (precise) values. However, in real life world we come across such numbers that are not certain i.e., the data given is vague or not clear. So, in these cases we use fuzzy Transportation problem as the term fuzzy deals with vague or imprecise data. Different methods are used to solve fuzzy transportation problems in real life. In this paper, we adopt Fuzzy Russell's Approximation method (FRAM) to solve fuzzy transportation problems (FTP) when all the costs are triangular fuzzy numbers and all supplies and demands are crisp numbers. FRAM is used to find initial fuzzy basic feasible solution (IFBFS). Then, to obtain optimal fuzzy solution Fuzzy Modified Distribution Method (FMDM) has been used. A numerical example has also been given in this paper to illustrate these approaches.

Keywords: Fuzzy Transportation Problem Triangular Fuzzy Number, Imprecise, FRAM, Optimal Fuzzy Solution.

Introduction:

The transportation problem is a type of linear programming problem used to study the optimal shipping pattern. Its objective is to transport material from different sources to different destinations so that the total cost of transportation is minimized. For this, it is important to know about the location of available supplies, the quantities demanded, and the cost of transporting supplies from different sources to different destinations. Each source has a limited supply, while each destination has a demand to be satisfied. The transportation model assumes that the shipping cost on a given route is in direct proportion with the number of units shipped on that route. It is very useful in industry and business for maximizing profit and reducing transportation time during safe delivery of goods from supply point to demand point. There are many approaches used to solve the transportation problems with precise data i.e., when the decision parameters like supply available at each source, the demand required at each destination, and the cost of transportation are given in a precise manner. But in daily life, we come across different situations where these decision parameters may not be in a precise manner. This is due to a lack of data, computational errors and uncertainty in one or more decision parameters. So, in these circumstances, we cannot solve transportation problems with certainty by using standard

methods and hence uncertainty theory came into existence. To deal with imprecise data Lotfi Zadeh had introduced the uncertainty theory and the term Fuzzy which means imprecise or not clear. Thus, in real-life applications with uncertain and imprecise parameters, the transportation problem can be solved by using a fuzzy approach.

The fuzzy transportation problem (FTP) is a transportation problem in which the decision parameters i.e., supply available at each source, the demand required at each destination, and the cost of transportation are fuzzy quantities or numbers. The motive of fuzzy transportation is to determine the transportation schedule that minimizes the total fuzzy transportation cost with imprecise parameters. In this paper, we present an algorithm to find an initial fuzzy feasible solution by using a fuzzy Russell's approximation method (FRAM) and the fuzzy optimal solution by using a fuzzy modified distribution method (FMDM) for the given fuzzy transportation problem.

Preliminaries:

The main purpose of this section is to describe some basic terms that are used in fuzzy transportation problems.

Definition: Fuzzy Set. If X is a collection of objects and x be any particular element of X , then a fuzzy set A defined on X may be defined as the collection of ordered pairs:

$$A = \{(x, \mu_A(x)) : x \in X\}$$

Where $\mu_A(x)$ is called a membership function that maps X to the membership space $[0, 1]$.

Definition: Fuzzy Number. Let A be the fuzzy set defined on the set \mathbf{R} of real numbers. Then the fuzzy set A on \mathbf{R} is said to be a fuzzy number if its membership function $\mu_A: \mathbf{R} \rightarrow [0, 1]$ satisfies the following properties:

- A must be a normal fuzzy set. It means that there exists at least one $x \in \mathbf{R}$ such that $\mu_A(x) = 1$.
- A is fuzzy convex. It means that for every $s, t \in \mathbf{R}$ and $\lambda \in [0, 1]$, we have

$$\mu_A \{\lambda s + (1 - \lambda) t\} \geq \min \{\mu_A(s), \mu_A(t)\}$$
- $\mu_A(x)$ is upper semi continuous and with bounded support in \mathbf{R} , where the support of A is denoted by $\text{supp}(A)$ and is defined as

$$\text{supp}(A) = \text{supp}(\mu_A) = \{x \in \mathbf{R} : \mu_A(x) > 0\}$$

Definition: Triangular Fuzzy Number. A fuzzy number $A = (a_1, a_2, a_3)$ in \mathbf{R} is said to be a triangular fuzzy number if its membership function $\mu_A: \mathbf{R} \rightarrow [0, 1]$ satisfies the following properties:

$$\mu_A(x) = \begin{cases} \frac{x - a_1}{a_2 - a_1} & \text{for } a_1 \leq x \leq a_2 \\ \frac{a_3 - x}{a_3 - a_2} & \text{for } a_2 \leq x \leq a_3 \\ 0 & \text{Otherwise} \end{cases}$$

We can also assign triangular fuzzy number by $A = (a_1, a_2, a_3) = (m, \alpha, \beta)$ where $m = a_2$, $\alpha = a_2 - a_1$, $\beta = a_3 - a_2$.

Ranking Function in Triangular Fuzzy Number:

A large number of active approaches have been proposed for the ranking of fuzzy numbers. Among such approaches, a ranking function is most widely used. The Ranking function is used to compare the triangular fuzzy numbers. The Ranking function maps fuzzy

numbers onto the set of real numbers. If $F(R)$ is the set of all fuzzy numbers defined on the set of real numbers, then for all $A = (a_1, a_2, a_3) = (m, \alpha, \beta) \in F(R)$, the ranking function $R : F(R) \rightarrow R$ is defined as

$$R(A) = \frac{a_1 + 2a_2 + a_3}{4} \text{ or } R(A) = m + \frac{\beta - \alpha}{4}$$

Let $A = (a_1, a_2, a_3) = (m_1, \alpha_1, \beta_1)$ and $B = (b_1, b_2, b_3) = (m_2, \alpha_2, \beta_2)$ be any two fuzzy triangular numbers in $F(R)$, where $m_1 = a_2$, $\alpha_1 = a_2 - a_1$, $\beta_1 = a_3 - a_2$ and $m_2 = b_2$, $\alpha_2 = b_2 - b_1$, $\beta_2 = b_3 - b_2$. Then the ranking function of A and B is given by

$$R(A) = \frac{a_1 + 2a_2 + a_3}{4}$$

$$R(B) = \frac{b_1 + 2b_2 + b_3}{4}$$

To compare triangular fuzzy numbers A and B, we have the following cases:

Case1. $A > B$ if and only if $R(A) > R(B)$

Case2. $A < B$ if and only if $R(A) < R(B)$

Case3. $A \approx B$ if and only if $R(A) = R(B)$

Case4. $A - B \approx 0$ if and only if $R(A) - R(B) = 0$

A triangular fuzzy number $A = (a_1, a_2, a_3)$ in $F(R)$ is said to be non-negative if and only if its ranking function $R(A) \geq 0$ and is denoted by $A \geq 0$. Further, A triangular fuzzy number $A = (a_1, a_2, a_3)$ in $F(R)$ is said to be positive if and only if its ranking function $R(A) > 0$ and is denoted by $A > 0$. Similarly, $A \approx 0$ if and only if its ranking function $R(A) = 0$.

Two triangular fuzzy numbers $A = (a_1, a_2, a_3)$ and $B = (b_1, b_2, b_3)$ in $F(R)$ are said to be **equivalent** if and only if $R(A) = R(B)$.

Two triangular fuzzy numbers $A = (a_1, a_2, a_3)$ and $B = (b_1, b_2, b_3)$ in $F(R)$ are said to be **equal** if and only if their corresponding components are equal.

i.e., $A = B$ iff $a_1 = b_1$, $a_2 = b_2$ and $a_3 = b_3$

Example: Find the rank of triangular fuzzy numbers $A = (1, 3, 5)$ and $B = (3, 4, 10)$. Hence, Compare A and B.

Illustration: We Know if a triangular fuzzy number is $A = (a_1, a_2, a_3)$, then the ranking function of A is given by

$$R(A) = \frac{a_1 + 2a_2 + a_3}{4}$$

Here, $A = (1, 3, 5)$ and $B = (3, 4, 10)$

Therefore,

$$R(A) = \frac{1 + 2(3) + 5}{4} = 3$$

$$R(B) = \frac{3 + 2(4) + 10}{4} = 5.25$$

Since $R(A) < R(B)$

Hence, triangular fuzzy number $A < B$

Arithmetic Operations on Triangular Fuzzy Numbers:

Let $A = (a_1, a_2, a_3) = (m_1, \alpha_1, \beta_1)$ and $B = (b_1, b_2, b_3) = (m_2, \alpha_2, \beta_2)$ be any two fuzzy triangular numbers in $F(R)$, where $m_1 = a_2$, $\alpha_1 = a_2 - a_1$, $\beta_1 = a_3 - a_2$ and $m_2 = b_2$, $\alpha_2 = b_2 - b_1$, $\beta_2 = b_3 - b_2$ then the arithmetic operations on triangular fuzzy numbers are given by

1. Addition of triangular fuzzy numbers:

$$A \oplus B = (a_1, a_2, a_3) \oplus (b_1, b_2, b_3) = (a_1 + b_1, a_2 + b_2, a_3 + b_3)$$

$$A \oplus B = (m_1, \alpha_1, \beta_1) \oplus (m_2, \alpha_2, \beta_2) = (m_1 + m_2, \alpha_1 - \beta_2, \beta_1 - \alpha_2) \text{ when } \beta_1 - m_1 > \beta_2 - m_2$$

$$A \oplus B = (m_1, \alpha_1, \beta_1) \oplus (m_2, \alpha_2, \beta_2) = (m_1 + m_2, \alpha_2 - \beta_1, \beta_1 - \alpha_1) \text{ when } \beta_1 - m_1 < \beta_2 - m_2$$

2. Subtraction of triangular fuzzy numbers:

$$A \ominus B = (m_1, \alpha_1, \beta_1) \ominus (m_2, \alpha_2, \beta_2) = (m_1 - m_2, \alpha_1 + \beta_2, \beta_1 + \alpha_2)$$

General Description of Fuzzy Transportation Problem:

The fuzzy transportation problem (FTP) is similar to a traditional transportation problem. It deals with the situation in which a good / product is transported from sources to destinations. The objective is to minimize the cost of transportation while meeting the requirement at the destination.

Consider a fuzzy transportation problem with m sources S_i , ($i=1, 2, 3, \dots, m$), n destinations D_j , ($j=1, 2, 3, \dots, n$) and triangular fuzzy numbers. Let a_i be the quantity of material available at source S_i , ($i=1, 2, 3, \dots, m$) and b_j be the quantity of material required at destinations D_j , ($j=1, 2, 3, \dots, n$). Let c_{ij} be the unit fuzzy transportation cost from source S_i to destinations D_j and x_{ij} denote the number of units of material to be transported from source S_i to destinations D_j . The fuzzy transportation problem can be represented by a table consisting of m rows and n columns, called cost matrix and is given by:

Destinations→ Sources↓	D_1	D_2	.....	D_n	Availability
S_1	c_{11}	c_{12}	.....	c_{1n}	a_1
S_2	c_{21}	c_{22}	.....	c_{2n}	a_2
.....		
S_m	c_{m1}	c_{m2}	.....	c_{mn}	a_m
Demand	b_1	b_2	.....	b_n	

Mathematically, the fuzzy transportation problem can be expressed as

$$\text{Min } Z \approx \sum_{i=1}^m \sum_{j=1}^n c_{ij} x_{ij}$$

$$\text{Subject to } \sum_{j=1}^n x_{ij} \approx a_i, i=1, 2, 3, \dots, m \quad (\text{Supply Constraints})$$

$$\sum_{i=1}^m x_{ij} \approx b_j, j=1, 2, 3, \dots, n \quad (\text{Demand Constraints})$$

$$\sum_{i=1}^m a_i \approx \sum_{j=1}^n b_j; i=1, 2, 3, \dots, m; j=1, 2, 3, \dots, n$$

$$x_{ij} \geq 0 \text{ for all } i \text{ and } j$$

These are $m+n$ constraints and mn decision variables in the fuzzy transportation problem.

Methodology:

The solution of the fuzzy transportation problem is obtained in two steps:

- Initial fuzzy basic feasible solution (IFBFS)
- Optimality test of a solution

Algorithm of fuzzy Russell's approximation method (FRAM):

This method is used to obtain the initial fuzzy basic feasible solution (IFBFS) of the given fuzzy transportation problem.

Let u_i be the largest fuzzy unit transportation cost for each row and v_j be the largest fuzzy unit transportation cost for each column. In this method, allocation is made on the basis of maximum value of $\Delta_{ij} = u_i \oplus v_j \ominus c_{ij}$

The basic algorithm of this method when all demands and supply are crisp numbers and cost coefficients are triangular fuzzy numbers is given as follows:

Step1. Firstly check $\sum a_i = \sum b_j$. If not then balance it and add dummy row or column with zero ranked fuzzy numbers. Calculate largest fuzzy unit transportation cost for each row under consideration (i.e. select the fuzzy unit transportation cost with largest rank in each source row i) and denote it with u_i .

Step2. Calculate the largest fuzzy unit transportation cost for each column under consideration (i.e. select the fuzzy unit transportation cost with the largest rank in each destination column j) and denote it with v_j .

Step3. For each c_{ij} not previously selected, compute $\Delta_{ij} = u_i \oplus v_j \ominus c_{ij}$ or $R(\Delta_{ij}) = R(u_i) \oplus R(v_j) \ominus R(c_{ij})$ for each row and column under consideration.

Step4. Make allocations $\min\{a_i, b_j\}$ in the cell having the largest value of Δ_{ij} i.e. select that Δ_{ij} which has the largest rank.

Rule for tie: In case of tie for the maximum value of $R(\Delta_{ij})$, choose the cell with a maximum cost of fuzzy transportation problem.

Step5. Cross off that row or column in which availability and supply have been exhausted and adjust the supply and demand requirement according to the allocation already made.

Step6. If all availability and supply requirements have not been satisfied, repeat the same process from step1 to step5 and recalculate $R(\Delta_{ij})$ until the satisfaction of all supply and requirement has been met. Thus the initial fuzzy basic feasible solution is obtained.

Algorithm of fuzzy modified distribution method (FMDM):

When the initial fuzzy basic feasible solution (IFBFS) has been found, our next aim is to check whether this IFBFS is optimal or not. Optimality test is applied to any IFBFS of fuzzy transportation problem provided there must be exactly $(m+n-1)$ basic allocations and these allocations must be in independent position. We have to use fuzzy modified distribution method to check optimality of the initial fuzzy basic feasible solution of fuzzy transportation problem. It consists of following steps:

Step1. For the initial fuzzy basic feasible solution of FTP, assign auxiliary dual variables \tilde{u}_i , $i=1, 2, 3, \dots, m$ and \tilde{v}_j , $j=1, 2, 3, \dots, n$ for each row and column respectively. Write \tilde{u}_i in front of each i^{th} source row and \tilde{v}_j at the bottom of each j^{th} destination column.

Step2. The value of \tilde{u}_i and \tilde{v}_j is computed with the help of relation $c_{ij} = \tilde{u}_i \oplus \tilde{v}_j$ for a basic variable x_{ij} . Since there are $m+n-1$ basic variables, so the number of dual equations are also $m+n-1$. But the numbers of unknowns to be determined are $m+n$, so we must assign arbitrary value to one of the these unknowns \tilde{u}_i or \tilde{v}_j and solve uniquely for the remaining $m+n-1$ variables. For convenience, assign one of the \tilde{u}_i or \tilde{v}_j to be zero ranked fuzzy number.

Step3. Determine the rank of $\delta_{ij} = \tilde{u}_i \oplus \tilde{v}_j \ominus c_{ij}$ for each non basic variable x_{ij} by using the relation $R(\delta_{ij}) = R(\tilde{u}_i) \oplus R(\tilde{v}_j) \ominus R(c_{ij})$. The given IFBFS is fuzzy optimal iff rank of $\delta_{ij} \leq 0$ for each non basic variable x_{ij} .

Step4. If rank of $\delta_{ij} > 0$ for at least one of the non basic variable x_{ij} , then the given IFBFS is not fuzzy optimal solution. To obtain the fuzzy optimal solution, we choose that variable x_{ij} called entering variable for which the rank of δ_{ij} is most positive

Step5. The next step is to determine the leaving basic variable. For this, we have to find a closed loop (involving horizontal and vertical segments only) which starts and ends at the entering variable cell connecting only the basic cells. Assign $+\theta$ and $-\theta$ alternatively to the cells of loop, starting with $+\theta$ from the entering variable. On the closed loop, pick out the corners marked with $-\theta$ and select the minimum of the allocations among the corners marked with $-\theta$ indicates that number of units can be shifted to some other unoccupied cells. Subtract this entry to all corners of loop marked with $-\theta$ and add to those corners of loop marked with $+\theta$. This consequently determines the leaving variable. Repeat the steps1-5 until rank of $\delta_{ij} \leq 0$ for i and j .

Numerical Example:

A Company has 3 Refineries S_1, S_2, S_3 and 4warehouses D_1, D_2, D_3, D_4 . The production quantities per month at S_1, S_2 and S_3 are 200000, 100000 and 400000 respectively. The demands per month D_1, D_2, D_3 and D_4 are 200000, 100000, 150000 and 250000 respectively. The transportation cost (triangular fuzzy numbers) $c_{ij}, i=1, 2, 3; j=1, 2, 3, 4$ are given in the table:

Warehouses→ Refineries↓	D_1	D_2	D_3	D_4	Supply
S_1	(30, 50, 60)	(30, 40, 50)	(60, 80, 100)	(60, 90, 200)	200000
S_2	(50, 70, 100)	(40, 60, 80)	(50, 60, 70)	(60, 100, 130)	100000
S_3	(20, 25, 30)	(50, 60, 70)	(70, 90, 100)	(80, 100, 120)	400000
Demand	200000	100000	150000	250000	700000

Find the fuzzy transportation cost and fuzzy optimal solution.

Illustration: Here, $\sum a_i = \sum b_j$ i.e., balanced fuzzy transportation problem.

Step1: Find rank of each triangular fuzzy numbers and write all triangular numbers (a_1, a_2, a_3) in the form (m, α, β) where $m=a_2, \alpha= a_2-a_1$ and $\beta=a_3-a_2$.

Warehouses→ Refineries↓	D_1	D_2	D_3	D_4	Supply (a_i)
S_1	(50, 20, 10) Rank= 47.5	(40, 10, 10) Rank= 40	(80, 20, 20) Rank= 80	(90, 30, 110) Rank= 110	200000
S_2	(70, 20, 30) Rank= 72.5	(60, 20, 20) Rank= 60	(60, 10, 10) Rank= 60	(100, 40, 30) Rank= 97.5	100000
S_3	(25, 5, 5) Rank= 25	(60, 10, 10) Rank= 60	(90, 20, 20) Rank= 90	(100, 20, 20) Rank= 100	400000
Demand (b_j)	200000	100000	150000	250000	

Step2: Find maximum rank in each row and column and write in front of corresponding rows and columns and select the cost corresponding to maximum rank in each row and column respectively.

Warehouses→ Refineries↓	D_1	D_2	D_3	D_4	Supply	Max. rank $R(u_i)$
S_1	(50, 20, 10) Rank= 47.5	(40, 10, 10) Rank= 40	(80, 20, 20) Rank= 80	(90, 30, 110) Rank= 110	200000	$R(u_1)=110$

S_2	(70, 20, 30) Rank= 72.5	(60, 20, 20) Rank= 60	(60, 10, 10) Rank= 60	(100, 40, 30) Rank= 97.5	100000	$R(u_2)= 97.5$
S_3	(25, 5, 5) Rank= 25	(60, 10, 10) Rank= 60	(90, 20, 20) Rank= 90	(100, 20, 20) Rank= 100	400000	$R(u_3)= 100$
Demand	200000	100000	150000	250000		
Max. rank (v_j)	$R(v_1) = 72.5$	$R(v_2) = 60$	$R(v_3) = 90$	$R(v_4) = 110$		

Step3: Find $R(\Delta_{ij}) = R(u_i) \oplus R(v_j) \ominus R(c_{ij})$ for the remaining cells excluding the selected cells.

$$R(\Delta_{11}) = R(u_1) \oplus R(v_1) \ominus R(c_{11}) = 110 + 72.5 - 47.5 = 135$$

$$R(\Delta_{12}) = R(u_1) \oplus R(v_2) \ominus R(c_{12}) = 110 + 60 - 40 = 130$$

$$R(\Delta_{13}) = R(u_1) \oplus R(v_3) \ominus R(c_{13}) = 110 + 90 - 80 = 120$$

$$\text{Similarly, } R(\Delta_{23}) = 127.5, R(\Delta_{31}) = 147.5 \text{ and } R(\Delta_{32}) = 100$$

Since $R(\Delta_{31}) = 147.5$ is the maximum rank, so we take first allocation in the cell (3, 1) and $x_{31} = \min(a_3, b_1) = \min\{400000, 200000\} = 200000$. This allocation uses 200000 units (200000 units left behind) from supply in 3rd row and fully met the demand in 1st Column. So, Cross off the 1st column from further consideration.

Step4. Recalculate the maximum ranks in each row and column as done in step1 without 1st column as the demand is fully met in this column.

Warehouses→ Refineries↓	D_2	D_3	D_4	Supply	Max. rank $R(u_i)$
S_1	(40, 10, 10) Rank= 40	(80, 20, 20) Rank= 80	(90, 30, 110) Rank= 110	200000	$R(u_1)=110$
S_2	(60, 20, 20) Rank= 60	(60, 10, 10) Rank= 60	(100, 40, 30) Rank= 97.5	100000	$R(u_2)= 97.5$
S_3	(60, 10, 10) Rank= 60	(90, 20, 20) Rank= 90	(100, 20, 20) Rank= 100	200000	$R(u_3)= 100$
Demand	100000	150000	250000		
Max. rank (v_j)	$R(v_2) = 60$	$R(v_3) = 90$	$R(v_4) = 110$		

Again calculate $R(\Delta_{ij}) = R(u_i) \oplus R(v_j) \ominus R(c_{ij})$ for the remaining cells excluding the selected cells.

$$R(\Delta_{12}) = R(u_1) \oplus R(v_2) \ominus R(c_{12}) = 110 + 60 - 40 = 130$$

$$R(\Delta_{13}) = R(u_1) \oplus R(v_3) \ominus R(c_{13}) = 110 + 90 - 80 = 120$$

$$\text{Similarly, } R(\Delta_{23}) = 127.5 \text{ and } R(\Delta_{32}) = 100$$

Here, $R(\Delta_{12}) = 130$ is the maximum rank, so we take first allocation in the cell (1, 2) and $x_{12} = \min(a_1, b_2) = \min\{200000, 100000\} = 100000$. This allocation uses 100000 units (100000 units left behind) from supply in 1st row and fully met the demand in 2nd Column. So, Cross off the 2nd column from further consideration.

The subsequent iterations proceed similarly, we get

$$x_{23}=100000, x_{13}=50000, x_{14}=50000 \text{ and } x_{34}= 200000$$

Hence, the initial IFBFS is given by

$$x_{12} = 100000, x_{13} = 50000, x_{14} = 50000, x_{23} = 100000, x_{31} = 200000 \text{ and } x_{34} = 200000$$

Our next aim is to check whether this IFBFS is fuzzy optimal or not. To test for optimality we use fuzzy modified distribution method (FMDM) illustrated as below:

Calculate the dual variables (u_i), ($i=1, 2, 3$) and (v_j), ($j=1, 2, 3, 4$) by arbitrarily assign (u_2) = (0, 0, 0) by using the relation $c_{ij} = (u_i) \oplus (v_j)$ for a basic variable x_{ij} . The values of dual variables are shown in following table :

Warehouses→ Refineries↓	D ₁	D ₂	D ₃	D ₄	\tilde{u}_i
S ₁	(50, 20, 10) Rank= 47.5	(40, 10, 10) Rank= 40 100000	(80, 20, 20) Rank= 80 50000	(90, 30, 110) Rank= 110 50000	(20, 30, 30)
S ₂	(70, 20,30) Rank= 72.5	(60, 20, 20) Rank= 60	(60, 10, 10) Rank= 60 100000	(100, 40, 30) Rank= 97.5	(0, 0, 0)
S ₃	(25, 5,5) Rank= 25 200000	(60, 10, 10) Rank= 60	(90, 20, 20) Rank= 90	(100, 20, 20) Rank= 100 100000	(30, 160,80)
\tilde{v}_j	(-5,85,165)	(20, 40, 40)	(60, 10, 10)	(70,60,140)	

Now find the rank of $\delta_{ij} = u_i + v_j - c_{ij}$ for each of the unoccupied cell by using the relation $R(\delta_{ij}) = R(\tilde{u}_i) \oplus R(\tilde{v}_j) \ominus R(c_{ij})$.

$$R(\delta_{11}) = R(\tilde{u}_1) \oplus R(\tilde{v}_1) \ominus R(c_{12}) = 20 + 15 - 47.5 = -12.5$$

$$R(\delta_{21}) = R(\tilde{u}_2) \oplus R(\tilde{v}_1) \ominus R(c_{21}) = 0 + 15 - 72.5 = -57.5$$

$$\text{Similarly, } R(\delta_{22}) = 0 + 20 - 60 = -40, \quad R(\delta_{24}) = 0 + 90 - 97.5 = -7.5,$$

$$R(\delta_{32}) = 10 + 20 - 60 = -30, \quad R(\delta_{33}) = 10 + 60 - 90 = -20$$

Since, $R(\delta_{ij}) \leq 0$ for all non-basic cells.

So, given IFBFS is optimal and optimal solution is given by

$$x_{12} = 100000, x_{13} = 50000, x_{14} = 50000, x_{23} = 100000, x_{31} = 200000 \text{ and } x_{34} = 200000$$

$$\text{and minimum fuzzy Transportation Cost} = \sum_{i=1}^m \sum_{j=1}^n c_{ij} x_{ij}$$

$$= 100000(30, 40, 50) + 50000(60, 80, 100) + 50000(60, 90, 200) + 100000(50, 60, 70) + 200000(20, 25, 30) + 200000(80, 100, 120) \\ = (34000000, 43000000, 57000000)$$

Thus, the fuzzy cost of transportation lies between 34000000 and 57000000.

Conclusion:

In this paper, fuzzy Russell approximation method has been used to find IFBFS of fuzzy transportation problem with imprecise data and proposed a fuzzy modified distribution method to find the optimal solution from IFBFS without converting them to traditional transportation problem. The arithmetic operations are employed in order to get IFBFS and optimal solution of fuzzy transportation problem with cost as fuzzy triangular numbers.

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Online Education System in India - The Challenges

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Abstract:

The research paper is conducted to study and observe online education system in India and its challenges. The study is based on primary and secondary data collection. Primary data is a real-time experience and observations while secondary data are collected from website and syllabus copy of Mumbai University etc. B.F.A. Bachelor of Fine Arts (Applied Art) is a four year degree course under AICTE & Mumbai University. BFA is a technical course and its all subjects are dependent on practical's and teacher needs to explain them through live demonstration to all fine Arts students in India.

Keywords: Online education, system, India, & challenges.

Introduction:

There are many courses running in India, some are under the Mumbai University and other deemed to be university such as Commerce, Art, Science, Engineering, and Architect similarly there is also FINE ARTS COURSE running under the AICTE and Mumbai University in technical department. This is a four year degree course. There are only three Government colleges throughout the Maharashtra state, first is J. J. School of Art-Mumbai, second is Government Chitrakala Mahavidyalaya-Nagpur and third is Government Schools of Art-Aurangabad. There many courses under FINE ARTS like Applied Art, Drawing & Painting, Sculpture, Ceramics and Dance drama & stage. Fine Art is now considered as a serious career option for young individuals and for that



FIGURE 1 B.F.A. APPLIED ART COURSE

companies offer high salary jobs. There are various career options for such talented individuals in fine Arts such as, Cartoonist, Illustrator, Graphic Designer, Photographer, and Tattoo Artist.

Artist communicates their imagination through their art, and these particular students start their career with FINE ARTS and here we are discussing about Bachelor of Fine Arts (BFA) in Applied Art. Student must pass CET (Common Entrance Test) conducted by Directorate of Art-Maharashtra state with good rank. Passing Intermediate grade examination with securing A, B, or C grade will be an added advantage.

After entering all the 60 students in first year BFA Applied Art course we conduct self introduction program of students, teachers principal, management and non teaching staff. Before the actual teaching starts we teach them Universal Human Values under the Induction program. In this course (BFA Applied Art) we are more concern about colours, paper, Drawing, Calligraphy & Typography. In Graphic design there are three subjects those are more important like drawing, colour, calligraphy and typography. In short to be a commercial artist (Applied Artist) student must have good colour sense, good Drawing, beautiful Calligraphy art &

knowledge of Typography. The knowledge imparted under the practical subjects is aimed to improve the rendering skills and aesthetic sensibilities of a student.

Objective:

Objective of this paper is to study and observe online education system in India and its challenges.

Research Methodology:

A teacher is a human being who provides education in various different disciplines to the students. A teacher is a person who motivates people to learn. There are many different types of teachers who teach young children in Nursery, kinder garden, primary schools and colleges. The primary roll of a teacher is to deliver classroom instructions which help students to learn. To accomplish this, teachers must prepare effective lesson, evaluate and grade students work and offer feedback, manage classroom materials, productively navigate the curriculum and collaborate with other faculty and non teaching staff.

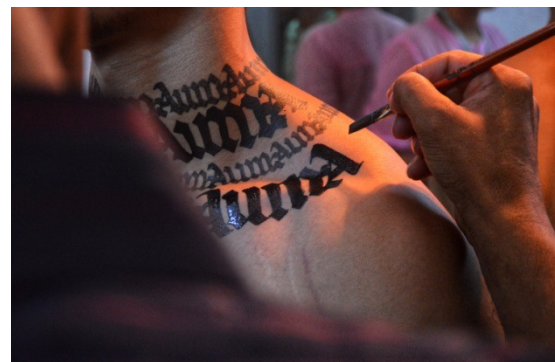
Teachers truly are the backbone of society. They are the roll models of children, young students who offer guidance and dedication and give young people the power of education. Many countries in the world are able to further develop socially and economically.

Point one; this is a practical course and more concern with colours, we faculty didn't face any problem during offline class while checking colour assignments but it is more challenging to provide corrections on colour assignments because there is a lot of difference between actual colour assignment and a photo copy of the same. Again colours can be visible in day light only; one can not precisely judge the actual colour in night or artificial light. **Example 1- Colour**

Point two; drawing subject is so sensitive, hardworking and important that you have to practice daily sketching. In examination students are supposed to draw the full figure drawing of a model seating in front of them in different angle and render it with shade and light, colour, tin, tones and shades for the beautiful piece of art, which is not possible in online education. So, in this situation, teacher supposed to give live demonstration to the students so that students could be able to draw perfect drawing of the model sitting in front of the student and perform in examination.

Example 2 Drawing studio

Point three is calligraphy; Calli means beauty and graphy means to write. Everyone must be aware that, calligraphy is the art of beautiful handwriting. Today calligraphic skill is more valuable in many areas of design because it is beyond the beautiful handwriting. Hence a student should be able to



appreciate and understand a calligraphic letterform as a sign for its spontaneity, grace and vitality. The study of traditional, contemporary and experimental calligraphy will help to train an eye for calligraphic aesthetics. So, student must learn to write Devanagari script along with any one Classical Roman calligraphy style. Again it was very easy and convenient to teach calligraphy for teachers during offline mode or in physical classroom; but it is very tough to teach calligraphy subject through online classroom. Because, in physical classroom teacher can provide demonstration in 20-20 students group so that they can understand well again in live classroom teacher can guide individual student with showing many strokes, many alphabets as per students demand. In online mode teacher has to struggle a lot they have to arrange colour ink pots, calligraphy tools, papers, camera and tripod stand which take a lot of space. After the arrangement, calligrapher needs to place camera in such a way so that every student could see the demonstration properly.

Example 3- Calligraphy demo:

Point four is typography; typography is the arrangement of letters, type face to create a communication design. Typo means letters and graphy means to write so in short to write a beautiful headline or caption for any print media using suitable font is typography. **Example**

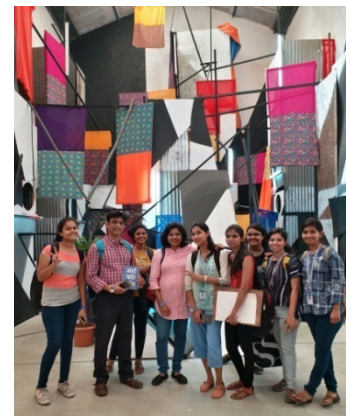
Case study:

During physical education after introducing any assignment, students suppose to show minimum two rough scribbles (rough idea of final design) and get it approved by the respective teacher. In this case student expected to show us which colour scheme is going to apply, which calligraphy style is using, which font is suitable for this design? So there are some protocols which students need to follow. Once students are ready with rough scribbles, we call them one by one and give corrections on their art work. To check and give corrections to all 60 students it takes the whole day means 5 working hours.



The most important downside of online teaching in fine arts is, the teacher can not take students for outdoor sketching, Landscaping, photography and field visit.

In online education it is tough to give corrections on 60 students work because it takes 12 to 14 hours which is more challenging and time taking. Although students need to click a good quality photo of the scribbles and upload it in Google classroom and on whatsapp group. Then teacher used to download every student's rough images, sometime images couldn't download soon then wait and watch. In rainy season sometimes we have to face network issues, sometime internet data gets over, so we can't give corrections and check them properly, sometime, electricity cuts during lecture, demonstration and discussion which are big challenges for teacher.



While giving remark on their rough scribbles like, use this colour, use that calligraphy style, apply this font, shift this image up and shift that font down. So while doing so it is very painstaking job for the teacher and some time teacher and student gets frustrate of all those things because seating continuously at one place bending down your head, they are facing some health problems like, back pain, neck pain and eye sites.



Next day they have to work on comprehensive work (it is a semi-final work, to get the idea of how the final assignment will appear). After selecting comprehensive work students start working on final assignments and submit it on due date and time.

Students get three days for corrections to finalised one subject assignment. During online education some students send messages personally that he or she couldn't join the classroom because of network issues, health issues, went for driving license, i got vaccinated, i am in queue to get token for vaccine, my grandfather expired, my relative expired some time they also say, i am travelling. In this case teacher request students for joining the classroom even if you are travelling

There are some serious issues in remote areas like villages but student join regularly, even though they cant speak properly while discussion but they do present in the class. Once the rough scribble is approved they can start working with final assignment. We could keep watch on every student and ask them for scribbles, we could guide their queries one and one level. In online class this is difficult.

Conclusions:

From this study of online education system in India, it is proven that to teach practical subjects through online education system is more challengig than physical e|ducation. There are many practical subjects like Colour, Drawing, Calligraphy, Typography & Graphic design which are tough to teach online because there demand is different there need is different which can not be full fill through online education. Such type of subjects must be taught through physical education system which is direct communication with the student and teacher. The most important downside of online teaching in fine arts is, the teacher can not take students for outdoor sketching, Landscaping, photography and field visit.

Role of the Dominicans in the Evangelization of the Goa Islands

Dr. Xavier M. Martins

Abstract:

After the discovery of the sea-route to India many religious orders came to east to preach and spread Roman Catholicism. The state imperialism and the Church spiritualism went hand in hand. Cusj us region ejus et religio (The religion of a people was to be the same as that of their ruler) The Pope who lacked the resources to protect the missionaries engaged in evangelization, in the far-off lands supported the Portuguese King. Many religious Congregations came to Goa after 1510. One of them was the Dominicans, who were active in the Islands of Goa or Tiswadi taluka. They built churches, convents and colleges for the formation of the young novitiates.

Key Words: Convent, Santa Barbara, Friars, Missionaries

Introduction:

The Dominicans, a Catholic Religious Order was founded in Spain by Domingo de Guzman (1170-1221), whose members proposed to *honeste vivere, discere et docere* meaning to live, to learn and to teach honestly. (Olivinho, 157)

The first missionaries, who came to India after the discovery of the sea-route were the Dominicans, sailed as Chaplains in the fleet of Afonso de Albuquerque, the Portuguese Viceroy. They were Fr. Domingo de Souza, Vicar –General; Fr. João do Rosario, acted as a Portuguese ambassador to the Sheik of Persia and Rodrigo de Souza, who worked among the Syrian Christians in Kollam (Quilon). This paper aims to examine the Dominicans religious institutions and their role in the evangelization of the Islands of Goa.

Two means were adopted for the christianisation of the Goa islands namely inter-racial marriages and *rigor de misericordia* (rigour of mercy) (Mascarenhas.14). There were many Dominican Friars in India much before 1548, a year when the Order was officially established in Goa. They included Frei João de Haro, Frei Luis de Vitoria and Frei Pedro Coelho, whom reports mentions as Vicar General of St. Dominic. The first two were excellent preachers. In 1503, Frei Domingos de Sousa and his two companions, namely Rodrigo Homen and João do Rosario landed in Goa. (Olivinho 159) In 1539 there were already large or small groups of new converts throughout the islands of Goa and many villages already had Churches and Chapels. (Mascarenhas 23) In 1548, the Dominican Order was officially founded in Goa. In the same year Fr. Diogo Bermudes, Superior of the convent of St. Dominic in Lisbon, obtained a permission from D. João II, the King of Portugal, to construct a monastery and the Church in Goa. Along with Fr. Bermudes there were other priests like Fr. Francis de Macedo, Fr. Inacio da Purificação, Fr. Luis de Abreu, Diogo de Ornelas, Fr. Gaspar da Cruz, Fr. Sebastião da Cruz and Fr. Vicent de Santa Maria who arrived in Goa. (Olivinho 158) In 1554 or 1555, Viceroy D. Pedro de Mascarenhas divided the Islands of Goa, Divar and Chorão among the Dominicans and the Jesuits.

The Governor of Goa, Dom Garcia de Sá gave them a plot of land at the foot of the hill of Nossa Senhora de Monte near a small spring to build their convent. It is said that, to provide a space for the convent, many hurts had to be demolished, besides a large house of a Portuguese noble Pedro Godhino. (Fonseca, 251) The work of building a new convent and the church which was started 30th of April 1550 was completed in 1564. It was built at the cost of 40,000

cruzados.(Botelho 70)This convent was the chief seat of the Dominicans and the centre of all their missionary activities in the Portuguese eastern empire.The Church and the Convent were the most splendid and magnificent buildings.It never failed to attract the attention of the travellers, who visited Goa. Dr. Fyrer, who visited Goa somewhere in 1675 writes about the church and the convent “We were brought to the college (convent) of the Dominicans, the seat of the Inquisitor, who is always one of this order; a magnificent front to the street ascending by many steps, being a huge fabric: the church surpassed the Cathedral, the pillars from top to bottom being overlaid with a golden wash, and on the walls the martyrology of their order. In the sacristan were massive candlesticks and other vessels very rich; the dormitories elegantly contrived in upper and lower walks, and the whole without compare to other that fell in our keen(Dr. Fyrer149).

The Dominicans built the Convent and the Church of SantaBarbara in the village of Morombi- O- Grande. It was founded by Frei Alex de Setuval, who lived there for three years and baptized more than seven thousand souls. It was considered to be one of the noblest churches built by the Dominican in Goa. There were many properties located in Taleigão, Calapur, Chimbél and Morombi O- Grande which were bequeathed by the faithful to the church and the convent of Santa Barabara.So also, there were properties in Agacaim, Goa Velha, Batim,Siridão and Santana gifted to the Convent of St. Dominic, yielding considerable income to the Dominican Order. There are records at the Goa Historical Archiveswhich show that theDominicans were supporting their missionary works in Solor and East Timor from the income derived from these properties.

At the order of the King, in 1585 the Dominicans built a new college called the College of St. Thomas Aquinas, in the vicinity of the Panjim Church. In 1636 the number of the students at College of St.Thomas de Aquinas was 250.(Fonseca p.250)However, this institution was shifted to Panelim or Bainguinim, the suburbs of Old Goa. Subjects like Latin literature,philosophy, moral theology and logic were taught. In 1685, the Dominican College of St. Thomas was promoted to a University for perpetuity. In 1757, the Archbishop Neiva Brum in his ad limina, visit states that the Dominicans had two religious houses, the convent of St.Dominic and the College of St. Thomas. (Ibid. 251)

The Dominicans erected four churches in four villages namely,Morombim-O-Grande(Merces), Taleigão, Calapur(Santa Cruz)and Siridão. (Olivinho 170) All these four churches were existing before 1565, as the State was paying cõgrua párocos. The first and the oldest church built by the Dominicans in the Islands of Goa was the Holy Cross Church in Santa Cruz, whose construction was started before 1546.

Dominican Confraternities :

Confrarias or Confraternities were the institutions dedicated to pious work.Its main functions were to help the poor, visit the sick, consoled the weak and give alms to the needy.(Xavier 141)The Dominicans instituted the confraternities ofOur Lady of Rosary and that of the Sacred Heart of Jesus in all the churches which were under their care.(Silva Rego,Vol.II 519)The objective of the Confraternity was to labour for the increase, defence, and support of the Christian faith by giving all encouragement and assistance to the converts.(Mascarenhas, 54) Its bylaws were framed in 1717 by Fr. Manuel da Natividade, Vicar-General of the Dominicans. In 1623 a Confraternity of Our Lady of Remedies was established in the Church of the College of St. Thomas when it was shifted to Panelim from Panjim. The main objective of these confrarias

was to foster strong fellow-feeling among the Christians and to bind them as a strong community.

Apart from heading the parishes in the Islands of Goa, the Dominican friars held high ecclesiastical offices as the Chiefs and Deputies of the Holy Office, Priors of the Convents and so on. Fr. Aleixo Diaz Falcão, a Dominican was made the Chief Inquisitor of the Holy Tribunal. Among other Dominicans Friars Fr. Constantino do Rosario, deserves special mention. Fr. Constantino do Rosario was the son of the Emperor Monomotapa of Africa, who was converted to the Christianity along with his sons by the Dominicans. Fr. Constantino do Rosario who joined the Dominican Order, was the Vicar of the Church of Our Lady of Rosary (1700-1726). His other brother Prince Miguel also joined the Dominican Order and was the Vicar of the Church of Santa Barbara, whose tomb epitaph lies at the Chapel of Santa Barbara. During the period from 1568-1714 there were five Archbishops of Goa. D. Fr. Jorge Temundo, 1568-1571; Fr. Henrique de Tavora e Brito, 1578-1588; D. Fr. Joao Vicente da Fonseca 1582-1587; D. Fr. Manuel Teles de Brito, 1633 and D. Fr. Pedro Pacheco 1713-1714.

Conclusion :

The Dominicans played an important role in the evangelization of the Islands of Goa. The Dominican missionaries from Goa went to different parts of the Portuguese eastern empire to preach Christianity. Dominicans built convents at Ormuz, Chaul and Cochin. Churches were built in Colombo, Manar, Jafanapatam, Negapatam, Malacca, Daman, Diu, Bengal, Solor, Timor, Macau, and so on. All activities and affairs of these were managed from Goa. In the field of education the Dominican institutions imparted general instructions to the natives. Students were taught to read, write and count. The four parishes grew into fifteen, but by 1776 they were all given up to the Archbishop to be governed by the secular clergy. In 1835, all religious communities both in Portugal and in its overseas colonies were suppressed. Their properties were taken over by the State and either sold or leased to private entities.

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Challenges Facing Public Libraries in Solapur District

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Introduction:

Libraries are the store house of knowledge. As we know that public libraries are at a critical juncture in digital era. In this research paper, researcher tried to find the problems facing by the public libraries. Public libraries means libraries which are accessible by the general public and is usually founded from public sources. In all over the world public libraries are available. These libraries are different from the school library, special library or research library. Public libraries are to fulfill the needs of public means readers. It has following services like borrowing books and lending, it also follows the privacy of readers, it has also digital management, some public libraries maintain classroom and meeting space, some of the libraries conduct the different social activities for public good well. Though these qualities included in the services of public libraries, still it faces so many problems particularly in the rural areas. Due to that reason researcher wants to study the problems or challenges facing public libraries in Solapur district.

Now a day's public libraries are facing so many problems like The disappearing middle class. The decline of attention span. The decline in reading. Lack of diversity. Funding problem, lack of knowledge about IT skill and about modern technology etc. Throughout history, public libraries have been beacons of hope, pillars of education, and gathering places for their communities. And they've done this by continuing to adapt to their communities' ever-changing needs. Now, due to COVID-19, libraries have once again been forced to transform their services. They have risen to the task, but it hasn't been easy. Researcher recently surveyed public library workers to learn the biggest challenges that public libraries are facing. The present paper is about the Challenges facing public libraries in Solapur District

Need and Importance of the study:

- 1] The present study is useful to know the present condition of the public libraries in Solapur District. It gives the detail information about the present condition of the public libraries in Solapur district.
- 2] The present study is also important to analyze the problems faced by librarians of the public library in new digital era.
- 3]. Public libraries are for the well being of the readers and for according to fulfill the needs of public. But it faces so many problems or challenges. The present study is required to identify the major challenges for librarians to work in public libraries.
- 4] The present study is also required to understand the problems and challenges before public libraries and to suggest the remedies for the betterment of the public libraries.
- 5] The present study is also useful to know the present scenario of the public libraries in Solapur district and according to it researcher suggested the recommendations also.

Objectives :

- 1] To know the present condition of the public libraries in Solapur District
- 2] To analyze the problems faced by librarians of the public library in new digital era.
- 3]. To identify the major challenges for librarians to work in public libraries.
- 4] To suggest the remedies for the betterment of the public libraries.

Research Methodology:

A] Research Method:

Researcher has used Survey method of the research for the present research according to the objectives of the research.

B] Sampling:

Researcher selected 20 Librarians of the public library from Solapur District.

C] Research Tools:

Researcher prepared Interview Schedule for the librarians to collect the data.

D] Statistical Tools:

Percentage and mean used to analyze the responses of the librarians.

Research Procedure:

Researcher prepared Interview schedule for the librarians related to the public libraries. Then researcher conducted online interview of the librarians. After the data collection, researcher analyzed and interpreted the data and pointed out some of the research findings means conclusion or results.

Research Findings :

1. In the survey of the public library, it is pointed out that Librarians should not have proper technical skills or IT skills, and communication skills to work in digital environment.
2. Librarians of the public libraries should update their knowledge about the new trends in library area. They should attend more and more seminars, conferences and workshops related to the digital library.
3. Many librarians of the public sector have not full satisfaction with their jobs due to low salary, overload of the work etc.
4. Public libraries should be provided or should be well equipped with the modern tools and modern facilities for the digital library.
5. Librarians should need proper guidance about the digitalization of the library.
6. LIS Schools must establish their policy to concentrate on the quality of their product instead of quantity.
7. In public libraries most of the colleges need to fill the post of librarians and their assistants.
8. Librarians are unknown about various modern technologies. They need proper guidance and training to acquire the technical skills of the digital library.
9. Higher education authority should provide better infrastructure for the public library.
10. Another view is come out from this survey is that low levels of funding for public library service is also major problem.

Conclusion:

Public libraries in India are facing problems. It has some challenges to face and work for public needs. In the present research paper, researcher mentioned importance of the public libraries and some challenges which it has. Researcher also pointed out the views of libraries about the challenges which they are facing. It is important to upgrade the public libraries in India.

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Problems and Prospects of Lac Cultivation in Gondia District, Maharashtra

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Abstract:-

Lac being a natural biodegradable and non toxic material has a bright future as the entire world is looking to and promoting use of such material for creating a better world to live in. with great emphasis on the use of natural resins and dyes in recent years, Sac and lac products are receiving greater attention. The scope of increasing the lac production in country is very high by adopting scientific methods of cultivation and by utilizing available lac host plants on waste lands. It can also be used as an important source of boosting the income the income of rural marginal-farmers, tribal's inhabiting sub hilly tracts. As it give emphasis on large plantation of host trees mainly pales. Ber and kusum, it is the best use of waste and barren land to cheek the erosional level', and promote sustainable agricultural development of the area, if problems and constrains' of lac cultivation tackled rationally.

Key words - lac host plants, eco system, palus, ber, kusum.

Introduction:-

Lac being a natural biodegradable and non toxic material has a bright future as the entire world is looking to and promoting use of such materials for creating a better world to live in lac as an eco. Friendly non toxic biodegradable and natural material thus has great scope for the use in number of areas. Lac insets are parasite and grown on specific monopoly of lac trade. Subsequently with the advent of synthetic resins the demand for lac went down.

With greater emphasis on the use of natural resins and dyes in recent year, lac and lac productions are receiving greater attention. Lac production in our country has also picked up in recent year. It is thus hope that that India my regain its lost ground in lac production and trade. Brighter future can thus be seen for lac as it is natural, non-toxic and forms renewable, resources. The scope of incrusting the lac production in country is very high by adoption scientific methods of cultivation and by utilizing available lac hosts and waste lands. It can also be used an important means for boosting the income of rural. Stable price and effective procurement support, market are yet to be realized. Much needs to be 'done in the direction of modernization and value addition of lac processing and lac cultivation.

What is Lac:-

Lac (Lakhsa in Sanskrit) is a product of commerce derived from a group of specialized plant bugs commonly known as lac insets which thrive on specific trees called lac hosts, lac is a source of three basic materials, viz, resins, dyes and wax. In India lac production comes mainly through culture of Indian lac insect kerria lacca on host kusum an palas. Two lac crops are produced corresponding the two cycle completed by lac insets in one year. The Indian lac insects is represented by two infra sub specific forms namely Kusumi and ranging host plants. Preferences and quality of the lac produced from Kusumi is characterized by high productivity and the best quality of resin produced.

Lac Insect, host and culture:-

Lac insects settle closely on the host plants and derive their food from the sap of the host. Once settled they become permanently fixed through the resinous secretions, which also form a

protective covering them . The distribution of lac insect is restricted mainly to tropical and subtropical regions 40 degree north and south of equator even though eighty seven species of lac insects have been reported world wide, only a few species are useful for commercial lac production moderately mild hot and temperature and humid conditions are favorable for lac culture. A large part of India offers climatic conditions suitable for lac production.

Importance of Lac Cultivation:

Lac Cultivation has some unique merits' some of there are as under.

1. Being the most remunerative Crop it is the additional source of income for a cultivation.
2. A good source of livelihood to resource poor farmer tribal inhabiting sub - hilly tracts.
3. It requires no irrigation, meager fertilizers labour etc.
4. A good crop for marginal and degraded lands no competition for Sand or form operation with agriculture/horticulture crops.
5. Highly remunerative cultivation. A hectare of ber plant with kusmi ac cultivation can provide net return of 3 to 5 lakhs per year.
6. It Is like an insurance crop especially drought years as the crop is very good during such adverse climate.
7. Lac cultivation involves significant women participation and help eco system development.
8. It is eco-friendly cultivation as it encourages plantation in large manner so it checks the soil and land erosion too.
9. As it gives emphasis on large scale plantation of host trees. It is the best use of waste and barren land to check the emotional level and promote sustainable development.

Objectives:-

Keeping in view the prospects and potential of this cultivation the major objectives of the study is :-

1. To study the major producing lac crop areas of the district.
2. To identify the major problems facing lac cultivation in the district which need immediate attention and suggest solutions.
3. To identify the area to enhance the area under crop particularly on the wasteland where it could be suggested as alternative land use, which will be double beneficial as due to plantation under forest will be increased and being the economically beneficial crop the rural upliftment will be possible.

Hypothesis:-

Due to favorable Physical, Ecological condition there is a tremendous scope for the promotion and growth of lac cultivation in Gondia district if the constrains in this cultivation is properly tackled by doing scientific method of cultivation, creating awareness in cultivators and proper use waste land.

Methodology:-

1. Efforts have been made for data the major problems and present position collection at cultivator level regarding. Scheduled questionnaire developed for conducting interviews of cultivators producing lac survey is made in various lac growing areas of the district for collection of primary data.
2. After finding the location of waste land and permanent fellow determined the possibility of enhancing the areas of host trees to decide the potentiality of development of crop.

Study Region

Gondia district is located at eastern boundary of Maharashtra state and Vidarbha region. Gondia district is known as the eastern gateway to the state of Maharashtra. Gondia district was separated from Bhandara district in 1 May 1999. This district includes total 8 tahsils Tiroda, Gondia, Amgaon, Salekasa, Deori, Sadak Arjuni, Arjuni Morgaon and Goregaon. District covered total 5425 sqkm area with total 1322507 populations and agricultural density is 142 in per sqkm according to the census year 2011.

Gondia district lies in between 20°45' N to 21°30' N latitude and 80°00' E to 80°30'E longitudes.

Discussion and findings:-

Physical and climatic conditions of Gondia district are very much suitable for the growth of the crop. There fore there is a vast scope for the growth and development of lac cultivation. The land can be categorized as a private, Revenue and forest land. The host palas and ber trees are available in all three of above mentioned categories. But the production is not other type types of land in a commercial way for instance, there number of trees of pales, Ber in forest area but till today no scheme for 'production of cultivation of lac on pales and Ber trees in forest is not extended by the forest department. Whatever production is supposed to be from forest department is incidental. On revenue land of villages in district there is enough quantum of pales and ber trees but this area is also uncovered for production. What ever production is seen it is from the private land of farmers. In Gondia district paddy is the main crop for which bound are prepared. On this bound large number of host plants exists. These trees are not planted by farmer with special efforts but they had grown naturally. Some areas like Salekasa Amgon, Goregaon, in some typical villages few farmers cultivate lac in crude way. They just prone the host plants in January and the seed branches which consequently spreads on all the new branches. In this way farmer get 3 to 4 kg of lac on full grown tree. If instead of this they use the seed in poly bag the production can be increased. No farmer takes this crop as a main crop. This is due to lack of motivation of people.

Some constrains in lac production m the district are

1. Shortage of funds for purchase, input and high cost brood lac.
2. Lac of scientific knowledge on lac cultivation.
3. Theft of lac.
4. Shortage of brood lac.
5. Insect mortality due to environmental factors leading to uncertainty in production.
6. Lack of season specific host owning only one species of host.
7. Distance of host plants from home from home and scattered host plants.
8. Non-availability of improved inputs in local

Some Marketing Constrains in the district as follows-

1. Lack of uniform policy regarding inter and intra state Government of produce.
2. Non-availability of improved inputs in local market.
3. Lack of grading facilities in market.
4. Long distance of market.
5. Lack of information on current price of lac.
6. No systematic channel for brood lac marketing.

Suggestion:

In this condition to enhance the cultivation in Gondia district, the efforts should be taken.

- I. At forest department level in forest areas.
 - II. To motivate the farmers to cultivate it as a main crop.
 - III. Create awareness in masses.
- A. Presently forest department has started the cultivation of lac on forest land through joint forest management committees. One example of village Danbada, tahsil salekasa can be illustrated as an example. Last five years back, the forest land of this village was handed over to the JFMC of this village. The villagers started cultivation of lac on forest land collectively and at present they are selling lac of around Rs. 2 lac per annum. In this way if all the villagers motivated, lac can be produced in a quantum beyond imagination.
- B. Private farmers never think of lac cultivation except in few villages. If all the farmers, motivated for this, this will be a major source of income for them and Government will also be relieve from the suicidal offence of farmers, because it is a crop which requires less attention and big economic return as its cost per kg production is only 8 to 10 Rs. and price in market averages Rs. 50 to 60.
- C. In some villages ample bushy stunted growth of host insect trees mainly pales trees on water lagged areas of revenue and forest land exist. These areas are taken casually by the villages and are just by the villagers for grazing of their cattle and playing of children this just damages the growth of host pales trees. If collectively the community just prevent these activities for just year or two, there areas will definitely has full grown palas trees which can then be used for lac cultivation, thus producing trees of rupees. Revenue which can be shared by all families of concerned. But lack of interest and failure of leadership to aware the people in this direction are the only reasons for non production of lac in this area. An attempt in this direction with establishment of concern industries in the local areas will definitely attract the attention of masses and will encourage them to think in this direction.

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Retirement Planning : An Analysis of New Pension Scheme of Government of India

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Abstract:

Retirement planning basically includes securing future post retired life by doing savings today with the help of which an individual can continue to meet all the dreams and objectives of post retirement with his or her own effort without depending on others. Retirement planning should include determination of retirement goals, predicting the volume of money that you need in the future and its proper investment so that it will grow up to your retirement. Retirement plans are mostly unique. You should choose such plan which will specifically suits to your post retirement needs. In this research paper an attempt is made to evaluate the National Pension Scheme of Government of India. The National Pension System (NPS) was launched on 1st January, 2004 with the objective of providing retirement income to all the citizens. Initially, NPS was introduced for the new government recruits (except armed forces). With effect from 1st May, 2009, NPS has been provided for all citizens of the country including the unorganised sector workers on voluntary basis. This research paper will analyse the need of NPS in retirement planning, its architecture, merits and demerits and taxation benefits.

Keywords -Retirement planning, NPS, PFRDA, GST, POP's, CRA

Introduction:

Retirement financial planning is much more needed if you want to live a comfortable and dignified post retirement life. It doesn't matter how your dreamed retirement looks like, it may be relaxed time with family members and loved ones, or may be of adventure and travel, whatever it is, it will need money. Retirement planning is preparing for a steady, gradual and continue stream of money during post retirement. It includes setting aside money and investing it specifically with certain goal in mind. An individual's retirement policy will depend on his or her final goal, amount of income, and the age. Become old will be expensive. Though incidental expenses might reduce, medical expenses may likely to rise. Add to that the rise in inflation, not having sufficient money to maintain future expenses can increase stress and worry. Therefore, the basic aim of a retirement planning is to ensure financial security at post retirement without relying on others.

Following are the important reasons to have a retirement plan-

(1) Lack of a social retirement benefit (2) Financial independence (3) Rising cost (4) Medical emergencies

Objectives of The Study :

- To study the concept and architecture of NPS. •
- To study the merits and demerits of NPS in retirement planning.
- To study the tax benefits and GST charged on National Pension Scheme.

Review of Literature:

K SEETHAL1 & B MENAKA (2018) in their research paper titled “EVALUATION OF NATIONAL PENSION SCHEME FOR RETIREMENT PLANNING” states that though the NPS is an ordinary pension plan, the earlier developments by the government of India, is increasing its popularity among the investors. The prospective retirement planner can go through National Pension Scheme for securing the post retirement life. Even though individuals don't have knowledge of financial market, can go with NPS simply by contacting approaching the authorised private and public sector banks.

Dr. Alpa A. Thaker, Dr. Mahendra H. Maisuria and Dr. Prashant T Jariwalav(2018) in their research study titled, “An Empirical Study of National Pension Scheme with respect to Tire 1” reveals that, if we compare the NPS with ordinary retirement's pension schemes including EPF and PPF, NPS is more suitable because it provides flexibility in terms of equity exposures. The Government has introduced certain amendments in NPS with the help of which partial withdrawals from NPS is without tax.

Research Methodology :

This research study is based on the discussion of concepts in NPS, it more depend up on the secondary data which is collected from websites, research papers in national and international journals and articles.

The concept and the architecture of New Pension Scheme:

Government of India formed Pension Fund Regulatory and Development Authority on 10th October, 2003 to modify and regulate pension sector in India the result of which is the introduction of National Pension System launched on 1st January, 2004 with the sole aim of providing secured retirement income to the citizens of India. The basic purpose of NPS is aims to make reforms in pension and to encourage the people to save more for retirement planning. In the years of its introduction it was for the new government recruits (except armed forces) however from 1st May, 2009, NPS was opened for all citizens of the India including the unorganised sector workers on voluntary basis. NPS is actually a social security initiative undertaken by the Government of India. The NPS pension scheme will motivates the individuals to invest in a pension plan scheme at regular intervals while in course of their employment. at the end of service, the retiree can withdraw certain percentage of the corpus and as a holder of NPS account he or she will receive the balance amount as a monthly regular pension during post retirement life

Types of NPS Accounts: NPS provides basically two types accounts, Individual NPS account (All Citizens Model) and Corporate NPS account.

All Citizen Model:

In this account model, the subscriber (Account holder) is the only contributor. All decisions about Scheme preference, Annuity Service Provider Investment etc. are taken by the subscriber alone. Any Indian citizen can voluntarily open an Individual NPS account to have tax benefits on investments and to avail regular post retirement income. The entry age is from 18 to 65 years.

Corporate Model:

In this account model, the subscriber as well as the employer both can contribute to the subscriber's NPS account. A corporate entity will have to register for corporate NPS for the employees to be able to avail corporate NPS benefit, a corporate entity will have to register for corporate NPS for the employees.

You have the choice to open two sub accounts under a single Permanent Retirement Account Number (PRAN). These are called as tiers in NPS:

Tier I: This is called as pension account. Contributions up to Rs. 50,000 made in this account are eligible for additional deduction from taxable income under section 80CCD (1B). This is over and above limit of Rs. 1.5 lakhs- under section 80C.

Tier II: You can invest an additional amount in Tier II NPS account. Subscriber is free to withdraw his entire accrued corpus under Tier II at any point of time. No tax benefits are available in this account. Funds from Tier II can be transferred to Tier I. Funds from Tier I cannot be transferred to Tier II.

Regulator has appointed multiple agencies for different NPS services to ensure better transparency and efficiency.

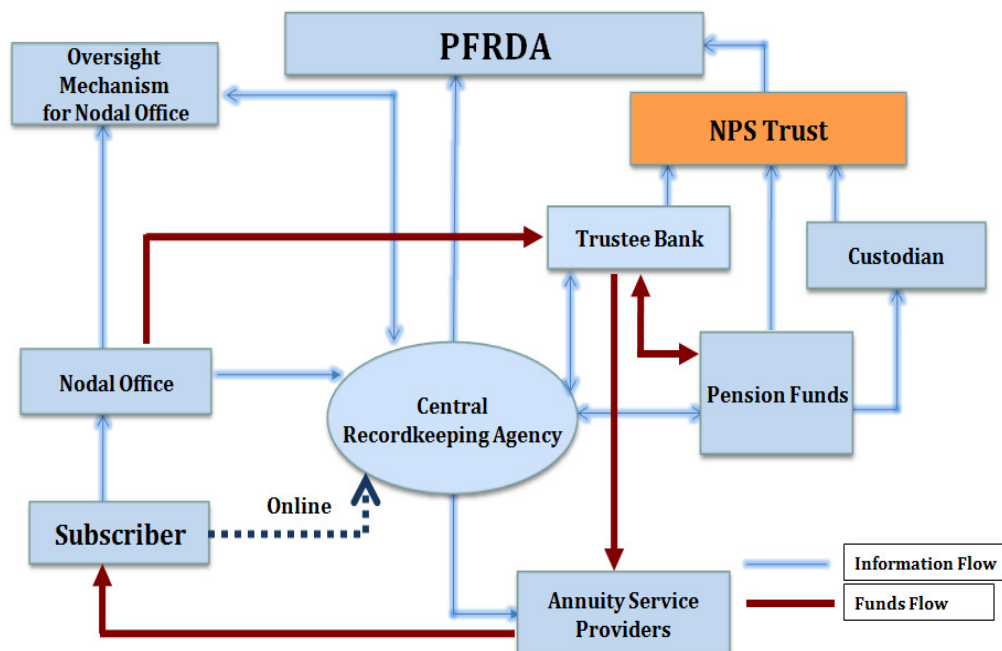
- Pension Fund Regulatory and Development Authority (PFRDA)
- NPS Trust
- Central Recordkeeping Agency (CRA)
- Point of Presence (POP) -

Pension Fund Manager (PFMs)

The contributions of the subscribers are managed by the PFMs who are appointed by PFRDA and are governed by regulatory guidelines. You have complete flexibility to choose any of the following 7 PFMs:

Aditya Birla Sun Life Pension Management Limited HDFC Pension Management Company Limited ICICI Prudential Pension Funds Management Company Limited Kotak Mahindra Pension Fund Limited LIC Pension Fund Ltd SBI Pension Funds Private Limited UTI Retirement Solutions Limited

NPS architecture:



(NPS ARCHITECTURE)

Merits of Nps: Some of the merits of the National Pension System (NPS) are:

Transparent - NPS provides transparency in the investment. The pension contributions are regularly invested in the pension fund schemes and the employee can be able to know the value of the investment on daily basis.

Simple - NPS is simple as the subscriber has to open an account with his/her nodal office and get a Permanent Retirement Account Number (PRAN).

Portable - Each and every employee is identified by a common unique number and has a separate PRAN which is portable i.e., will remain same even if an employee gets transferred to any other office.

Regulated - NPS is regulated by Pension Fund Regulatory and Development Authority, which provides transparent investment norms & regular monitoring and performance review of fund managers by NPS trust.

Economical- NPS is one of the lowest cost investment products available.

Flexibility- You have the flexibility to select or change the POP (Point of Presence), investment pattern and fund manager. This ensures that you can optimize returns as per your comfort with various asset class (Equity, Corporate Bonds, Government Securities and Alternate Assets) and fund manager.

Demerits of Nps: NPS scheme consists of some demerits

Long lock-in period:

As the limit of investment in NPS is up to 60 years, if you started investing in NPS at the age of 35, your money will get locked up for 25 years. Partial withdrawals of up to 25% of your contributions are permitted, only in case of higher education or marriage of children, covering expenses related to the treatment of coronavirus, among others. So, if you don't like your money to get locked in for a long time, and want a greater degree of control on your finances, NPS may not be right for you.

You are forced to buy a taxable annuity:

When investors reach their retirement age of 60, they are forced to put 40% of the corpus in a low-yield and tax-inefficient option. If they exit before the retirement age, 80% of the corpus needs to be used to buy an annuity. This annuity, when received, is taxable in the year of receipt.

Investment Restrictions:

The subscriber can't invest more than 50% of its total investment in the NPS account towards equities.

Tax on Maturity Proceeds:

According to the present laws, the funds would be taxed at withdrawal. As per the latest budget in 2019, Lump sum withdrawal of 60% is made tax.

Tax Benefits in NPS

An employee's own contribution is eligible for a tax deduction --up to 10 per cent of the salary (basic plus DA) – under Section 80CCD(1) of the Income Tax Act within the overall ceiling of Rs 1.5 lakh allowed under Section 80C and Section 80CCE.

The employer's contribution to NPS is exempted under Section 80CCD (2). Moreover, individuals can claim an additional deduction of up to Rs 50,000 under Section

80CCD (1B), which is in addition to Rs 1.5 lakh permitted under Section 80C. A self-employed person can also contribute 10 per cent of his gross income under Section 80CCD (1) in NPS.

GST benefits:

According to Contractor, another tax friendly feature is that GST is waived on annuities purchased with the NPS corpus. Normally, there is 1.8% GST payable on the value of the annuity, but NPS investors are exempt.

Conclusions:

National Pension Scheme which was launched in the year 2004 by the Government of India is becoming more and more popular among the subscriber due to easy access of it through authorised private and public sector banks. Each and every employee is identified by a common unique number and has a separate PRAN which is portable i.e., will remain same even if an employee gets transferred to any other office. Even NPS subscriber is exempted from payment of 1.8% GST payable on the value of the annuity purchased with the NPS corpus. If you are not financially disciplined and not comfortable to manage retirement funds, NPS suits you.

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Indian Agriculture Marketing

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Abstract :

Agriculture in India has directly or indirectly continued to be the source of livelihood to majority of the population. Indian agriculture has seen a lot of changes in its structure. India, predominantly an agricultural economy, has healthy signs of transformation in agriculture and allied activities. India has seen agriculture as a precious tool of economic development as other sectors of production depend on it. Efficient backward and forward integration with agriculture has led to globally competitive production system in terms of cost and quality. Cooperatives seem to be well positioned to coordinate product differentiation at the farm level and to integrate forward into value added processing activities.. Indian agriculture can be balanced and made efficient through proper and better management practices. The present study brings out past and present scenario of agricultural marketing prevailing in India, its challenges and future recommendations. India is an agricultural country and one third population depends on the agricultural sector directly or indirectly. Agriculture remains as the main stay of the Indian economy since times immemorial. Indian agriculture contribution to the national gross domestic product (GDP) is about 25 per cent. With food being the crowning need of mankind, much emphasis has been on commercialising agricultural production. For this reason, adequate production and even distribution of food has of late become a high priority global concern.

Keywords : Agricultural marketing, marketing cooperatives, contract farming, commercialization, foreign direct investment (FDI)

Introduction :

Definition - Agricultural marketing can be defined as the commercial functions involved in transferring agricultural products consisting of farm, horticultural and other allied products from producer to consumer.

Agricultural marketing includes all activities involved in moving agricultural produce from producer to consumers through time (storage), space (transport), form (processing) and transferring ownership at various levels of marketing channels. Agriculture is the backbone of Indian economy. Out of 320 million workforce, 170 million are employed in agriculture. It not only provides food requirements to such a huge population of India but also earns successful returns. Post independence saw a major and rapid growth in Indian agriculture at the rate of 2.6% per annum. India ranks the 1st in the world in terms of milk production. India ranks the 2nd in terms of rice, wheat, groundnut and tobacco production and 3rd in coffee production.

In India, there are several central government organisations, who are involved in agricultural marketing like, Commission of Agricultural Costs and Prices, Food Corporation of India, Cotton Corporation of India, Jute Corporation of India, etc. There are also specialised marketing bodies for rubber, tea, coffee, tobacco, spices and vegetables. Under the Agricultural Produce (grading and marketing) Act of 1937, more than forty primary commodities are compulsorily graded for export and voluntarily graded for internal consumption. Although the regulation of commodity markets is a function of state government, the directorate of marketing and inspection provides marketing and inspection services and financial aid down to the village level to help set up commodity grading centers in selected markets.

Review of Literature :

Ajjan (1986) conducted a study of regulated markets in Tamil Nadu-a melody-remedy analysis. He studied 13 market committees and 246 regulated markets in the state. He observed that there were real operational difficulties rather than the structural defects.

Jain (1998) studied the structure and market functions of the Regulated Market, Raipur in Madhya Pradesh State. He pointed out that the marketing efficiency measured in terms of better prices to the producers, lower marketing charges and availability of adequate market facilities were relatively better in the regulated market.

Krishna and Rao (1983) conducted a study on marketing of agricultural produce in Bihar state. They found that there was only one regulated market place dealing with both collection of agricultural commodities and its distribution. These operations were being done throughout the year; Market charges were less than those before establishment of regulated market. Commission charges formed 90% of the total market charges. Regarding other amenities, no facilities such as banking, postal services etc. This was mainly due to lack of space required for providing such amenities. They also concluded that there was need to establish such markets in other places of the state, so that the farmers need not travel much for marketing their produce. They also suggested that the proper infrastructural facilities must be provided to enable the farmers to transport their produce to the market place at low cost.

Shrinivasan (1997) studied organizational and management effectiveness of market committees and regulated markets in Tamil Nadu. In this study, he evaluated the managerial and organizational effectiveness of 14 district market committees and 140 regulated markets in Tamil Nadu. From this study, he concluded that the management effectiveness was found to be good particularly in heavy arrival and medium arrival committees. As against this, it was poor in all low arrival markets.

Singh et al. (1998) studied the organizational, structure and performance of the Primary Regulated market in Uttar Pradesh State. They found that the market was not taking care to practice the objectives of regulated markets. Low efficiency was due to malpractices in functioning of the market. The study suggested that there is a need to review the act itself, its rules and by-laws of the market committee for efficiency purposes.

Pannambalam R.(2001) viewed that the efficient management of the market is the main solution to increase the revenue to the Market Committees. Efficient management leads to the pricing efficiency, physical efficiency, service facilities, and lesser marketing cost which automatically increases the financial efficiency of the markets. He further viewed that the Executives involving in the management of market should be made expert in the management process by imparting proper training. The administrators of varying interest of Market Committee should also be trained in the perspective market planning and policy decisions on effective market regulation.

Takalkar (2005) carried out the study on management of APMCs, in Pune district. His findings were as follows.

- i) There is tremendous fluctuations in the market price rates,
- ii) Rates of Commission, hamali charges, weighment charges in the three APMCs were varying for the same commodity.
- iii) Transport facilities were not provided to the officers and the staff.
- iv) Sub - committees appointed by the APMC do not work efficiently.

v) There observed to be political interference in activities of APMCs.

However, the APMCs have acquired financially sound position during last 10 years. Since the study covers management aspects and did not show any financial aspects. 10 Above reviews clearly show that the market committees do undertake various developmental activities and provide the necessary amenities in the market

Objectives of the study :

- Rotation of economic resources – Agriculture marketing generates 52% employment in India.
- Development of backward areas.
- Increase in productivity of economy.
- Help farmers sell their product at a favourable time, place and price.
- To widen the product range.
- To help in planning for successful operations leading to better quality of produce and customer satisfaction.
- To bring in good marketing practices which helps to cope up with environmental change.

Scope for improvement :

Agricultural marketing aims to provide best advantages and facilities to farmers. Farmers in India have also realized the importance of adopting new production and techniques. But still there is scope for improvement and it is necessary to focus on the following :

- ✓ Giving more importance to corporate institutions.
- ✓ Including market studies and market intelligence.
- ✓ Improvement in storing and grading of products.
- ✓ Focus on improvement of prices.
- ✓ Providing training and education to the farmers.

Problems and challenges

• Lack of Transportation Facility

It is the main obstacle in the way of efficient marketing. The rural areas are not linked with the market by roads. A lot of agricultural product is wasted due to transport problem.

• Poor Quality of Product

Farmer is not using the improved seeds and fertilizers so quality of production is very poor and its prices are low in the market.

• A Large Numbers of Middleman

- The middleman also takes a big share of farmer's income without doing anything.
- A poor farmer borrows the money from them and sells his product at lower rates.
- Middlemen makes excessive profits and farmers can not get retail price of market.

• Lack of Grading :

In case of agricultural commodities the mixing of good and bad products is very common in developing countries like India, Afghanistan, Pakistan and etc. There is no proper method for grading of agricultural crops. It creates a problem of marketing inside and outside the country

• Lack of Credit Facilities :

The credit facilities are not adequate to meet the farmer's requirement. Poor farmer is borrows the money from private money lenders at tied conditions.

- **Produce Collection :**

The collection of produce from small farmers is very expensive and a difficult process. It is a great problem for the efficient marketing.

- **Lack of Storage Facility:**

- The storage facilities are required by the producers as well as by the government.
- The farmers need storage to sell their product at a suitable time.
- The government needs stores for keeping reserve stocks. Due to lack of storage facilities a lot of product is damaged on railway stations and in open air.

- **Market News:**

Most of farmers in developing and underdeveloped countries are uneducated and they know nothing about the market conditions. So farmer is unable to achieve the real price of his product.

- **Measure To Improve The Agricultural Marketing :**

Improved Transport Facilities The government should increase the road facilities and rural areas should be linked with the markets. It will enable the farmers to sell their products in the market directly in the hands of consumers.

- **Increase The Credit Facilities:**

- The government should increase the credit facilities to the small farmers.
- No doubt all the commercial banks are providing this facility to the farmers but still it is not sufficient.

- **Increase in Storage Facility :**

The government should provide loan to the farmer for storage facilities. The government should also construct the stores to keep the stocks of various goods

- **Market Reforms :**

The government should improve the market system in the country. Market committee should be reorganized. Markets inspectors should check the prices of agricultural products. The strict laws should be introduced.

- **New Markets :**

The government should build the new markets near the producing centers. It will enable the farmers to get proper reward.

- **Cold Storage**

This is an important part of organized markets. These are very useful for the perishable goods like fruits and vegetable. The government should expand the scope of cold storage

- **Market Information :**

Market demand and supply condition can be provided to the farmers through radio, T.V and newspaper. The government should also pay special attention to this side.

- **Grading of Product :**

There are various agencies which are busy in grading agricultural product. There is a need to expand these organizations for effective of marketing system.

- **Marketing Research :**

The government should allocate a sufficient amount on marketing research to make the agricultural marketing more effective.

The four government measures to improve agriculture marketing :

- The initial step was to regulate the market and plan a clean, transparent and simple marketing strategy. This regulation helped both the farmers and the consumer. But it still needs to realize the full potential of rural markets.
- The second measure was the procurement process like transportation facilities, warehouse, cold storage, godowns, and the processing unit. However, the current infrastructure is inadequate to adhere to the growing demand and therefore needs to be improved.
- The third aspect is to decide on the fair price for the product. In the past, it has been a set back due to the unequal coverage of farmer members and the absence of a suitable link between marketing, processing cooperatives, and inefficient financial management. Example of a successful cooperative is the Gujarat milk cooperative which transformed the social and economic landscape of Gujarat.
- The last one is policies such as.
 1. Guarantee of Minimum Support Prices (MSP) for agricultural products
 2. Storage of surplus stocks of wheat and rice by Food Corporation of India (FCI)
 3. Distribution of food staples and sugar through PDS

All these measures were penned down to guard the income of the farmers and procuring agriculture products in the subsidized rate to the underprivileged.

Opportunities To Rural Farmer in Agriculture Marketing:

- **The Terminal Markets:**

This scheme introduced to promote modern terminal markets for fruits, vegetables and other perishables in important urban centres in India.

- **The Marketing Extension:**

AGMARK quality control programmes as well as improvements in marketing practices and procedures are advertised through mass media. The information is disseminated through exhibitions, conferences, seminars and workshops.

- **Cooperation in March 2000.**

This includes networking of markets, development of regional portals, market-led extension activities and development of market atlas on Global Information Systems (GIS) platform, etc.

- **The Construction of Rural Godowns:**

The Department of Agriculture and Cooperation introduced a central sector scheme, the 'Grameen Bhandaran Yojana', in March 2002 to promote the construction of rural godowns.

- **Grading and Standardization:**

The scheme for the development/strengthening of agricultural marketing infrastructure, grading and standardization was launched on 20 October 2004.

Conclusion :

India is an agricultural country and one third population depends on the agricultural sector directly or indirectly. Today's agricultural marketing has to undergo a series of exchanges

or transfers from one person to another before it reaches the consumer. As we have a tradition of agricultural production, marketing and allied commercial activities, now it is the time for us to brainstorm and come out with new ideas of value added services. These value added services will give the existing agricultural engine a new dimension. The next logical step could be food-processing which not only could be another revenue generating area but also can provide lots of full-time employment to our youths. With the changing agricultural scenario and global competition, there is a need of exploiting the available resources at maximum level. Indian agriculture, moving from commoditization to commercialization drives it towards market orientation. India can claim to have largest network of agri-business cooperatives in the world, engaging in performing manufacturing, procurement and marketing of agricultural produce. These have proven to occupy important place in our economy. The government must examine its policies and regulations with view to strength the marketing network and ensure that prices are being determined on competitive basis and markets are being manipulated.

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The Research Productivity Deemed universities in Maharashtra State on 'Researchgate' score An Analysis

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Abstract:

The article examines the research contributions of all Deemed University of Maharashtra State. The data for the study have been extracted from the website of Research Gate.net (www.researchgate.net) for this study during July 2021. It was found that 22 Deemed University of Maharashtra state Members in Deemed University have been contributed the research contributions made by Research Gate. Further the data were analyzed to find out the Research Gate RG Scores, Members and Publications of Deemed University of Maharashtra State by Department wise, Members, Publications, Research Gate (RG) Scores, and Top of departments along with their members and various types of documents by top ten departments with publications and authors of Deemed University. Keywords- Research Gate, RG Score

1. Introduction-

Social networking sites like Research Gate (RG) and other are changing the trend of disseminating research through journals and other scholarly publications and indexing databases, and hence, the statistics provided by such sites may indicate the impact of articles and authors as well as their affiliations. The dissemination of research through social networking sites is a relatively new practice that is gaining popularity throughout the world. Social media releases of research increases the readership of articles, thereby popularizing it quickly (Allen et al., 2013).

2. Conceptual Analysis:

2.1 Research Gate:

Research Gate was founded in 2008 by Ijad Madisch, who aims to transform the way researchers are doing their research (Dolan, 2012). Started in Boston and now based in Berlin, Germany, and backed by several U.S. Venture capital firms, Research Gate now has more than +14 million members, with an average of seven researchers signing upper minute (Research Gate, 2018). The success of Research Gate has enabled researchers to disseminate their ideas and share their publications free of charge to facilitate collaboration among researchers from all over the world. Through ResearchGate, members' can use the platform to maintain their own publications, ask and answer research-related questions, and follow their researchers to receive their publication updates. (B. Jeyapragash 2018)

2.2 Deemed university, or deemed-to-be-university, is an accreditation granted to higher educational institutions in India, conferring the status of a university. It is granted by the Department of Higher Education. To quote the Ministry of Human Resource Development (MHRD), "An Institution of Higher Education, other than universities, working at a very high standard in specific area of study, can be declared by the Central Government on the advice of the University Grants Commission (UGC), as an Institution 'Deemed-to-be-university'. Institutions that are 'deemed-to-be-university' enjoy the academic status and privileges of a university.

The higher education system in India includes both private and public universities. Public universities are supported by the Government of India and the state governments, while private universities are mostly supported by various bodies and societies. Universities in India are recognized by the University Grants Commission, which draws its power from the University Grants Commission Act, 1956. In addition to this, 15 Professional Councils are established, controlling different aspects of accreditation and coordination. The status of a deemed university allows full autonomy in courses, syllabus, admissions and fees. The UGC list dated 23 June 2008 lists 130 deemed universities. Note that although the list is dated 23 June 2009, the latest addition to the list, Institute of Liver and Biliary Sciences, was made on 24 June 2009. According to this list, the first institute to be granted deemed university status was Indian Institute of Science which was granted this status on 12 May 1958, recently the oldest in Asia and one of the most active research institution Indian Association for the Cultivation of Science. Established in 1876 was granted deemed-to-be-university status under de-novo category on 2 June 2018. There are deemed universities in 18 of the 29 states of India and three of the union territories. The state with the most universities is Tamil Nadu with 28 deemed universities. As of 31 December 2015, there are 125 deemed to be universities in India.

3. Objectives of Study:

The following are the major objectives of this study.

- To find out the Research Gate RG Scores, Members and Publications of Deemed University of Maharashtra state
- To find out the research contributions by Publications.
- To analyze the Research Gate (RG) scores by top Members.

4. Scope & Limitation of Study:

Document types and number of documents in which Research Contributions have been used hence, the present Study is limited to search results on the Topic of Deemed University of Maharashtra state. in research Gate database during July 2021. The result indicates that there were total 22 Deemed University of Maharashtra state Members (July 2021) documents on 22 Deemed University of Maharashtra state Members Research Contributions in Research Gate during the period.

5. Methodology:

The data were extracted from Research Gate website (<https://www.researchgate.net>) during July 2021. It was found that 22 Deemed University of Maharashtra state Members of Research Gate in Maharashtra is contributing their research, sharing the information, collaboration and discuss with the subject experts through Research Gate. Further the data was analyzed to find out the Research Gate RG Scores.

6. Review of Related Literature:

Deshmukh R.K., (2021) 'The researchgate score of university of Mumbai: An Analysis' this study during April 2021. It was found that 2437 members in Mumbai universities have been contributed the research contributions made by research gate. Deshmukh R.K. (2020), Research Productivity of library professional in Dr. BAMU, Aurangabad on google Scholar in there are many online mediums for viewing your published publications. This research article discusses google scholar search engine. Deshmukh, R. K.(2019), 'Webometric Analysis Agriculture University websites for Maharashtra State, the article examines the website of agriculture

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7. DATA ANALYSIS

7.1 RG Score of Deemed University of Maharashtra state.

Total RG Score in 22 Deemed University of Maharashtra state in Research gate. The RG Score measures scientific reputation based on how your work is received by your peers. We believe that researchers are the best judges of each other's work and that all a person's research, published or not, deserves credit. With this in mind, your RG Score is calculated based on any contribution you share on Research Gate or add to your profile, such as published articles, unpublished research, projects, questions, and answers.

Table No. 1

Sr. No.	Name & Address	Total RG Score
1	Tata Institute of Fundamental Research, Mumbai	12426.29
2	Institute of Chemical Technology, Matunga, Mumbai	8098.28
3	Narsee Monjee Institute of Management Studies Mumbai	3782.54
4	NMIMS University, Mumbai	3782.54
5	SYMBIOSIS International University, Symbiosis Vishwabhavan, Pune	3467.66
6	Bharati Vidyapeeth, Lal Bahadur Shastri Marg, Pune	3,452.45
7	Central Institute of Fisheries Education,	2,805.28
8	Tata Institute of Social Sciences, Deonar, Mumbai	2655.51
9	Datta Meghe Institute of Medical Sciences, Nagpur	1869.21
10	International Institute for Population Sciences Mumbai	1687.53
11	Defence Institute of Advanced Technology (formerly Institute of Armament Technology), Pune	1636.15
12	Dr.D.Y.Patil Vidyapeeth, Pimpri, Pune	1365.63
13	Padmashree Dr. D.Y.Patil Vidyapeeth, Nerul, Navi Mumbai	911.41
14	Homi Bhabha National Institute, Knowledge Management Group BARC Central Complex, Mumbai	843.39
15	Krishna Institute of Medical Sciences, Karad, Satara	680.05
16	Pravara Institute of Medical Sciences, Loni, Distt. Ahmednagar	525.39
17	Indira Gandhi Institute of Development Research, Gen. Vaidya	429.53
18	D. Y. Patil Medical College, Kolhapur-	284.32
19	Deccan College Post-Graduate and Research Institute, Pune	256.03
20	Gokhale Institute of Politics & Economics, Pune	178.43
21	MGM Institute of Health Sciences, Mumbai	98.15
22	Tilak Maharashtra Vidyapeeth, Gultekadi, Pune	76.84

7.2 Deemed University of Maharashtra state. with Members

The study was analyzed the top departments along with members in Research Gate and the same is given in Table

Table 2. Deemed University of Maharashtra state with Members

Sr.No.	Name & Address	Members
1	SYMBIOSIS International University, Symbiosis Vishwabhavan, Pune	5636
2	Tata Institute of Social Sciences, Deonar, Mumbai	5246
3	Narsee Monjee Institute of Management Studies, V.L. Mehta Road, Mumbai	5186
4	NMIMS University, Mumbai	5186
5	Institute of Chemical Technology, Matunga, Mumbai	2309
6	Tata Institute of Fundamental Research, Mumbai	1435
7	Bharati Vidyapeeth, Lal Bahadur Shastri Marg, Pune-	1206
8	Central Institute of Fisheries Education,	894
9	Defence Institute of Advanced Technology (formerly Institute of Armament Technology), Pune	639
10	Gokhale Institute of Politics & Economics, Pune	538
11	Dr.D.Y.Patil Vidyapeeth, Pimpri, Pune	534
12	Datta Meghe Institute of Medical Sciences, Nagpur	433
13	Padmashree Dr. D.Y.Patil Vidyapeeth, Nerul, Navi Mumbai	420
14	International Institute for Population Sciences Mumbai	322
15	Indira Gandhi Institute of Development Research, Gen. Vaidya	238
16	Homi Bhabha National Institute, Knowledge Management Group BARC Central Complex, Mumbai	170
17	Pravara Institute of Medical Sciences, Loni, Distt. Ahmednagar	168
18	Krishna Institute of Medical Sciences, Karad, Satara	135
19	Deccan College Post-Graduate and Research Institute, Pune	97
20	Tilak Maharashtra Vidyapeeth, Gultekadi, Pune	95
21	D. Y. Patil Medical College, Kolhapur-	60
22	MGM Institute of Health Sciences, Mumbai	47

Table 2 directs that the Deemed University of Maharashtra state along with members of the same in Research Gate. It explains that the SYMBIOSIS International University, Symbiosis Vishwabhavan, Pune 5636 members and placed in first rank. It is followed by Tata Institute of Social Sciences, Deonar, Mumbai with 5246 members and occupied second rank. It further found that the MGM Institute of Health Sciences, Mumbai has less number of 47.

7.3 Deemed University of Maharashtra state along with Publications:

The study was analyzed the Publications different Deemed University of Maharashtra state along with Publications in Research gate and the same is given in Table 3

Table No.3 Publications

Sr.No.	Name & Address	Publications
1	Tata Institute of Fundamental Research, Mumbai	24346
2	Institute of Chemical Technology, Matunga, Mumbai	6723
3	Homi Bhabha National Institute, Knowledge Management Group BARC Central Complex, Mumbai	6688
4	Bharati Vidyapeeth, Lal Bahadur Shastri Marg, Pune-	2470

5	Tata Institute of Social Sciences, Deonar, Mumbai	1762
6	SYMBIOSIS International University, Symbiosis Vishwabhavan, Pune	1272
7	Central Institute of Fisheries Education,	1136
8	Indira Gandhi Institute of Development Research, Gen. Vaidya	999
9	International Institute for Population Sciences Mumbai	897
10	Defence Institute of Advanced Technology (formerly Institute of Armament Technology), Pune	658
11	Datta Meghe Institute of Medical Sciences, Nagpur	605
12	Dr.D.Y.Patil Vidyapeeth, Pimpri, Pune	475
13	D. Y. Patil Medical College, Kolhapur-	417
14	Padmashree Dr. D.Y.Patil Vidyapeeth, Nerul, Navi Mumbai-400	364
15	Krishna Institute of Medical Sciences, Karad, Satara	310
16	Pravara Institute of Medical Sciences, Loni, Distt. Ahmednagar	298
17	Narsee Monjee Institute of Management Studies, V.L. Mehta Road, Mumbai	258
18	NMIMS University, Mumbai	258
19	Gokhale Institute of Politics & Economics, Pune	252
20	Deccan College Post-Graduate and Research Institute, Pune	119
21	Tilak Maharashtra Vidyapeeth, Gultekadi, Pune	75
22	MGM Institute of Health Sciences, Mumbai	31

Table no. 3 shows that author ranking for research Publication in ResearchGet of Research members affiliated to Deemed University of Maharashtra state.

7.4 Popular Reads of member's Publications (July 17, 2021)

Table No. 3 Popular Reads of Member's publications

Sr.No.	Name & Address	Reads of Member's Publications (July 11)
1	Narsee Monjee Institute of Management Studies, V.L. Mehta Road, Mumbai	20265
2	NMIMS University, Mumbai	20265
3	SYMBIOSIS International University, Symbiosis Vishwabhavan, Pune	16587
4	Tata Institute of Social Sciences, Deonar, Mumbai	12773
5	Central Institute of Fisheries Education,	11835
6	Bharati Vidyapeeth, Lal Bahadur Shastri Marg, Pune-	11685
7	Institute of Chemical Technology, Matunga, Mumbai	10519
8	Tata Institute of Fundamental Research, Mumbai	9705
9	Datta Meghe Institute of Medical Sciences, Nagpur	9236
10	International Institute for Population Sciences Mumbai	8715
11	Dr.D.Y.Patil Vidyapeeth, Pimpri, Pune	4550
12	Padmashree Dr. D.Y.Patil Vidyapeeth, Nerul, Navi Mumbai-400	4260
13	Krishna Institute of Medical Sciences, Karad, Satara	2571
14	Deccan College Post-Graduate and Research Institute, Pune	2362
15	Indira Gandhi Institute of Development Research, Gen. Vaidya	2339
16	Pravara Institute of Medical Sciences, Loni, Distt. Ahmednagar	2314
17	Defence Institute of Advanced Technology (formerly Institute of Armament Technology), Pune	2185
18	Tilak Maharashtra Vidyapeeth, Gultekadi, Pune	1989

19	D. Y. Patil Medical College, Kolhapur-	1508
20	Gokhale Institute of Politics & Economics, Pune	1091
21	Homi Bhabha National Institute, Knowledge Management Group BARC Central Complex, Mumbai	910
22	MGM Institute of Health Sciences, Mumbai	413

7.5 Conclusion:

Social Networking Sites playing the important role in communicate and share the information among one to one, one to groups and one to worldwide. The Academic Social Network Sites communicates and shares the information about research activities among academics. In very special the Research Gate playing important role in sharing and promoting research activities among research scholars in world wide.

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Impact of Covid-19 Pandemic on Indian Banking Sector

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Abstract:

Covid-19 pandemic has affected the every sectors of economy including banking sector. Present study attempts to analyze the impact of Covid-19 pandemic on Non-performing assets, Capital Adequacy and financial performance of banks operating in India. Study is based on secondary data extracted from 10 largest scheduled commercial banks operating in India. Data was collected for the period from 1st April 2019 to 31st March 2021, covering the 8 quarterly financial statements of banks for two financial years i.e. 2019-20 and 2020-21. The period of 2019-20 is considered as pre Covid-19 pandemic period and period of 2020-21 is considered as during Covid-19 pandemic period. The collected data had been analyzed using Panel data Fixed Effect model. The study rivals that Net NPA of Indian banks have declined during the Covid-19 pandemic period. Study also shows that's Net profit, Capital Adequacy ratio and Net Interest margin has significantly increased during the pandemic period. Only Credit-deposits ratio of Indian banks have negatively affected due to Covid-19 pandemic.

Key words: Covid-19 pandemic, Impact, Indian banking sector, Non-performing assets & financial performance.

Introduction:

COVID-19 originated from Wuhan in China in December 2019 before spreading to other countries in 2020. On March 11th 2020, the World Health Organisation (WHO) declared COVID-19 a pandemic due to its global widespread (Ajide & Osinubi, 2020). The first case of COVID-19 in India was reported on January 30, 2020; (Pal & Yadav, 2020). On March 19, 2020, Prime Minister Narendra Modi urged India's 1.2 billion citizens to place themselves under self-curfew on Sunday (March 22) to protect themselves from the Coronavirus. By March 24 2020, the whole country was in lockdown for 21 days (Gaikwad & Satish, 2020).

Indian Economy during Covid-19 Pandemic:

The outbreak of the COVID-19 pandemic is an unprecedented shock to almost every economy in the world. In response to the spread of the virus, many governments announced lockdowns. India announced a nationwide lockdown on March 24 2020. This continued for close to two months and is currently continuing in some form or the other throughout the country including India (Sengupta, 2020).

The COVID-19 outbreak has been causing damage on people's lives and economy all across the world since December 2019. As of August 2020, COVID-19 has infected roughly 20 million people in 90 countries (Asad et al., 2020). If the virus spreads throughout India, the economic impact on the country may be massive and long-lasting. While the impact on economic prospects is felt in nations such as China, South Korea, Japan, Italy, and others through trade, investment, and service channels, a shutdown in India may be far more damaging.

On 23rd March 2020, stock markets in India post worst losses in history. Various businesses like hotels and airlines are cutting salaries and shedding employees. Unlike most sectors, FMCG has been an unlikely gainer from the outbreak. Panic buying has increased consumption in FMCG sector across the country. Consumers are hoarding basic food items like

milk, curd, rice, Atta, oil and lentils, also as care products like soaps, hand wash and sanitizers because of fear of a lockdown. During the pandemic, agricultural enterprises faced the challenge of logistics disruption, especially shortages of key inputs such as labor and feed, and delivery problems (Zhang et al., 2020). This epidemic has had a significant impact on the Indian economy, which is now at risk of falling into severe poverty (WHO, 2020). Almost every sector of India has been impacted by this unknown pandemic, either directly or indirectly.

Indian Banking Sector during Covid-19 Pandemic:

The COVID-19 pandemic and lockdown have also had severely affected the banking sector that has to meet the expectations of the customers. This Covid-19 pandemic could be the most serious challenge to the financial institution in the coming future. Banks have to make serious decisions regarding this situation such that they will be able to work out their plans which are necessary to maintain in this pandemic (Sengupta, 2020). Banks have to look after their various issues with regards to this pandemic and should show some empathy towards their customers which will help them to retain their customers or to attract new ones. Banks are coming out with new strategies which help them to fight this pandemic and also to achieve their reputation in the market. Banking customers need financial relief, and the Reserve Bank of India encouraged national banks to give it by enacting customer-friendly banking regulations. To address employee security concerns, it was decided to allow workers to work from distant locations (Bobade, 2020). Banks are used to dealing with a wide variety of hazards, and the pandemic will exacerbate them by limiting liquidity, tightening credit, increasing nonperforming assets and default rates, lowering loan and investment returns, lowering market interest rates, and sparking infectious bank runs. As a result, a variety of risks, such as credit risk and liquidity risk, are expected to rise for banks. As such, banks are likely to see increases in a number of risks, such as credit risk, liquidity risk, market risk, and interest rate risk (Barua & Barua, 2021). This is likely to further increase in developing nations, where banks service millions of people and businesses with little financial and economic resources, and where market competition is intense (Mishra et al., 2021).

Research Problem:

Covid-19 pandemic had affected the whole world economies. Financial institution and banks are the backbone of any economy, well being of those indicates well begins of economy. Due to Covid-19 outbreak in Indian economy, Reserve Bank of India (RBI) had given relaxation for loan borrower while paying EMI and for banks in classification of loan as Non-performing assets. Some borrowers had taken an advantage of it, as results banks has to suffer from consequences. So there is a need to know what is a impact of it on Non-performing assets, Capital Adequacy position and financial performance of Indian banks in this Covid-19 pandemic scenario. Present study will make an attempt to analyze the impact of Covid-19 pandemic on Non-performing assets, Capital Adequacy and financial performance of banks operating in India.

Literature Review:

Mishra A. K., et al (2021) had studied the Impact of Covid-19 Outbreak on Performance of Indian Banking Sector. Study found that the Covid-19 pandemic destroyed the growth of the various economic activities in countries including Indian banking sector. Vahid Shahabi et al, (2021) tried to emulate the effect of COVID-19 outbreak on the development of branchless banking in Iran. Study results showed that banking transactions and a bank's financial resources

would increase by implementing the package policy of reducing the number of branches, promoting incentive policies and increasing the budget rate of the bank in Information Technology. Ghosh R. and Saima F. N. (2021) had analyzed and forecast the financial sustainability and resilience of commercial banks of Bangladesh in response to the negative effects of COVID-19 pandemic. Study found that EBL and DBBL are the most resilient banks, and ONE BANK is the worst resilient bank in Bangladesh in managing the COVID-19 pandemic shock. Inzamam U. H. and Tahir M. A. (2020) tried to analyze the Impact of e-banking service quality on e-loyalty in pandemic times through interplay of e-satisfaction. Study found that reliability and website design proved to increase e-banking loyalty, particularly during COVID-19 pandemic. Barua B & Barua S. (2020) tried to analyze Covid-19 implications for banks by taking evidence from an emerging economy i.e. Bangladesh banking sector. Study estimated that larger banks are relatively more vulnerable and increase in Non-performing loans had leads to decline in Capital adequacy ratio and interest income. Asif Perwej (2020), analyze the impact of Covid-19 on Indian banking system. Study concluded that traditional banks functions were affected due to Covid-19 pandemic and they had put more focus on online banking functions. Priyanka Bobade & Anu Alex (2020) had studied the effect of Covid-19 in Indian banking sector. Study highlights that most of banks faced the problem of NPA, non recovery of loans and increase in frauds and bad loans.

Research Gap:

After going through the above literature survey it is found that most of earlier research work focus on analyzing and evaluating the impact of Covid-19 on Indian banking sector using conceptual and theoretical information published in various news papers, reports of government and non government's organizations. Present study will be based on the secondary data collected in the form of Quarterly financial statements from 10 largest scheduled commercial banks operating in India. Present study will also apply statistical tools and technique to analyze the Covid-19 pandemic impact using event study methodology.

Research Question:

- i. What is the impact of Covid-19 pandemic on Non-performing assets and Capital adequacy of Indian banks?
- ii. Does the performance of banks affected due to Covid-19 Pandemic?

Objectives:

- i. To analyze the impact of Covid-19 pandemic on Non-performing Assets and Capital Adequacy of selected Indian scheduled commercial banks operating in India.
- ii. To evaluate the performance of selected Indian scheduled commercial banks operating in India during the Covid-19 pandemic period.

Hypothesis:

Ho1: There is a significant impact of Covid-19 pandemic on Gross NPA, Net NPA and Capital Adequacy Ratio of selected Indian scheduled commercial banks.

Ho2: There is a significant impact of Covid-19 pandemic on Net profit, Return on assets, Net interest Margin and credit deposits ratio of selected Indian scheduled commercial banks.

Research Methodology:

Present study tries to analyze the impact of Covid-19 on Indian banking sector for which researcher has selected 10 largest scheduled commercial banks operating in India in terms of

size, branches, assets etc. Among 10 largest scheduled commercial banks, 4 are public sector banks i.e. State Bank of India, Punjab National Bank, Bank of India and Bank of Baroda and 6 are private sector banks i.e. ICICI Bank, HDFC Bank, Yes Bank, Axis Bank, Kotak Mahindra Bank and IndusInd Bank. Study is based on secondary data collected from official websites of respective banks in the form of quarterly financial reports furnished by respective banks to NSE and BSE stock exchange of India. Study covers the period from 1st April 2019 to 31st March 2021, which includes 4 quarter of pre Covid-19 pandemic i.e. from 1st April 2019 to 31st March 2020 and 4 quarter of during Covid-19 pandemic i.e. from 1st April 2020 to 31st March 2021. Nation-wide lockdown was implemented from 24th March 2020 hence researcher has consider Covid-19 pandemic period from 1st April 2020 onwards. Present study is based on event study methodology. Covid-19 pandemic is a dummy variable created by author using pre and during pandemic time period in order to analyze the impact. The impact of Covid-19 will be studied using Panel data analysis.

Data Analysis and Interpretation:

The impact of Covid-19 had been studied on Indian banks performance and Non-performance assets using panel data analysis for selected 10 banks under study. In order to use panel data model, Panel data diagnostics test had been performed as shown in table No. 1 & 3.

Table No. 1 Panel data Diagnostics test

Variables	P-value for Fixed effect estimator
Gross NPA (Rs)	9.6225e-046
Gross NPA (%)	1.0082e-031
Net NPA (Rs)	4.5796e-026
Net NPA (%)	6.45187e-031

Source: Compiled using Gretl software

Table No. 1 shows the output of panel data diagnostics test. The P-value for fixed effect estimator in case of Gross NPA, Gross NPA ratio, Net NPA, Net NPA ratio is less than 0.05 at 5% level of significances, which indicates that Fixed effect model is adequate than Pooled Ordinary least squared (OLS).

Table No. 2 Panel data Fixed Effect Model showing Impact of Covid-19 Pandemic on Non-performing Assets of Indian banks

Variables	Adjusted R-square	Co-efficient Value	P-Value
Gross NPA (Rs)	0.001860	50740.6	0.7210
Gross NPA (%)	0.012286	-0.368250	0.3575
Net NPA (Rs)	0.078192	-268683	0.0182
Net NPA (%)	0.264234	-0.731500	<0.0001

Source: Compiled using Gretl software

From the table No.2 it can be depicted that P-value for gross NPA and gross NPA ratio is insignificant at 5% level of significance, which indicates that Covid-19 pandemic had not shown a significant impact on gross NPA of Indian banking sector. While P-value for Net NPA and Net NPA ratio is less than 0.05 at 5% level of significance which indicate that Net NPA has a significant impact of Covid-19 pandemic on it. The coefficient value for Net NPA is -268683 and Net NPA ratio is -0.731500, which indicates that due to Covid-19 pandemic Net NPA of Indian banking sector had declined by Rs. 2,68,683 lakh and Net NPA ratio by 0.7315% respectively.

Table No.3 Panel data Diagnostics test

Variables	P- value for Fixed effect estimator
Net profit	6.6293e-010
Return on Assets	0.133349
operating Profit	1.24994e-023
Credit Deposits Ratio	7.4764e-026
Net Interest Margin	8.93803e-024
Capital Adequacy Ratio	1.51121e-011

Source: Compiled using Gretl software

As shown in table No. 3, the P-value for panel data diagnostics test of Fixed effect estimator for variables such as Net profit, Operating profit, Credit-deposits ratio, Net Interest margin and Capital Adequacy ratio is less than 0.05 at 5% significances level, hence its indicates that Fixed effect model is favorable than Pooled OLS. Return on assets has a P-value for fixed effect estimator greater than 0.05 at 95% confidences level, hence it is suggested to use Pooled OLS instead of Fixed effect model.

Table No. 4 Panel data fixed effect model and Pooled OLS model showing Impact of Covid-19 Pandemic on Performance of Indian banking sector.

Variables	Adjusted R-square	Co-efficient Value	P-Value
Capital Adequacy Ratio	0.137372	1.50825	0.0015
Net profit	0.039085	84680.9	0.0984
Return on Assets	0.008174	0.50825	0.4251
Operating Profit	0.001786	12649.1	0.7264
Credit Deposits Ratio	0.061548	-3.45511	0.0370
Net Interest Margin	0.364370	4.97231	<0.0001

Source: Compiled using Gretl software

From table No. 4 it can be observed that Capital adequacy ratio, credit-deposits ratio and Net interest margin is significant at 5% level of significances and Net profit is significant at 10% level of significances, which indicate that those variables has a significant impact of Covid-19 pandemic. Capital Adequacy ratio, Net profit and Net interest margin has a positive impact of Covid-19 pandemic as, Capital adequacy ratio had increased by 1.51%, Net profit had improved by Rs. 84680.9 Lakh and Net Interest margin by 4.97% respectively. Credit-deposits ratio has negatively affected due to Covid-19 pandemic as it has decreased by 3.465 during Covid-19 pandemic period.

Conclusion:

From the present study is can be concluded that incase of Non-performing assets, Net NPA share had shown declining trends in Covid-19 pandemic period for the Indian banks, but Gross NPA stand constant during the Covid-19 pandemic period. The financial performance of Indian banks had a positive impact of Covid-19 pandemic, which can be identified from positive coefficient value which indicates increase in Capital Adequacy ratio, Net Profit and Net Interest Margin during the Covid-19 pandemic. Only the Credit-Deposits ratio of Indian banking sector had shown negative impact during Covid-19 pandemic period. Present study covers the financial data of only 8 quarters for studying the impact of Covid-19 pandemic and Covid-19 pandemic is not yet over to study the exact impact. This study will be a base for future research to understand the Covid-19 impact in short run for Indian banking sector.

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Redtapism in India

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Introduction:

Redtapism is word used to express more Acts, rules and regulations and Guidelines are used to work according to the principles. One way it gives protection to the public and in other way it is a hurdle or obstacle for the growth. The Ram Nath Kovind, President of India said at the joint Session of Parliament in 2016 “nearly 1800 obsolete Legislations are at various stages of repeal”. In the same way the Prime Minister Narendra Modi said that at the Economic Times Global Business Summit in January 2016, “Our country suffers from an excess of old and unnecessary laws which obstruct people and businesses. We began the exercise of identifying unnecessary laws and repealing them. 1,877 Central laws have been identified for repeal. Out of these, 125 have already been repealed. Bills for repealing another 758 have been passed by the Lok Sabha and are awaiting the approval of the Upper House”

Red tape. As per the definition of Black's Law Dictionary Red tape is “Collectively, the bureaucratic rules that must be followed before official action can be taken even if the rules are unnecessary and irrelevant; esp., time consuming rules and regulations of an excessive bureaucracy”.

According to Savigny, Law grows with the growth & strengthens with the strength of the people & finally dies away as the nation loses its nationality. He contended that it is the broad principles of the system that r to be found in the spirit of the people & they manifest themselves in customary rules. Law is a matter of unconscious & organic growth (i.e., not made deliberately). Law is found & not made.

In day to day life the rules and regulations play a very important role. For example, playing cricket, the rules of cricket playing control or manage properly how to play without any problem for others. The same can be observed in medical profession while treating the patient, if there are no such rules it may create problem for the public.

Situation in the 21st century, the free trade which is possible because of body of required regulations, when the company facing problem they have to settle through the framework of regulations otherwise they can't do business smoothly. Therefore, the acts, rules and regulations are important for day to day activities, business and administration. The civilized society run through rule of law.

The rule of law is helpful to control the society in a systematic way. The rules and regulation, acts, by –laws are passed to help the public. However, when more acts are enacted it create problem for the society. The ignorance of law is not an excuse but due to the frequent enactment and amendments in the Acts makes it difficult for the public to know about the latest one. This was happened in India at the time of demonetization, the government amended the demonetization policy nearly every day, where the public could not understand which one they have to follow? The frequent changes and overcrowded Acts or policies also create problem instead of solving the problem. Legal system of any country in the world aims at balancing the rights and duties of the individuals and institutions in the society. It is difficult to balance, and judge sometimes, as with time, changes in the Act and provisions in it becomes obsolete and

therefore to see what is bad and good or right and wrong. For example, homosexuality or adultery were considered as a crime in IPC but now these are not a crime because of socio political changes with time. The law is like a chocolate when we eat one or chocolates in reasonable quantity it would not create problem, the same chocolate if eat in more quantity, it's a poison. Likewise, less number of Acts are easy to manage and administer the society, if they are more, it will create problem in implementation.

Number of Acts passed in India:

Since 1800 to 2018 Government of India has passed about 3713 Acts. If we glance at the half century division of this period, in first half that is 1800- 1850 only 13 acts passed. In next fifty years i.e., 1851- 1900 the number of Acts passed were 165. In the 20th Century first half, that is 1901 – 1950 the number of Acts enacted rises to 796. However, in post Constitution period of fifty years, that from 1951- 2000, the number of Acts enacted and passed were highest in number in comparison to the previous three timelines, nearly stands for 2137 Acts. In 21st century, in last 18 years (2001-2018) the number of Acts enacted are 603.

Thus it is clear from the trend that more number of Acts are passed in the 20th century compared to 19th century. Also the rate of enactment of Acts is higher in 21st century than the 20th century. Beside the Acts, rules and regulations are also passed by the administrative departments for performing their administration activities. Power to design and amend By-laws is delegated to the concerned authorities who are equipped with special knowledge and experience in their day today activities of administration.

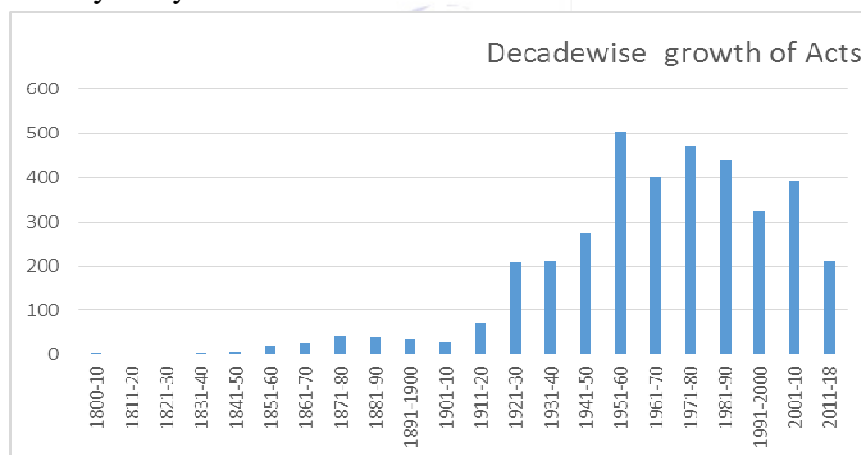


Figure .1

Question arises after observing the time trends in past two century are what makes society to pass number of laws? And what are the reasons for the growth in number of Acts enacted? While looking after the causes and incidents behind passing these laws or Acts, following general criteria or reasons are found as a ground.

1. To replace the existing law,
2. Market economy,
3. Change in the government/ ruling party,
4. Media influence,
5. Cultural shift
6. Technological advancement
7. Incidental
8. Development (Social, Economic and Political)

To replace the existing law:

With the change in time, context to the reasons and purpose for which laws were enacted and passed goes on changing too. To match with and to walk with the pace of time and socio political societal changes, old Acts are amended or replaced by new one. These changes are necessary to avoid the loopholes in the existing Acts and for smooth implementation of the same. The effectiveness of these changes are depend on the implementation and on their proper review. For instance, the countries which are having capital punishment for murder, did not find any reduction in the crime rate of murder. Also countries which have banned on alcohol consumption could not reduce the drinking habit of the public.

Market Economy:

For effective market economy, the framework of laws to protect the interest of advertisers, investment makers, agricultural development, disinvestment and infrastructure development, import and export policies and consumer protection, Government required to build up required legal framework to support, protect and regulate them as desired by Planning policy. This will encourage the entrepreneurs to undertake productive economic activities and also protect the rights of the end customers

Change in the government / Ruling party:

When the new government comes to power, their ideologies and emphasis on priorities to introduce changes also cause to amend, replace, repealed or introduce new Acts. As we find that the present government in India enacted new Acts to introduced Demonetization, The NITI Aayog, Benami property Act and RERA.

Media Influence:

As media is known as fourth pillar of democracy and plays an important and significant role to check and balance the administration in democratic countries, has also let to pass, introduce, repeal and replaced the existing laws. When the issues are discussed in the media, debated by different groups and individuals, the pressure and influence makes the government to pass the Acts on the issues in limelight. Nowadays the information spread more through different non-print social media too. The non-print media has more effect in comparison to print media. Sometime fake news and rumors spread more quickly than real news. Nirbhaya, RTI and POCSO are some instances of Acts, came to exist because of the Media

Cultural Change:

Over the period due to social change and changes in value system has caused to introduce changes in prevailing Acts or to introduce altogether new Act deemed fit to the cultural changes. Best examples of these can be observed in recent time in area of homosexuality, adultery, Sabarimala case and triple talak incidents.

Technological advancement:

Due to the advancement of Science and technology in every fields it's imperative now to consider this fourth dimension and add, amend and introduce this aspect to existing laws wherever required. New Acts like IT act 2000, Cyber Laws, Data Security and Telecommunication Act are some of the examples of Technology factor.

Incidental:

Sometimes an accident or unforeseen event cause to pass , enact or intoroduce an Act to protect or as a precautionary measure Such as Bhopal Gas Tragedy, Vishakha Act, Nirbhaya Act

and other are incidental Acts made Government to pass them to protect and for the welfare of the Society

Development (Social, Economic and Political):

When the government introduce development by huge infrastructure projects through Planning like SEZ, Metro, Dam construction, roads, Airport, water ways and ports the governments has to enact the supportive Acts and Legal framework accordingly. Also this can be observed in area of empowering the socially weaker section like Caste, Gender and class, the government enacted reservation policy.

Supreme Court and International Treaties:

Some time supreme Court Judgments are land marking to change the existing framework and provision. Consumer Protection Act, Environment Protection Act GATT and WTO practices are example of this ground

Repealing old Acts:

The present government of India has taken initiative to remove the acts which are obsolete or outdated in nature. Repealing is necessary for the purpose of updating, simplifying, streamlining and rationalizing the acts and also amending the acts. For this, the government asked Law commission of India to find out the Acts which are not relevant, inconsistent and are outdated. , for which five law commissions like

S.No.	Law Report No.	Year	Name of the Report	Name of the Chairman
01	18	1961	Converts' Marriage Dissolution Act, 1866	Justice T. V. Venkatarama Aiyar
02	81	1979	Hindu Widows Remarriage Act, 1856	Justice P. V. Dixit.
03	96	1984	Repeal of certain obsolete Central Acts	Justice K. K. Mathew.
04	148	1993	Repeal of Certain pre-1947 Central Acts	Justice K. N. Singh
05	159	1998	Repeal and Amendment of Laws: Part I	Justice B. P. Jeevan Reddy

The above Law commissions submitted their reports, based on these reports governments repealed some Acts but not all the recommendations were followed.

In the year 2014 the government formed the Ramanujam Committee under R.Ramanujam , who was a working with PMO office. According to Ramunujam Committee Report 2781 central Acts were in existence as on October 2014. Out of these, he suggested to repeal 1741 central acts. From these 1741 Acts, 340 were central Acts on State subject that had to be repealed by the respective state legislatures. The government considered to repeal the Acts which are irrelevant or are hurdles to the growth, needs to be removed. The 96th law commission report take note of what was earlier observed “Every legislator is expected to undertake what may be called the periodical spring- cleaning of the corpus of its statue law, in order that dead wood may be removed and citizen may be spaced of the inconvenience of taking notice of laws which have ceased to bear any relevance to current condition”.

The Law commission of India, based on these recommendations, two repealing laws namely the Repealing and Amending Act, 2015 and the Repealing and Amending (Second) Act, 2015 were enacted by Parliament.

S.No.	Report No.	Year	Name of the Report	Name of the Chairman
01	248	2014	Obsolete Laws: Warranting Immediate Repeal (Interim Report)	Justice A. P. Shah
02	249	2014	Obsolete Laws: Warranting Immediate Repeal (Second Interim Report)	Justice A. P. Shah
03	250	2014	Obsolete Laws: Warranting Immediate Repeal (Third Interim Report)	Justice A. P. Shah
04	251	2014	Obsolete Laws: Warranting Immediate Repeal (Fourth Interim Report)	Justice A. P. Shah

The 19th Law commission was formed in the year 2012 under the Chairman Mr. Justice P. V. Reddi, 2009-2012 of 19th Law Commission to find out the act which are needs to be removed which is titled “Identification of Obsolete laws”, but the nineteenth law commission could not have finished their work, the government asked the 20th law commission in the year 2014 to continue the work and find the acts which are to be repealed, the commission title the report as “Obsolete laws: Warranting immediate Repeal- An Interim Report. Based on these the law commission started their work to find out the outdated acts. It is difficult to find the acts which are outdated, because overlapping of some acts with other acts. For this the commission required to classify the Acts based on the subject for which they followed

- 1.The United States Approach Title method
2. VII Schedule of the Constitution which classify Central, State and Concurrent list of Acts and
3. Subjects title available in the Journals based on this the acts classify into 49 subjects.

248th Law Commission submitted that where it mentioned that the report will be submitted as an interim report in which it shows the list of the acts needs to be repealed partially repealed and amended and amended acts 20TH Law commission submitted four reports like 248th, 249th 250th and 251st. In the 248th Law commission report it mentioned the acts 159th D.K.Jain commission report were not repealed. The repealed Acts are also available or shows in the official legal site. Secondly the central acts which enacted recently not uploaded in the site. The repealed acts repealed because on following grounds

1. The subject matter of the law in question is outdated.
- 2.The purpose of law in question has been fulfilled.
3. The newer law or regulation governing the same subject

In the central Acts, there are more than 700 Appropriation Acts, which are not useful and also not repealed from the central Acts. There is no provision in India to remove the Acts from the list after some time or fulfilling the purpose like United Kingdom or Australia. In Australia the appropriation acts contain automatic repealing.

Under Article 372(1) of the Indian Constitution which says that pre-Independent laws continue to remain in force useless amended or repealed by a competent legislature. When the Act is repealed it has to be from the State Legislative assembly (if the acts are belonging to the particular state) or the Parliament.

Upto 1950, 1029 Acts were repealed. The Law Commission of India prepared the reports i.e. 248th 249th, 250th and 251st found the old Acts could be repealed. Based on that R. Ramanujam Committee was formed to find out the Central Acts, which are irrelevant or not necessary/re-enactment.

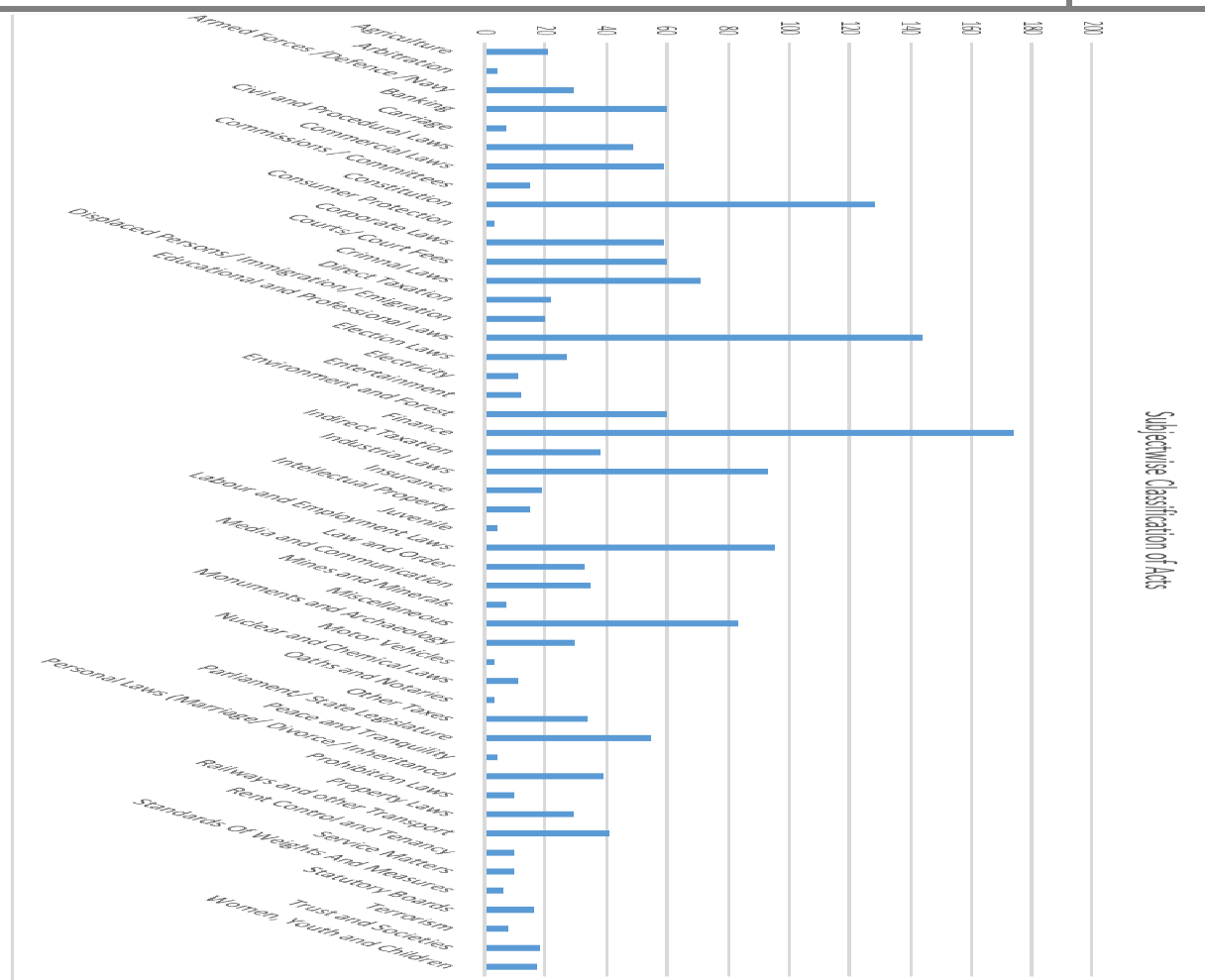


Figure – 2

In the figure – 2 it shows the subject wise number of Acts have been passed over the period. In this figure Finance is the subject or class in which highest number of acts are passed, second is in Educational and professional and the third is in Constitution, fourth is Labour and employment, by number in descending order.

Conclusion:

India is a largest democratic country in the world. Which has passed 3713 Acts since the year 1800 onwards. When we see the Acts enacted before and after independence, it is witnessed that growth rate is more after independence as India being a welfare state owes responsibility to cater to the diverse needs of the society at large. The growth of Acts also poses a problem or hurdles or obstacles to implement the schemes. Therefore, law is classified in to 49 subjects for easy understanding.

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Women Empowerment through Gender Equality

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Abstract:

Gender Equality is a drawn out issue in our general public and female are separated from numerous points of view in the social setting of India. Albeit legitimately women have equivalent right. A significant course to accomplishing gender equity is by engaging of women through education, employment and political representation, as well as by ensuring women's access to reproductive health services. This Paper expands on the encounters we confronted and clarifies the significance of gender sensitization in instructive foundations to manage different gender related issues. It additionally depicts methodologies to be received in schools to advance gender sensitization. This paper will be valuable to investigate reinforcing instruments which will guarantee women's full and equivalent support in dynamic at all levels.

Key Words: Women Empowerment, Gender Equality, Teacher

Introduction:

Government of India is implementing various programs/schemes and legislations to address various forms of gender discrimination. The root cause of gender discrimination is the patriarchal mind set prevalent in the Indian society. Though this mind set is changing with urbanization and education, still there is long way to go for a permanent change in the scenario. Legislature of India is carrying out different projects/plans and enactments to address different types of gender segregation. The underlying driver of gender separation is the male centric attitude common in the Indian culture. However this mentality is changing with urbanization instruction, still there is long approach for a lasting change in the situation.

Women's empowerment can be defined to promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. ... In Western countries, female empowerment is often associated with specific phases of the women's rights movement in history.

Empowerment of women is a necessity for the very development of a society, since it enhances both the quality and the quantity of human resources available for national development. Women's empowerment and achieving gender equality is essential for our society to ensure the sustainable development of the country.

Status of women in India:

The 21st century has brought a new hope and has empowered women in a positive manner. Earlier they were under the shadow of a husband or a father, but now they have established their own identity and are independent.

Education is an important key to success. Empowering women would become more pertinent if women were well informed and educated. A woman needs to understand her rights so that she can walk at par with men. Mother Teresa, Indra Nooyi, Pratibha Patil, Kalpana Chawla and a lot more have been very significant in their own sphere and are an idol for every woman in India and across the globe.

Women are now self-sufficient, well aware and financially independent. They have attained immense success in every field, whether it is sports, politics or academics. With the

encouragement of co-education, women are now marching side by side with men, in every walk of life.

Problems Faced by Women in India:

When in the early days, there were serious issues like the Sati framework, no widow remarriage, devadasi framework and the sky is the limit from there. While a large portion of them are not predominant now, there are new issues that women face. They might be not the equivalent but rather they are still just about as extreme as the mid ones. They block the development of a nation and cause the women to feel second rate.

Initially, savagery against women is an exceptionally grave issue looked by women in India. It is going on pretty much consistently in different structures. Individuals deliberately ignore it as opposed to accomplishing something. Aggressive behavior at home happens more frequently than you might suspect. Further, there is additionally settlement related badgering, conjugal assault, genital mutilation and then some.

Following up, we likewise have the issues of gender segregation. Women are not viewed as equivalent to men. They face segregation in pretty much every spot, regardless of whether at the working environment or at home. Indeed, even the young ladies become a casualty of this segregation. The male centric society directs a lady's life unfairly.

Additionally, there is likewise an absence of female education and the gender pay hole. Women in provincial regions are as yet denied instruction for being a female. Additionally, women don't get equivalent compensation as men for accomplishing a similar work. In addition, they likewise face working environment provocation and abuse.

Meaning of Gender Sensitization:



Gender Sensitization is a basic requirement to understand the sensitive needs of a particular gender. It helps us to examine our personal attitudes and beliefs and question the 'realities' that we thought we know. Educational spaces instill thought and make one have a perception that they believe.

Gender sensitivity is enacted through a process known as gender sensitization. Gender sensitization promotes equality for men and women by allowing men and women to view what is stereotypical of and reasonable for their gender. ... Children begin to develop their gender identity around two to three years old.

Need of Gender Sensitization:

Gender sensitization builds the affectability of individuals everywhere towards women and their issues. In the process it makes a class of responsive functionaries at various level, from strategy making to grass root level, who are persuaded that any type of gender predisposition is an impediment in transit of accomplishing an evenhanded social and financial request and accordingly consider tending to gender related issues in their circumstance as an issue of need.

Gender sensitization is first occurrence, will in general change the discernment that people have of one another. It makes an attitude in men that no longer finds in women the cliché picture. The feeling that women are a powerless and inconsistent substance no more mists the personalities of everyday person. Rather they are viewed as mindful and equivalent accomplices in financial turn of events. The overall impression of people on the inflexible gender division of work and other conventional practices identified with gender start to subside. Women additionally will in

general foster the discernment that they are no subordinate to men and they have a similarly significant job to carry out in dynamic at household, community and association level.

Role of teacher to encourage Gender Equality:

Schooling of women is the most incredible asset of progress of position in the public arena. Schooling additionally acquires a decrease imbalances and capacities as a method for working on their status inside the family. To empower the training of women at all levels and for weakening of gender predisposition in giving information and instruction, set up schools, schools and colleges assume significant part.

As boys and girls begin fostering their gendered characters from birth, so gender sensitization is important at the school level. The current day issues additionally emerge because of atomic or single kid families. Prior when there were joint families, kids figured out how to live with one another, sharing and really focusing on others. However, today the situation has changed and these kids from family units don't comprehend the benefits of sharing or mindful. They are conceited and give least significance to other people. Such youngsters in a homeroom circumstance can't help out others and some of the time there might be gender issues in the class. Hence, there is an incredible need to sharpen the youngster's society on gender issues with the goal that they are more mindful and touchy towards the issue.

To achieve an alter the outlooks of the more youthful age teachers ought to be given a sound information in regards to gender issues. Since teachers assume a vital part in the childhood of the youngster and their thoughts and convictions which can change the considered examples youthful understudies. In this manner outstanding amongst other potential systems to limit gender segregation in the public eye is to advance gender mindfulness in guardians and teachers. Teacher should assume his part for expanding proficiency rate for lady in the general public. They should assume their part to prevent endowment framework from the general public. They should crusade in the general public in consistently about the gender sensitization and women empowerment. Courses in gender considers and women's contemplates, class, studios and conversations and other such exercises can assume a major part in sharpening understudies to this issue.

Techniques to upgrade Gender Equality:

In the wake of having profound knowledge into the socio – financial disparity and understanding the mental circumstances of individuals various systems can be arranged. Following systems advance gender sensitization and women empowerment.

- Giving needs to women training. It could be referenced here that University Grant Commission has been advancing the substance of women's studies and all the more explicitly setting up Centers of Women's Studies.
- Giving space to singular youngsters where they can rehearse popularity based methods of interfacing with one another and constructs abilities to haggle with clashes outside the school. For young ladies specifically, school and study halls ought to be spaces to talk about cycles of dynamic, to examine the premise of their choices and to settle on educated decisions.
- Empowering instructive exercises in school for instilling virtues among kids and equivalent regard for young men and young ladies..
- Different security measures for young ladies in the school climate..

- Seminars, workshops and training program are to be conducted regularly to make the girls aware of their
- roles and abilities in the family and society and how they have to equip themselves to face a fruitful professional life.
- Enhancing gender equity by expanding women's access to justice and women human right.
- Expanding opportunities to exercise women's rights in the workplace, community and home.
- Combating gender based violence.
- Preparing of women in distant regions, particularly in rustic regions, with limited portability.

They are additionally considered „burdens“ on their families. Women might be brought to the front line, however without tending to and testing gender standards at an early phase of social turn of events, it is hard to hope to have a general public where women and young ladies have a sense of security and esteemed.

Conclusion:

In this way from the above conversation it very well may be reasoned that both the genders are similarly fundamental for the practical advancement of any general public. Any kind of hole or imbalance concerning the endurance rate, singular count, literacy, wellbeing, security, regard and opportunity will harm the sacredness and the validation of human life. So a ceaseless exertion is being placed toward this path of making a touchier, solid, and judicious and reformist society. In this interaction of gender equity and gender sensitization, schooling assumes a huge part. As a matter of fact, gender sensitization would help in eliminating numerous perceptions we have about being a male or female. At the point when a male and female see one another and are prepared to regard each other's sentiments and abilities as people without attempting to gauge the advantages and disadvantages against one another, we would have a superior society to live in.

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Best Practices and Library Services for Academic Libraries

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Abstract:

Now at present, there are many Best Practices followed in Academic Libraries to improve the quality of library services. Supporting and enhancing the user knowledge (Academic, Social, Welfare and Research). Academic library offers the resources such as library networks, library consortium, library portals, online reference services and encourages the thinking process, creativity, inquisitiveness and makes the learning habits more fruitful. The paper aims to emphasize the role and the importance that best library services have in improving users' academic experience, with reference to various international and national studies.

Keywords: ICT, Academic Library, Best Practices

Introduction :

The global changes, especially the Information and Communication Technologies (ICTs), have an impact on the functioning of academic libraries. The advancements in ICT have changed the users' expectations from academic libraries in different ways. The ways to build collection and services for the end-users vary from the recent past practices. Academic library being the soul of the institution, must march towards innovation by catering diverse needs of the learners giving the necessities of the rural students. The function of an academic library is to provide textbooks, standard references, current journals, which include international, national and peer-reviewed journals, back volumes, e-resources, CDs/DVDs, audio/ video materials, research conducted till date on various subjects to students, faculty members and researchers.

Definition of Best Practices ODLIS (Online Dictionary of Library and Information Science) describes best practices as follows: "In the application of theory to real-life situations, procedures that, when properly, applied consistently yield superior results and are therefore used as reference points in the evaluation of the effectiveness of alternative methods of accomplishing the same task. Best practices are identified by examining empirical evidence of success."

Oxford Advanced Learners Dictionary describes "Best practices as quality of high standard, excellence, highly Improved, outstanding, per excellence service."

Aim and Objective of the library:

- ✓ To develop a collection of reading material useful for different courses.
- ✓ To provide various services and facilities of the library to the users.
- ✓ To provide support research activity and explain the values, mission and policies of the college library.
- ✓ To conserve and preserve the collection of reading material in the library.
- ✓ To provide books and references needed by the academic community.
- ✓ To bring various sources of knowledge (books, Periodicals, encyclopedia) within reach of rural students.
- ✓ To provide books for preparing competitive/recruitment /entrance examinations to the users.
- ✓ To inculcate a culture of reading in students.
- ✓ To provide initiative and quality of education at various levels.
- ✓ Provides essential services such as current awareness, reference services Counseling, periodical and so on, in accordance with the mission and objectives of the college library.

Best Practices for Academic Libraries:

Best practices towards students support and progression are as under.

The college library has an institutionalized mechanism for promoting the employability and placement of its students.

Membership to Non-students:

Those pupils are not regular students. But if they want to use the resources of the college library are admitted as members like alumni. They visit the college library to give guest lectures and career books. They also donate books to the college library.

Newspaper clipping:

Libraries should maintain a collection of newspaper clipping on various subjects like social issues, women empowerment, and biographical information. Current Awareness Service (CAS) provide to the faculty members and students as per the demand. The library should display new addition of reading material.

Periodical section :

The periodicals are displayed on a display rack. Users take the periodicals for reading against their Identity Card.

Institutional Library Membership:

Library should be a member of different bodies like DELNET, National Digital Library, InfliNet "N-List", British Council Library and other institutional consortia library membership.

Library Book Exhibition:

To promote the reading habits among students. The library organizes book exhibitions in the institute for books selection. Faculty members, students and researchers visit the exhibition and personally see the books on various subjects.

Library Policies and Procedures :

The library should have approved policies on the collection development support, books issuance, the introduction of new services, annual budget, book bank, books and back volumes of journals binding procedure, weed out books, and policy on the loss of books.

National Accreditation and Assessment Council (NAAC) and Best Practices

Document prepared by NAAC for "Best Practices in Academic Libraries says:

"NAAC developed a set of "Best Practices" in academic Libraries and distributed under the following four categories.

1. Management and Administration of Library
2. Collection and Services
3. Extent of User Services
4. Use of Technology

The Library and its Facilities

- ✓ Special academic assistance is extended in the form of facilitating students with e-resources for access to e-books, e-journals, guidance on available books in the reference section of the college library.
- ✓ They are also helped by the Earn-While-You-Learn job oriented programme, which gives them an opportunity to work in the college library. Book Bank facility is also extended to needy students.

- ✓ Encourages student-college library interaction through library orientation to fresh members and extension activities.
- ✓ InterLibrary Loan and interlibrary Reference Services
- ✓ Reprographic Services
- ✓ Online public access catalogue
- ✓ Dropbox facility
- ✓ Scanning /Photocopying Facility

Future plans

- To complete the computerization of library with standard digital software like and networking of the library.
- To involve in national network programs like information and library network.
- To automate the entire housekeeping activities of the library.
- To provide research materials to the staff
- To increase current awareness services.
- Conducting book fairs on different occasions.
- Information literacy programmes
- Displaying newspaper clippings and maintaining a clipping file periodically.

Conclusion:

To meet the demands of end-users effectively, academic libraries need to identify and adopt good practices and benchmarks. Best practice may be innovative and be a policy, philosophy, program, strategy, process or practice that solves a problem or create new opportunities and make positive impact on organizations; institutional excellence is the sum total of the best practices followed in different areas of institutional activities, In general, the use of technology and innovative ideas lead to evolving best practices in library and information environment. The library services value needs greater recognition, support and development in the interests of all readers. The role of library services is influenced by relation with higher education institutions and users.

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Role of E-Resources in College Libraries

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Abstract:

College libraries function as an essential integral component in higher education system. Libraries in India are facing a lot of problems due to static budget and exponential price hike of library collections. NLIST, INFONET and INDEST Consortium are major initiatives for academic library users. These radical steps are providing scholarly resources including peer reviewed journals, databases, abstracts, proceedings etc. These efforts must be a boon to college libraries users which will definitely boost the level of higher education system in our country. At present the online databases, E-resources facilitate creation of the colleges at resource sharing among the libraries.

Keywords: E- Resources, Types of E-resource, E-archive

1.Introduction:

In the modern knowledge-based society the role of library professionals is also changing by adapting changing technological products and services in digital information environment with high customers expectations. Library professionals are increasingly responsible not only to provide traditional library information services but also to deliver online information services according to the users need and interest. To achieve this task libraries are functioning under great pressure to become more efficient to deliver more effective e-services to the users. LIS professionals need to be confident and component that they can prepare for new challenges, deal with developing technologies manage change effectively and claim new professional roles. Well informed capable and creative library professionals shall play multiple evolving roles in the 21st century which is the need of the hour now.

The information scenario is changing at a faster speed. The reasons for this change are many. Library users increasingly demand resources in electronic format because of its associated advantages. More and more library staff are now at ease with ICT and is happy and is ready to explore the functionalities of the software/hardware to the maximum extent starting from the lower level, thanks to the rising rate of computer literacy.

2.E-Resources:

An electronic resource is defined as a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text databases, electronic journals, image collections, other multimedia products and numerical, graphical or time based as a commercially available title that has been published with an aim to being marketed. There are several forms and types of electronic resources which are available on the internet, some of the popular ones that are gaining ground are the electronic journals, standards, technical specifications, reports, patents, full text articles, trade reports and hosts of other documents sources. Also, the printed editions of scholarly journals are available on the web.

Some of the journals are only available on commercial basis for which to pay and use the required amount, and for these journals, users have to pay for the view and if needed, per copy for the print also. UGC-INFONET and INDEST- Consortium are two major initiatives that have

come to the resecure of academic libraries so that they can provide to the needs of academia with reasonable subscription fee.

3.Types of E-Resources:

An e-database is an organised collection of information, of a particular subject or multidisciplinary subjects' areas. The information of an e-database can be searched and retrieved electronically. Contents include journals articles, newspapers articles, books reviews and conference proceedings, etc. e-databases usually updated on a daily, weekly, monthly or quarterly basis. Full text databases contain the whole content of an article such as citation information, text, illustrations, diagrams and tables. Bibliographic databases only contain citation information of an article, such as author name, journal title, publication date and page numbers.

- E-books
- E-Journals
- Aggregator
- Consortia
- E-reference sources
- E-Theses and Dissertation
- Online Database
- Websites

4.Advantages of E-Resources:

The reasons for actually embarking on the purchasing of electronic resources are generally accepted because of the ease of usability, readability, affordability and accessibility. The following are the advantages of e-resources.

1.Multi-access: A networked product can provide multiple points of access at multiple points in time and to multiple simultaneous users.

2.Speed: An electronic resource is lot quicker to browse or search, to extract information from, and to integrate that information into other material and to cross search or reference between different publications.

3.Functionality: E-resource will allow the user to approach the publications to analyze its content in new ways by click of the mouse on search mode.

4.Content: The e-resources can contain a vast amount of information, but more importunately the material can consist of mixed media i.e., images, video, audio, animation which could not be replaced in print.

5.Consortia Mode: The e-resources can be subscribed in a consortia format too thus cutting down the costs but reaping the same benefits.

6.Flexibility: Resources an evolved quickly i.e., they are not bound to any format, printer, and distribution network.

5. Features of E-resources: E-resources have some distinct features which differentiate them from traditional resources. E-resources on the Internet are further distinct by the nature of the information on the net itself. The features of 21st century information and media are:

- High compact storage
- Ease of reproduction, multiplication and manipulation and transmutation
- Contents can be very easily detached from its media or container
- Ease of migration of contents from one medium to another
- Hypertext and multimedia

6. Procurement Trends of E-resources:

Bellow are the new catching trends in acquiring e-resources:

- E-books are electronic versions of printed books that can be viewed on PC connected to the internet (available as print on microform, audio tape, video tapes, CD-ROM and Internet based interface)
- E-journals are electronic versions of print journals that can be viewed via the computer (they are available as online subscriptions, print + online subscription)
- E-books available as “chapter by chapter” basis that can be purchased based on the need.
- E-journals are available as “article-by-article” purchase, also based on the need.
- Available in formats like: Adobe PDF, Microsoft Reader.

7. Selection Process of E-resources:

Selection is not a new term to librarian and staff as they have been doing it since long back the libraries started acquiring printed material. However, libraries are now focusing to adopt e-resources information technology approaching towards the e-resources rather than printed material as technology developed. In fact, the emergence of Internet particularly the www has a triggered proliferation of web based full text online resources as a new media of information delivery. As the web has grown, not just in popularity and use, but also on content, librarians are trying to meet the needs of the user and identify new resources, such as online database, web-based resources, collections in digital library, e-books, e-journals etc.

The selection process should be done in relevant with demands of the users, committee, focus group, user's recommendation etc. Apart from this, it should take into consideration the following steps:

- To identify library needs.
- To identify content and scope of the resources.
- To evaluate quality of that particular resource and search capabilities.
- To estimate the cost.
- To check either subscription based or web based when acquiring.
- To evaluate the systems and technical support.
- To review licencing agreements.
- To evaluate application software and installation, updated sporadically or in regular schedule.
- To check the facilities for educational support and training.

8. E-resources collection Development:

Collection development is the selection, acquisition and processing of library materials in varied formats, meant for user's current needs and their future requirements. The process of planning, selecting, acquiring, a balanced collection of library materials in a variety of electronic formats such as e-books, e-journals, media and online resources.

The steps of E-resources Collection Development

- Selection and deselection of current and retrospective e-resources based on user needs.
- Planning strategies for continuing acquisition of e-resources looking into financial constraints and their use.
- Evaluation of e-resources collections to determine how it serves users need.

9.Application of E-resources:

- Identification and loans of the print and non-print materials are easily tackled through barcode technologies.
- Library operation such as acquisition, serial control, cataloguing, maintenance of stack, documentation, information retrieval resources sharing, library management, library budget and finance control.
- It gives ability to cope with the increased workload and control over the in-house activities efficiently accurately, cost, time and space effective.
- Provide networking and liaison with the other libraries which helps to the resources sharing among the library and information centres.
- To achieve full advantage of technologies, all housekeeping operations of a library need to be computerised along with conversion of existing bibliographic databases to computer readable form.
- Primarily hots a user-friendly interface for browsing library database online (OPAC), replacing the old card cataloguing of the library. Most of the library automation systems are now providing web enabled online catalogue (Web OPAC).
- Other operations and services which are automated include checking out (browsing), tracking inter library loan of books etc. (circulation), procurement (ordering, receiving, accessing and payments of bills) of books.
- Acquisition, cataloguing, classifying, and indexing of books, acquisitions of journals, loose issue and bound volume management (serials) and generating all types of report.
- Faster communication and information retrieval, research results, new innovation are communicated speedily to the end users.
- Dissemination of information is very fast. Dissemination of information and delivery of documents speedily to users at remote place.
- Access to unlimited information resources accurately, efficiently and with update information at their own place.
- Access to electronic publication is easily possible.
- Database developments and their sharing of intranets (LAN, WAN) and Internet and access to websites etc. are easily available.

10.Conclusion:

College libraries in India are facing challenges due to cut budget, reduced staff, devaluation of rupee, steep hike in conversion of foreign currencies, and escalation in cost of publication. The college libraries are finding it difficult to buy required number of books and periodicals. E- resources are creating a revolution in college libraries. E-resources will help educational institutions in fulfil their mission into reality.

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Gender Sensitization : A Stanchion for Feminist Emancipation and Empowerment

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Abstract:

The classification of males and females (aggregate population) from the social context is done on certain parameters out of which the most familiar one is masculine and feminine. This classification is termed as gender. Gender is basically a parameter of sex that in hocks its own modeling applied to a varied social organization such as family, academic institutions, workplace and norms. This gender discrimination has been a major issue hindering the social development of the nation since ages. Gender inequality is still prevailing in our country in almost all terrains across the globe. Gender sensitization is an effort to transform the behavior of the society as a whole. It directs efforts towards augmenting realization of gender equality and abolishment of discrimination and its impact in our country. Gender sensitization does not aim to highlighting one gender as paltry, tripling or rueful. It has a direct relationship with an individual's growth and development which eventually leads to economic prosperity. In a male dominated country like India, Gender sensitization is the need of the hour. India is endorsed with awful gender discrimination. For the standard evolution of an independent person gender sensitization plays a crucial role. The juveniles should be made conscious and sensitive towards gender discrimination prevailing in the society through gender sensitization. Gender sensitization has now come up as a storm to uplift the position of the pitting gender in society. Various educational institutions play a dominant role for promoting factors of gender sensitization. Gender sensitization is an attempt to wipe off inequalities among males and females. It includes gender discrimination, which is pivoted to the women in our country. This research paper is an attempt to highlight the need for gender sensitization for fabricating the perception of the society towards gender inequality.

Key Words: Gender sensitization, Educational institutions, Discrimination, Gender inequality.

Introduction:

Our society has led to the construction of gender biasness; this society is made up of family members, places of worship, academic establishments, standards and credence. Reforming this behavior of the whole society is called as gender sensitization. The above social institutions are responsible for creating gender, which is unlike sex, having a shapeless characteristic. With changing time and context, gender is subjected to reforms. Hence, from context to context, sexual characters and roles undergo multiple transformations. The parameter of gender stratification is historical and was considered unique in the history of India. The crucial process of socialization is now being adopted in educational institutions by teachers, which helps them to teach the children their gender and is delivered to the society. This process is referred to 'Gendering'.

There are multiple dominant groups in our Indian society which allocate roles, set expectations and dispense opportunities to males and females in order to construct gender. For instance, girls should often play with toys like Barbie dolls, kitchen sets and should develop the desire to dress up like women (wearing saris) according to their gender. On the contrary, boys are subjected to playing with cars, balls, guns. This is a purely a societal stereotype. Such stereotypes are also being promoted by the media industry. The media industry telecasts

animated series which delivers the same notion for children. For instance, an animated adventurous series named Chhota Bheem is a story that revolves around a boy Bheem and his friends. The story portrays the princess of the village Indumati, as a soft girl on the contrary spotlights Bheem as a strong boy who directs his efforts to protect the village from evil people. There is a character named Chutki in the series that is equally engaging and active like Bheem, Raju and other boys, but is portrayed as fragile and soft. The impact of such series is drastic and affects the psychological mindset of kids. The series highlights boys as fighters and protectors whereas lenses girls as soft and delicate.

The societal construction of gender is based on political field of vision; this vision is hinged on binary division called masculine and feminine. Unfortunately, this division is customary division on the basis of which an individual is weighed up superior, when juxtaposed to others. Gender sensitization pivots lens on measures that help in inaugurating empathy in the thoughts that a person beholds about one sex as compared to other. It attempts to change perspective of the society by sowing the seeds of respect and honor among the individuals of the society irrespective of their sex. Gender sensitization aims at transforming the thoughts and views which arise in an individual's mind. It initiates efforts for making the society, comprising of males and females familiar with each other's individual perseverance. In a country like India, where prevails unity in diversity is purely a male dominated society. Even now our society is symbolized by supremacy of males in the clan (family) and females as house wives, financially leaning on males. Our social system is a patriarchy, where the males in the family are privileged with superior powers. They have powers to make all decisions within or outside the family. On the contrary, our society consists of females which are classical victims and are treated as inferior to masculine. In India, as soon as a female child takes birth gender biasness and gender inequality embarks. This discrimination with female victims continues throughout the journey of her life. Gender biasness amongst males and females in our Indian culture is reflected in multiple areas like nutritional access, educational facilities, workplace, etc.

With changing time and context, we remark great deal of diversity in Indian society with respect to their status and rights of women. However, these changes are negligible hence, cannot transform the viewpoint of the entire society. Presently, our Indian society trends to be a male dominated patriarchal society. Women are still given inferior status as compared to males in almost all fields. In order to bring gender equality and abolish discrimination among men and women, it is important to curtail the mindset of people combined with their mental makeup.

Review Literature:

- 1. Sankar Basak, 2017, Empowering Women Through Gender Sensitization, North Asian International Research Journal of Social Science & Humanities (NAIRJSSH), Volume-3, Issue-10**

The researcher has highlighted gender inequality as a problem which is long lasting through his paper. His aim is to explain the awareness of gender sensitization through educational institution. The paper has thrown insight on various strategies to promote gender sensitization.

- 2. Dr. Maitreyee Roy, 2017, Gender Sensitization: A Pillar To Sustainable Development, International Journal of Current Research, 9 (09), 56906-56910**

With the help of this paper, the researcher has highlighted discrimination against women which are subjected to high poverty and lower standard of living. The study concludes that the

mindset of the society can be changed through educational institutions. It is not important to recognize individuals on the basis of their sexes (male and female).

3. Rajshree, 2016, Gender Sensitization – Equality of Opportunity In Indian Context, Indian Journal Of Research (IJR), Volume:5, Issue:10

The study examines the role of education sector in eliminating gender inequality and gender discrimination. The researcher has tried to bring awareness among people about gender equality through various legal systems and constitutional provisions. The aim of the research is to analyze the role of women in the past and compare it with their present roles.

4. Dr. (Smt.) Rajeshwar.M.Shettar, 2015, A Study On Issues And Challenges Of Women Empowerment In India, Journal of Business and Management (IOSR - JBM), Volume 17, Issue 4, PP13-19

The researcher has attempted to analyze the status of women empowerment in India. The study highlights the issues and challenges of women empowerment. The study reveals that women of India are relatively disempowered and are given a lower status as compared to men. Despite of governmental measures undertaken towards equality between men and women, it is found that unequal gender norms continue in society.

5. Dr. T. Rama Devi, 2017, Gender Equality: Women Empowerment, Global Journal for Research Analysis (GGRA), Volume-6, Issue-9, ISSN NO.2277-8160.

The objective of the researcher is to understand the level of equality among girls and boys at various levels of education. To know the role of women in economic development of the country, the study has helped in analysis of gender equality and women empowerment in political fields, in terms of participation and opportunity.

Research Methodology:

As the paper is descriptive in nature and studies the status of women in the society data has been collected from secondary sources like journals, E- magazines and various other publications.

Need For Gender Sensitization:

Till today, we observe in many families, female kids are the centre of attention and girls are subjected to exteriority. In marketing field, jobs are offered to males and the females are not considered physically fit for the same jobs. Even at regular meals at home, food is served primarily served to males and the left over is consumed by females. In our country like India, women are given a status below men. Vulnerable practices like burning the females, torturing them physically and mentally is customary. Dowry system which is symbolized as a taboo still prevails in the heart of India. The literacy rate continues to remain truncated in contrast to that of males in our country.

Feminist Emancipation And Empowerment Measures:

We observe the existence of psychological barriers prevalent in our country, responsible for socio economic inequality. Few initiatives and strategies can be adopted to promote gender sensitization.

1. Boosting the rate of literacy among women through centers of women studies set up by UGC.
2. Educate the society about women's empowerment and their role in the economic development and growth through seminars.
3. Girls should be availed with specific platforms to interact in democratic ways which would help them to build up negotiation skill.

4. Women who reside in remote areas with limited mobility should be trained through effective training programs.
5. Encouraging co-curricular activities like role plays, dramas, street shows, etc in order to inculcate ethical and moral values in children from childhood.
6. Girls should be made aware of their roles, abilities and hidden talents through seminars and workshops.
7. The capacity of organizations that patron to wipe out gender inequality, advocate women empowerment and make initiatives to combat gender based violence should be strengthened.
8. Training programs should be organized for female students to direct them how they can rig out themselves to face a high yielding career in life.
9. Spreading awareness among women about their rights is insufficient; the direction to assess this justice will enhance gender equality.
10. The males of the family should share the burden of females performing dual responsibilities in order to set an example for future generations.

Challenges of 21st Century Women:

In this current scenario of globalization and modernization, it is heart wrenching to observe that women are being treated as a commodity. Still women and girls carry fear with respect to their safety while mobilizing or even traveling late nights. Girls at the time of birth are still considered as burden on the family. They are being treated brutally, and being exercised as a material, due to which gender sensitization is the need of the hour. The male and female of the family are employed but still it is always expected from the female to perform the household chores after returning back from work and the male takes rest after returning. It is evident that the females have given up their career for parenting, especially nuclear family holders. This awareness will lead to a humongous change at national and international level leading to women empowerment. The mobility of females is restricted many a time due to which her promotions are hampered. If unfortunately the child in the family gets spoilt in bad company, uses abusive language or is found doing wrong activities it is his or her mother which is held responsible for such upbringing.

Conclusion:

The above discussion highlights that the status of women in our country has gigantically improved but still gender sensitization is very much needed to transform the point of view of our rigid and patriarchal society. It can be concluded that the socio economic well being and development of the society is dependent on both the genders equally. The authentication of human existence will be damaged if there is an imbalance or deviation on the basis of gender with respect to parameters like health, safety, nutrition, education, birthrate, etc. We should strive with the objective to fabricate this society from a rigid to sensitive and rational place to live in. It is crucial for all of us to direct uninterrupted endeavors in transforming this society. Only then, this society would be a better place to live where the males and females respect each other and would appreciate each other's feelings. When the society avoids weighing boon and bane against each other's gender, women will be at fore front. In order to enjoy a good social environment, leading to quality of material life, now and for future generations, it is important to connote women empowerment with economic empowerment.

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The Changing Role of 21st Century Librarians in the Digital Era

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Abstract:-

The role of the librarian has changed in the age of digital libraries. Therefore, it is advisable for the library to acquire the new skills required to develop and manage a digital library. Libraries and information professionals need to acquire such knowledge and skills as the library is a high service business affecting IT. The aim is to empower libraries and information professionals with IT skills to provide the services expected from customers in a new environment. In this paper show the Feature of the 21st century, the 21st century librarian, Electronic Library-Digital Library, Advantage and Disadvantages of Digital Library and Changing Role of Library Professional in Digital Age.

Keywords: -21st Century, IT, Electronic Library – Digital Library

Introduction:-

A library is more than a building. According to Matthew Battles quotations, this is a way to access and rearrange knowledge and other cultural resources. Sometimes a new building will be the most appropriate way to deliver a new range of library services, but not always. Books, information, electronic access to education and new configurations of related services can be distributed in many ways and through different media.

Feature of the 21st century:

The 21st century is the millennium of information. This is also seen as the era of explosion of information output and information sources. This is known as the beginning of the age of knowledge. New patterns of work and new business methods have evolved; New types of work with new and different skills are required. The meaning of knowledge has changed in this century. Knowledge is no longer stored in the minds of experts, presented in books and categorized into subjects. It's now in the form of energy like networks and flow systems - something that does something or makes things happen. In the age of knowledge stability is given, stability is not given. Workers in the knowledge age group need to quickly discover, evaluate, and represent new information. This is what they need to tell others. They need to be adaptable, creative and innovative and be able to understand things as systems or big picture levels. In the 21st century educational library, defined the role of the library after the rise of ICT. Printed information is no longer sufficient to store information. CDROM databases, electronic document delivery, automated catalogs, circulatory systems, and online information retrieval (OPAC) have become the order of the day.

The 21st century librarian:

As the traditional custodian of information, librarians in the 21st century need to be aware of these significant changes and as such employ their technological knowhow and intellectual masterpiece in order to retain the leading role of the academic libraries in supporting teaching, learning and research. This means that the 21st century librarian will have to be armed with competent skills that will enhance the provision of effective library services to meet client's changing information needs. Literature abound on the competencies and skills needed for the 21st century library professional. Tennant (1999) identifies important personal traits : the capacity to learn constantly and quickly; flexibility; innate skepticism; propensity to take risks; abiding public service perspective; good interpersonal skills; skill at enabling and fostering change; and capacity for and desire to work independently. Omekwu (2003), mentions basic knowledge of computers and their capabilities; Competency with search engines; internet facilities; e-mail; internet navigator tools, web browsers and web file formats; database software; internet development and management know-how. Also, some of the 21st century skills according to Krishnan (2011) include communication and collaboration, creativity and innovation, critical thinking and problem solving, media literacy, ICT literacy, flexibility and adaptability. The skills aforementioned are familiar with us; the challenge is how to harness these skills for effective library services.

Electronic Library – Digital Library:

The digital library is not only the digitization of physical resources but also the thoughtful institution of electronic collection for better access. Such an organization provides consistency based on a large amount of shared knowledge. It is basically about a digital library organization and access to large information stores. In all likelihood, digital libraries are likely to augment traditional libraries such as online card catalog augments instead of drastically changing book collections. This is because digital media can be better than finding and physical medium is better for reading. Let us learn about the skills needed to create a digital library and digital collection. According to Wiederhold, "Digital libraries are popularly viewed as electronic versions of storage libraries in digital form, which allow direct communication content to be retrieved and copied from the master version." "A digital library is an integrated technology and information resource that breaks down the physical barrier between resources, allowing remote access." Vinensky saw that 'the digital library will be a collection of distributed information services, manufacturers will make them available and customers will find them through automated agents.'

Advantage of Digital Library:

Digital libraries have some features that are different from traditional libraries. It has a comprehensive and accurate search system for a wide range of text, image and audio-video resources. Collective reading does not require physical space in a digital library and can be accessed anywhere, anytime. Different people can access the same source at the same time.

The benefits of digital libraries are mentioned below:

- Save the rare and exclusive collection of valuable documents, libraries, archives and museums.
- Provide quick access to library holdings around the world via a worldwide automated catalog.
- Scholars help find both physical and digitized versions of scholarly articles and books through a single interface.

- Search of the Internet, creating professional databases and library archives.
- Learning to offer an online learning environment. Shortening the chain from author to user.
- Preparation conservation costs save space and money.
- Technology Digital technology caters to multiple, simultaneous users of the same origin that is not possible for any other type of archived content.

Disadvantage of Digital Library:

New technology has brought many advantages but simultaneously it also has certain disadvantage

- expensive
- equipment obsolescence (Hardware & Software)
- Storage media relate Matter
- authority of data creators and publishers
- qualified manpower
- User learning and training

Changing Role of Library Professional in Digital Age:

The availability of information on the Internet, and its widespread use, presents librarians with opportunities rather than a threat. Technology survey users understand that they need the help of people in the library. New trends in information access now cause librarians to face difficulties and complex challenges. In today's world of technology / internet the information business is changing so the professionals have to change themselves. Information experts will now have to act as e-information resources in which various business groups are expected to formulate, manage, maintain and service information strategies. Information professionals need to: **Librarian**- In addition to being a library manager, he also works as a compiler developer, technical processor, etc., taking care of the quality of information. **Information Officer** - Users need to know how to manage and deliver the right information services to meet their information needs. **Information Advisor / Trainer** - Make sure the user / staff knows how to access the relevant sources of information (literacy). **Systems and Networking** - Develop and design the right systems for the distribution of information to their users.

Skills, knowledge, ability required for LIS professionals:

The basic goal of the library and information business is always to make information available to those who need it. Actions that are aware of this goal have evolved over the years. This includes - the need for available technology and developing information organization. Information activities were guided by developments in the areas of storage, presentation and storage of knowledge, collection development and organization of knowledge, information blasting and computer in information retrieval. Librarians and information professionals are involved in collecting, storing, retrieving and disseminating information on the one hand, and computer specialists on the other, who assist libraries and information professionals in this endeavor. For the successful implementation of the digital library, LIS professionals need to be trained and have the necessary knowledge and skills.

- Information resources (books, journals, magazines, e- resources etc.)
- Technological facilities and resources (computer, online catalogues, websites, LANs file servers etc.)

- Budget, Human resources (Skills for non teaching Staff training)
- **Competencies that required to possess in LIS professional:**
 - Provide best quality service.
 - Knowledge of user interaction with information resources.
 - Flexible and smoothly.
 - Posses excellent communication skills, constantly update personal knowledge base by keeping in touch with the latest development
 - Create awareness among the users, make them accept the changes
- **Technical Knowledge required:**
 - Information Retrieval software for online, and Internet.
 - Operating systems
 - Library software packages, acquaintances with Digital Library Tools.
 - World processing, Graphics, Spread sheet & Presentations.
 - Database Management Systems including the skills in Bibliographic Database Management Systems, General purpose programming, Networking
 - Web page Development and Content Management

Conclusion:

As traditional custodians of information, librarians need to be aware of the implications of these changes and develop technological and managerial skills, which will enable them to make effective use of information and to meet their organizations changing information need.

The rise of information and communication technology has changed a pattern for libraries. ICT has enhanced access, research and communication. This means that it has become a useful tool in libraries aimed at supporting teaching, learning and research. At the same time, 21st century professional librarians are expected to take advantage of the opportunities offered by ICT to make libraries more relevant to the 21st century and a hub for information provision, creation and dissemination. The digital age has revolutionized the way information is stored and accessed. This has changed the concept of librarians and their services. Many new terms e.g. Digital libraries, virtual libraries are emerging to describe the libraries of the digital age.

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Impact of Covid 19 on Health Care Tourism in India

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Abstract:

When the Indian government made strict rules for lockdown, to restrain the increasing number of covid-19 cases in March 2019 everything simply had to shut down. With every nation closing down their borders to avoid the corona virus crisis, the Indian Healthcare tourism faced a huge setback. It's a same story on the global level. The clinical travel industry market, is up to \$87.5 billion (£70 billion, €77 billion) yearly, is contemplated to decrease until 2021 as patients stay away from superfluous travel. Yet, we trust that the tremendous help from the ruling party for the medical services industry, combined with its fast reaction to the crisis, could help India in faster recovery. The goal is to find out the various effect of covid 19 on healthcare tourism.

Keywords: Covid 19, healthcare tourism, clinical Travel, pandemic, vacationers,

Introduction:

It is not surprising though that the largest democracy has risen up as an innovator, as a leader in the ongoing crisis. With its commitment towards scientific and logical exploration encompassing the novel Covid 19 virus and the advancement of top-notch antibodies provided. India is developing better counteraction techniques for this crisis. Also, its highly significant to note that, majority of these are made in Maharashtra.

Objectives:

1. To find out effects of covid on Health-care tourism in India.
2. To find out what India can do to Bboost Healthcare tourism.
3. To study how India can benefit from healthcare tourism post covid.

Research Methodology:

The significant information from different sources from scholarly to proficient organizations, some of them from valuable Government reports, review information, Govt. yearly and exploration reports, Government and non-government associations, visit administrators' examination, offices' reports and papers. Updates from the time of beginning of COVID-19 pandemic January, 2020. This information was fastidiously looked into continually. The exploration diagram included definite record audits accessible in open space. This is illustrative examination. The examination has gathered and thought about information up to July, 2020.

Effect on healthcare tourism industry:

According to article written by Dia Rekhi and Akshata M in Economic Times, "Before covid about approximately 80% of international medical travel was diverted to Chennai. Emergency clinics in Chennai, Bengaluru, Hyderabad and Kochi that relied on guests from abroad who consolidated treatment with the travelling and endured a huge dip in incomes from this segment. Chennai, known for being home to various super specialty medical clinics and centers always captured a large part of guests coming from abroad. Along with India many thriving countries were affected by coronavirus.

Helping India to rise after covid:

When India came under the wheels of covid 19, initially everyone panicked. But India took a plunge and started manufacturing its own vaccine instead of getting it from other countries. This proves that genetic sciences and technologies in India have developed to a great extent. The Indian assistance driven industry design and has everything related to the requirement the patients will require in the post-pandemic time. The lesson learnt after the pandemic is that everybody has to priorities self-evaluation and self-care. The facts really confirm that the clinical business was tremendously disrupted by covid. Notwithstanding, the industry is consistently developing again at a lot higher speed as many patients are still waiting in que for their treatment which they cannot afford in their country. These patients could be needing kidney Liver or heart transplant etc.

Boosting healthcare:

As per Prof Ravi Mehrotra., we need to advance our predominant offices of our critical facilities, to bring them on level the created countries and at essentially moderate expense of 10-20 percent of other nations. The Vaccine was developed by us at discretion, we not only have to educate high commissions in different nations, we ought to have clinical travel industry strategy also, it is a potential income generator and an altruism worker too. Thirdly, there should be some public private association between emergency clinics for giving clinical treatment. This is on the grounds that there are a few government emergency clinics who are at level with private clinics

India to benefit from healthcare tourism post covid:

Prahlad Singh Patel while addressing a meeting on 'Resuscitating the focus on areas, post-Coronavirus recuperation for India' at ASSOCHAM's virtual gathering. India saw around 6.97 lakh patients on a clinical visa in 2019. This records for 6.9% of all out-vacationer appearances, as the assessments projected. India, because of its legendary knowledge of Ayurveda and wellness treatments, could profit gigantically from clinical travel industry as the world progressively recuperates from Coronavirus pandemic. The manner in which Prime Minister Narendra Modi drove government handled Covid emergency has given India new face on the global level.

Government Support a Necessity:

Indian Healthcare tourism is in its developing stage it has huge potential, as per quoted by Joint MD Sangita Reddy Apollo Hospitals Group. According to Niti Aayog medical travel is a major-booster, has contributed majorly to our forex income". Clinical travel industry area needs government backing to recover financially. "For instance, Malaysian government initiative succeeded in welcoming few patients from Brunei for open-heart medical procedure. Likewise, in India, requirement for government backing guarantees that clinical travel sector worth in India recovers financially. Government's help is necessary in maintaining the format of clinical travel industry for which India is known. India has invested in creating the whole healthcare tourism experience which includes associating aircrafts and inns with medical clinics. Various Medical packages given by Indian medical clinics consists of different forte.

Healthcare tourism increasing as Covid decreases:

In India healthcare tourism had been consistently developing. While the business hasn't unveiled information on global patients who showed up for therapy. Most emergency clinics said

they didn't see the typical surge of worldwide. "Earlier this year worldwide patients dropped considerably, now this year they are rising again. The ordinary surge is as yet not there. In our clinic sees around 10-15% unfamiliar patients annually, which is presently pretty much as decreases 2-3%, however patients have begun coming in,". Also, people coming to India for their surgeries, of now are those requiring basic consideration. "These are on the whole patients who require constant monitoring. By July basic patients began streaming in. visiting for selective methods like putting muscular inserts, in any case, has disappeared totally," Maximum people requiring healthcare services are from Asian and African. It will require some investment before things really return to ordinary.

Results and Findings:

Before the covid 19 era huge multitude of patients seeking minor medicines to broad medical procedures flew to India from around the globe in the hope of getting the required help. Inquisitively, significant number of these were from advanced nations. A significant number of these fliers showed up with the expectation that our primary care physicians would **to** sort out their medical issues. The reason being either these people did not get accurate treatment because of affordability issues. From a positive angle greater part flew back with positive outcomes. This marvel has been going on for some time, because of mouth-to-mouth publicity. Indeed, huge organizations are currently helping patients from abroad to understand their health-related crises.

Conclusion:

Healthcare tourism is the quickest developing industry on the global level. Sickness is rising, there is dearth of experienced specialists and medical framework. India is home to specialists who are undeniably more knowledgeable and provide complex treatment and any unique cases they receive. Indian paramedics are famous for their specialty everywhere. They are yearly selected by different nations to fill their lack of clinical staff. People have always been attracted to India for its rich and varied heritage. These foreign arrivals have given a uplift to our tourism sector. Accomplishment in smothering the infection, and significantly carrying out and thorough testing and following is now demonstrating significant business advancement. "Ultimately, the destiny of clinical travel industry will be controlled by ramifications which are outside the area's control. The governments have overseen medical services and passing rates "not just gives consolation to explorers while choosing an objective in the post-pandemic time, yet in addition shows demonstrated Coronavirus related ability, learnings, and limits ought to there be flowing increases for contamination rates whenever travel is staged back. While the air-courses coming back from its hibernation, patience and time is needed attain its earlier footing. As the global situation slowly awakens, people have realized the virtues of cost cutting. India has superior and high-quality care; India will surely see upgradations in these sector.

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A Study on Customer's Perception of E-Banking Usage During Covid 19

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Abstract:

E-banking is always popular especially among the young generation due to its convenience and flexibility. However, with Covid 19 pandemic, its importance was understood by almost every section of society. Banks also developed online banking tools and services rapidly to provide speedy and reliable services to their customers. However, the main problematic area for the banks is its large number of customers are not ready to use the E-services offered even during a pandemic. In some cases, the reasons are poor IT knowledge, old age, unwillingness to adopt the new technology, trust issues, also dissatisfaction on the part of customers to use the services offered through internet banking. Hence it is very much important to understand the customer's point of view regarding the usage of E-banking services which can help banks to sustain competitive advantages. Therefore, the purpose of this research is to study the perception of the customers on E-banking usage.

Keywords: Online Banking, Covid 19, Customers Perception, Usage of E-banking services

1) Introduction:

Online banking, also known as internet banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system will typically connect to or be part of the core banking system operated by a bank to provide customers access to banking services in place of traditional branch banking. Online banking significantly reduces the banks' operating cost by reducing reliance on a branch network and offers greater convenience to customers in time-saving in coming to a branch and the convenience of being able to perform banking transactions even when branches are closed. ("Online Banking," 2021) The Indian Government has announced lockdown from March 2020 to August 2020 to safeguard the citizens against the Covid 19 situation. As a part of safety measures, government requested people to restrict their movements and also spent time at home as much as possible to avoid physical contacts with outsiders. Due to this most of the business sector and service sector were affected. Banks as a part of essential services were allowed to operate, but people cannot come out of their homes to do the banking transactions. Hence the only solution in this difficult situation is to boost online banking services. Banks encouraged their customers to use these services more and more. They help them to understand the benefits of online banking. Benefits such as ease of completing the transaction, access to any information at any time, 24/7 customer care support, etc. The effect of this is, the use of e-banking services has increased to a larger extent. The banks were more focused on online banking to provide greater experience and satisfaction to their customers.

This research paper aims to study the perception of the customer towards the usage of the online banks during the Covid 19 pandemic. It will help in understanding the need for web banking in times of social distancing and also expectations from the banking sector as a whole.

2) Review of Literature:

Covid 19 started spreading its legs in December 2019. The damage caused by it is not confined to only select pockets of businesses but it is a widespread malady that is expected to keep the economy sick for a longer time. While the magnitude of the impact may vary from sector to sector, some sectors have suffered the most and continue to suffer. The banking and financial sector is one of them.

A report on a survey conducted by IFC, World Bank Group (2020), studies the early impact of Covid 19 on financial institutions. It summarizes that those seven months from the outbreak of the COVID-19 pandemic, as most countries had begun easing the lockdown restrictions of the first months, IFC financial institution (FI) clients were still operating at about 80 percent of pre-crisis levels.

Bobade, P., Alex, A., (2020) studies the effect of Covid 19 on the Indian banking sector and how the RBI make necessary changes in their policies to give a helping hand to the banking sector. Further, the solution is proposed for the Indian Banking system to tackle the losses due to COVID- 19 Pandemic. The research found that the Indian Banking system has added various measures due to COVID-19 Pandemic to make the Banking system smooth and effective.

Hussaien et al., (2020) paper analyses the connection between service quality and customer satisfaction in the banking sector in Sri Lanka. The findings suggest that reliability and empathy have been the most important factors that have been influencing customer satisfaction during the COVID-19 period. Therefore, customers have been keener on the intangible, timely, and quality service provided by the bank rather than being mindful of the attractive, tangible physical presence of the banks during the COVID-19, which is reasonable.

Jadhav, A., (2020), studied the impact of Covid 19 on customer satisfaction towards e-banking services. The study reveals that Covid—19 has undoubtedly affected the banking sector and customers. Convenience, speedy process, time-saving, easy access, quick information, and 24/7 banking are the top reasons for using e-banking services. The most important benefits respondents availed from using e-banking services are easy money withdrawal, funds transfer, balance inquiry, and bill payment. Maximum numbers of respondents are satisfied with the complaint settlement system

Cherukur, R., Sivakumar, S., (2020), analyzed customer perception towards online banking during Covid 19 by examining factors affecting customer satisfaction through Independent T-Test and One-way Anova. It concluded that the changes are happening in the field of banking services during this pandemic. There is a need to create more awareness among the public and digital platform usage by the public can become a greater solution to the non-flexibility problems.

Ganeshan, P., Meena, R., (2020) studied the customers' perception of the effectiveness of digital banking services during Covid 19. through correlation analysis, it is identified that there is a significant relationship between digital banking services and overall customer satisfaction. There are also many other studies covering the area of e-banking services, service quality, customer satisfaction, Loyalty measurements of internet banking facilities during this pandemic.

However, very few papers aim to study the actual usage of these e facilities offered by the banking sector by the customers. This paper aims to study and cover the same point.

3) Research Methodology:

A) Data Collection -

- a. Primary data: The first-hand information which is being collected by the researcher is called primary data. In this study, the primary data was collected through a structured questionnaire.
- b. Secondary data: Besides the primary data, secondary data was also collected for the study. Online Journals, Research Papers, Research Reports, Websites, books were referred for this purpose from the library to facilitate proper understanding of the study.

B) Data Collection Method –

Data was collected through a structured questionnaire that contains few multiple-choice questions. It was divided into various sections like demographic variables and variables related to the perception of the customers towards usage of E-Banking facility. For getting specific responses, the four-point Likert Scale was selected as the response mode for the questionnaire. For each of the measurements, the respondents are asked to tell whether and how strongly they agree or disagree. This is done by choosing a number given on a four-point scale. The responses can then be given scores e.g., from 1 to 4 as was done in this research.

C) Sampling -

A structured questionnaire was issued through google forms to the general public. The researcher employed survey techniques to collect the data. A total of 87 responses were received and 72 were deemed usable for further analysis and the remaining 15 being incomplete were not considered. The data collected from the source is exported as Excel (.csv file) and analyzed using Statistical Package for Social Science (SPSS 23.0).

D) Objectives -

1. To Study the Customer's perception towards the usage of E-Banking facility during Covid 19.
2. To Understand the Customer Satisfaction towards the E-Banking services during Covid 19.

4) Analysis & Interpretation:

a) Demographic Analysis:

The surveyed bank account holders had a larger ratio of females (59.7%) as compared to males (40.3%). Most of them are young adults (48.6%) with an age range from 18 to 30 years, followed by the respondents (38.9%) with an age range from 46 years to 60 years. The least (2.8%) were in the age range of 61 years and above. The Education level is mostly graduate (44.4%) followed by Postgraduate (31.9%) and Professional (16.7%). The

Annual Income with less than Rs. 3 Lacs were around 47.2% which shows that they are working on low wage rate in the private sector. It is followed by respondents (27.8%) with income ranging from Rs. 3 Lacs to 5 Lacs. The least of them (11.1%) fall under income level with more than Rs. 10 Lacs. More than half of the respondents (56.9%) are from the private sector, followed by self-employed (27.8%). The least were retired (2.8%) in the sample. Almost 58.3% of respondents are having an account in private sector banks and 41.7% in public sector banks. Most of the bank account holders are having savings account (95.8%) with good IT knowledge (65.3%). Very few of the respondents (5.6%) are with poor IT knowledge must be due to age factor. Major respondents (48.6%) used E-banking 1 to 2 times in a week before the

Covid 19 pandemic, followed by 30.6% of them used it 3 to 5 times in a week. However, there is a shift in this percentage after Covid 19. Almost 77.8% of respondents started using E-banking facilities more than 3 times up to 8 times every week.

b) Descriptive Statistics: TABLE 1

Variables	Mean	Standard Deviation	N
E Banking is useful & Cost & Time saving	3.38	0.911	72
The website is simple to use	3.28	0.843	72
Security of financial information on the website	2.96	0.911	72
Bank website is well organized & updated	3.10	0.952	72
Availability and promptness of customer care	2.71	1.027	72
Satisfaction with bank's online services	3.01	0.942	72

Table 1 indicated the total response of sampling. After collecting the data, analysis shows that the usefulness and the cost and time effectiveness as an independent variable is 3.38, and regarding these variable respondents deviate from their mean equal to 0.911. It shows that the respondents are strongly agreeing that the E-banking platform certainly proves useful and cost and time saving during this pandemic.

The Simplicity of banking websites as an independent variable is 3.28, and regarding these variable respondents deviate from their mean equal to 0.843. It shows that the respondents are strongly agreeing that the website or digital platform of their bank is simple to use.

Security of personal and financial information on websites as an independent variable is 2.96, and regarding these variable respondents deviate from their mean equal to 0.911. It means they are agreeing to the variable that their information is secure on banks' digital platforms. Though they are not strongly agreeing to this means there is some hesitancy regarding this. It may be possible that respondents do not fully understand the security policies of the banks.

The Updation and organization of bank website as an independent variable is 3.10, and regarding these variable respondents deviate from their mean equal to 0.952. It shows that the respondents are strongly agreeing that their banks' website is well organized and updated from time to time according to the requirement.

Availability and promptness of customer care as an independent variable is 2.71, and regarding these variable respondents deviate from their mean equal to 1.027. It means they are agreeing to the variable that the customer care department of the bank is prompt in answering the questions or queries raised by the respondents. Also, they are available at any time 24/7 for the service of the customers.

Satisfaction with bank's online services as an independent variable is 3.01, and regarding these variable respondents deviate from their mean equal to 0.942. It shows that the respondents are strongly agreeing that they are satisfied with their banks' online services during this pandemic.

5) Conclusion:

The study reveals that Covid—19 has undoubtedly affected the banking sector and customers. The usage of conventional banking declined to a greater extent due to lockdown. Even though banks were working as a part of essential services, customers were unwilling to go to the bank personally. Hence in this era of lockdown, social distancing, etc. E-banking proved to be a boon to the banks and also its customers. Convenience, speedy process, time-saving, easy access, quick information, and 24/7 banking are some of the major reasons for using e-banking services.

The present study evidence that customers were highly satisfied with E-banking services during the Covid lockdown period. Without entering the bank branches the customers prefer to do all banking transactions at the convenience of their homes. Banking websites are mostly becoming user-friendly, simple to understand and operate. They are well organized and updated as per the requirements of the customers. Even though there are some doubts relating to the security of personal and financial information on bank portals, most of the customers trust that their banks will take all necessary precautions to safeguard this information. The customer care department proved the most useful during this period as most of the time they are not only prompt in answering the doubts and queries of the customers but also, they are available 24/7 for their services.

To sum up, customers are satisfied with the bank's online services during Covid 19. There is no doubt, the opportunities in e-banking are immense but the only need is to explore them. The nature of banking services may still be the same but the way they are being offered has been changed dramatically. Today, most banks do try to understand and solve the difficulties faced by consumers using these services. But there is still a long way to go.

The present study represents the customer's perception of the usage of digital banking services during the covid-19 lockdown period. Future research may be the focus on digital banking services in the covid 19 highly affected areas.

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Climate Change in Covid-19 and India

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Abstract:

The environment is the total unit of all those physical, chemical, and biological factors that affect an organism or an ecosystem's population and determine their form, life, and survival. There are many environmental problems in India. Climate change, air pollution, water pollution, garbage, and pollution of the natural environment are challenges for India.

In general, climate refers to the average weather over a long period of time in a given area. Therefore, when there is a change in the average weather of a particular region, it is called climate change. Climate change can be felt in a particular place as well as all over the world. If we talk in the present context, then its effect is being seen almost all over the world.

India's carbon emissions have dropped by 15.4 percent in the lockdown. The fall in the level of carbon dioxide in the world due to the lockdown has broken all the previous records. The first half of 2020 saw a sharp decline in global carbon emissions. It has been learned that there was a decline of 8.8 percent in carbon emissions in the first six months of 2020 compared to 2019. From the perspective of climate change, this is very good news. The subject of the research paper has been chosen for research with the aim of studying the impact of Covid-19 on the Environment, Searching the current situation of climate change in the world, knowing about the impact of climate change on India and its causes.

Keywords: climate change, Environment, Covid-19, Lockdown

Data Collection Method Used for Research:

This research depends on secondary data like magazines, books, newspapers, reports, and websites.

The Objective of Research:

- 1) To study the impact of Covid-19 on the Environment.
- 2) To Search the current situation of climate change in the world.
- 3) To know about the impact of climate change on India.
- 4) To study the causes of climate change.

Introduction:

Malthus wrote that if the growing population is not controlled by self-restraint and artificial means, nature will try to control it with its cruel hands. Industrialization was given priority in the process of economic development. This industrialization requires water, coal, seeds, and other minerals. All these elements were taken from nature in large quantities. As a result, pollution started. If we consider today in the context of the environment around us, we will find that nature has started showing its anger. Water, air, land, sound, etc. The pollution in the area is causing environmental degradation. Large-scale pollution is seen due to factors such as smoke from large factories, fumes from sewage transport equipment, excessive use of chemicals, and various electrical equipment. In such pollution, the temperature of the earth is continuously increasing. Not only was this but there also a leak of the ozone layer. All this is adversely affecting the ecosystem.

India already has fewer rainy days in the year. It is said that on average it rains only 100 hours in a year. Now the number of rainy days is decreasing further, but the days of extreme rains are increasing. Climate change is affecting biodiversity; there are many organisms that are losing their fertility due to rising temperatures and increasing infertility. According to research, the coronavirus and its associated restrictions had forced about 390 crore people to stay in homes by April 2020. This had a huge impact on energy use, transport, industries, and trade. The study of 43 fruit flies (*Drosophila*) species published in the research showed that in the males of nearly half the species, lethal temperatures lead to infertility.

Today, the biggest crisis has arisen due to the greenhouse effect, due to which, along with the pollution of the atmosphere, there is a dreadful situation of increasing the temperature of the earth and the rise of seawater level. The greenhouse effect arises due to an increase in the number of gases like carbon dioxide, methane, chlorofluorocarbons (CFC), etc. in the atmosphere. At the time of re-radiation of Sun heat absorbed by the earth, this gas itself absorbs a large part of the heat and returns it back to the surface again, due to which the additional heat accumulation in the lower atmosphere of the earth increases the temperature of the earth.

The global average temperature for June this year was 0.88 degrees Celsius above the 20th-century average. Floods and landslides during the monsoon in India caused a loss of about Rs. 73,569 crore (\$1,000 million). At the same time, 2,067 people died due to this. Along with this, about 40 lakh people had to leave their homes due to this. Even today, renewable energy, green transport, reduction in fossil fuels, strict rules for industries, and changes in our routine can achieve these goals. The future of our children depends on us and we have to decide what kind of earth we will inherit them from tomorrow.

According to lead researcher Peter Alexander of the research, the environmental impact of pet food products was ignored for years, but it is true that it is having a huge impact on the environment and climate. It is the result of climate change that the floods and cyclonic storm that hit India last year were included in the list of the world's 10 most expensive disasters in 2020. There was a loss of about 1.70 lakh crores due to these two, although this estimate shows only the loss which is insured. If we talk about the actual loss, then it was many times more than this.

1.28 ° C was recorded in the increase in temperature in 2020. By the year 2100, the economies of all countries like India, America, Canada, Japan, New Zealand, Russia, and Britain will not remain untouched by the effects of climate change. Today Punjab is a potential source of pollution, for example, a small river named Budha Nulla which is from the Malwa region of Punjab, India, it flows through a densely populated area like Ludhiana district and then the Sutlej river, which is a tributary of Indus river, according to recent researches it has been indicated that once more Bhopal-like conditions are going to happen. Climate change will also have an impact on biodiversity. Any species needs time to adapt. It will die under the influence of adaptation to a sudden change in the environment.

The most impact of climate change will be on the vegetation of the marshy area found in the coastal areas of the sea, which along with providing stability to the coast, are also ideal places for breeding marine organisms. Swamp forests, also known as tidal forests, also serve to protect coastal areas from storm surges. According to the findings obtained from the research, the level of nitrous oxide in the atmosphere has increased by 20 percent compared to the pre-industrial period. While talking about the growth happening in it, it is growing at the rate of 2 percent every decade.

Climate Change in Covid-19 and India:

Rapidly increasing population and economic development and uncontrolled growth in urbanization and industrialization, large-scale industrial expansion and intensification, and destruction of forests are the main causes of environmental problems in India. A large amount of forest has been cut due to the construction of a big dam in the country. As per the National Forest Policy, at least 13% of the land should be forested. However, only 12.7% of the land in India is forested. Thousands of hectares of land got irritated due to development. Large power projects were built but on the other hand, forest resources were destroyed. Water resources have therefore not been linked to domestic or international violent conflict as previously predicted by some observers. Some possible exceptions to this include caste violence related to the water distribution of the Cauvery River and political tensions associated with it, with actual and potential populations displaced due to dam projects, especially such projects on the Narmada River.

Between 1998-2017, natural disasters caused by climate change have caused about \$ 3 trillion in damage all over the world. If we talk about India, there was a decline of 15.4 percent in carbon emissions between January and June in 2020 compared to 2019. This means there was a drop of 205.2 metric tonnes in carbon emissions during this period. The biggest reduction in carbon emissions during the lockdown period was recorded in April when emissions fell by 44.2%. Earlier in February, it had recorded a growth of 6.4 percent. Later, there was a decline of 16.9 percent in the month of March, 44.2 percent in April, 27.6 percent in May, and 15 percent in June.

Despite the La- Nina on record, 2020 was the warmest year ever, when the average temperature increase was at par with those of 2016 and 2019. If we look at the average increase in temperature during 2020, it was 1.28 °C higher than the pre-industrial period. Not only this, the last decade (2011 to 20) was the hottest decade in history so far. Scientists studying the Earth say that the temperature of the Earth is continuously increasing. Earth's temperature has increased by 1 degree Fahrenheit in the past 100 years. This change in Earth's temperature may be very small in numerical terms, but any such change can have a big impact on mankind. North Indian states are breaking all records in terms of rising heat and above normal temperature. That is when 2021 is the year of La-Nina. La-Nina is actually the current rising from the Pacific Ocean that helps in reducing the global temperature (compared to El-Nino), but Indian meteorologists say that global warming has caused the cooling effect of La-Nina has weakened.

According to a study by World Bank experts between 1995 and 2010, India is making the fastest progress in the world in addressing its environmental issues and improving the quality of its environment. Nevertheless, India has a long way to go to reach the level of countries with developed economies of similar environmental quality.

The report released today by the Indian Meteorological Department (IMD) revealed that 2020 was the eighth warmest year in Indian history. This year the temperature was recorded 0.29 degrees Celsius above normal. However, if we talk about the increase in global temperature, then the average temperature of 2020 was 1.2 degrees Celsius above normal. More than 1,500 people died across the country as a result of climate-related disasters. In this, more than 600 deaths were due to heavy rains, floods, and landslides during the monsoon. At the same time, 815 deaths occurred due to storms and lightning, while more than 150 lives were lost across the country due to the cold waves.

The Government of India is emphasizing on ambitious climate action to overcome the COVID-19 pandemic. India and Honduras are mutually cooperating in promoting the use of sustainable energy sources. National climate action plans attempt to reflect the expected progress of current policies in the following three areas: carbon emissions reduction, adaptation, and support. The Paris Agreement on climate change in 2015 had set a target of keeping the increase in temperature below 1.5 °C since pre-industrial times. However, the increase in global temperature has so far gone up to 1.2 °C. According to the research, the largest contributors to global nitrous oxide emissions are from East, South Asia, Africa and South America. Who are emitting it on a large scale? If we talk about synthetic fertilizers, then China, India and America have the biggest hand in it. Whereas Africa and South America continue to dominate in the form of manure made from cow dung. At the same time, if we talk about the increase in its emissions, then developing countries like Brazil, China and India are mainly responsible for this.

Some countries, due to the COVID-19 pandemic, will not be able to formulate their resolutions until early 2021. Among them are those developing countries that are supported by the UNDP and which are responsible for 22.5% of total global carbon emissions. The rise in temperature is drying up the soil moisture and turning the soil into dust, due to which the need for irrigation is also increasing. We already have information popping up about the loss of fertility at high temperatures in pigs, ostriches, fish, flowers, bees and even humans. If we look at the figures released by the United Nations for 2019, then in this year around 19 lakh cases of stillbirth were reported worldwide, out of which about 3.4 lakh cases were reported in India alone, which was the highest in the world. According to the report released on 8 October 2020, India and five other countries - Pakistan, Nigeria, Congo, China and Ethiopia together accounted for more than half of the world's stillbirths. 18% of stillbirth cases were reported in India alone.

When the population of a country increases, the number of industries increases according to its needs. As a solution to the housing problem, the expansion of cities increases, which leads to indiscriminate deforestation. On the pretext of establishing harmony between the distant cities, the use of vehicles increases a lot, due to which the problem of air pollution increases equally. In this way increasing population affects our environment. It is estimated that 60% of the cultivable land is prone to erosion, waterlogging and salinity. It is also estimated that between 4.7 and 12 billion tonnes of soil is lost annually to the top layer of soil due to erosion. Keeping in view the growing needs of the growing population, today the number of fuel, coal and petroleum based industries have increased.

The forest area in India is 18.34% (637,000 km) of its geographical area. Nearly half of the country's forests are found in Madhya Pradesh (20.7%) and seven northeastern states (25.7%); of these, the forests of the northeastern states are being destroyed rapidly. Apart from the greenhouse effect, another harmful consequence of industrialization has come to the fore, that of acid rain. Due to some industries, sulfur dioxide gases reach the atmosphere, which combine with atmospheric gases and turn into acid and then reach the earth with rain, giving rise to many biological diseases.

According to the United Nations, there is a 40 percent chance that global warming will exceed the 1.5 degree Celsius limit in the next five years. 49 people were killed in the landslide in Kerala. While around 60,000 people were affected in the floods in Assam between May and October, 149 people died. Similarly, a record 29.8 cm of rain was recorded in Hyderabad during

24 hours, which is 6 cm more than the previous record. Due to which about 50 people died in the floods.

Environmental problems are the main causes of disease, health issues, and impact on long-term livelihood for India. The growing population is having a direct effect on nature, which balances itself with the excess of population, and then begins the cruelest orgy of unbalanced nature, due to which our entire biosphere cannot live without being affected. Industrialization plays a major role in climate change. Different types of mills release sulfur dioxide, nitrogen dioxide, carbon dioxide, and many other poisonous gases and dust particles into the air, which remains in the atmosphere for many years. These cause problems like the greenhouse effect, depletion of the ozone layer, and an increase in global temperature. Air, water, and land pollution are also the result of industrialization.

Conclusion:

Environmental problems like pollution, climate change, etc. are prompting human beings to rethink their lifestyle and now the need for environmental protection and environmental management is important. Today we need the most to make the general public awareness of the issue of environmental crisis. An adequate number of scientists and technical experts are necessary for the successful implementation of all environmental laws. It is necessary to make the polluters aware of their social responsibilities. They have to be taught not to deviate from social responsibility for their own benefit. Public awareness about pollution is very important so that they do not become polluters and can raise their voices against pollution. There is a need to give speedy decisions to the courts in pollution-related matters and publicize them. Political will is needed to make pollution control measures cheap and easy and for proper efforts in this regard.

Suggestion:

- It is necessary to increase the availability of water by saving every drop of rainwater.
- Now with the increase in temperature, the rate of evaporation is also increasing. So we need to plan as well as accelerate our efforts.
- A definite plan should be made to save every drop of not only rain but also flood water and such efforts should be accelerated.
- The real effects of climate change are seen in the form of ever-increasing temperatures and unpredictable and excessive rainfall. Both have a direct relationship with the water cycle. So every solution to climate change must be related to water and its management.
- We should not waste water or even wastewater.
- There is a need to think more about flood management.
- The world urgently needs to reduce the increasing emissions.
- Along with reducing the fertility of the land, rising temperature is also creating a dust bowl-like situation. This means that water management and vegetation planning need to go hand-in-hand to increase the water-harvesting capacity of the land despite the long hot summer season.

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Live Streaming of Court Proceedings : Technology and Open Court

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Abstract:

In this era of technology, it is no longer sufficient to rely solely on the media to deliver information about the hearings of cases and their outcomes. Technology has become an inevitable facet of all aspects of life in every nation. In March 2018, India had a total of 1,206.22 million telecom subscribers' and 493.96 million internet users. Technology can enhance public access, ensure transparency and pave the way for active citizen involvement in the functioning of state institutions. Courts must also take the aid of technology to enhance the principle of open courts by moving beyond physical accessibility to virtual accessibility.

Modern technology allows the court to enhance the quality and effectiveness of the administration of justice. The use of technology can maximise efficiency and develop innovative methods for delivering legal services. Technology-based solutions must be adopted to facilitate access to justice. Indian court system has taken many steps towards technology adoption in judicial proceedings still active and supporting steps are needed to be ensured from the side of concerned stakeholders i.e. government, executives, lawyers' community and law colleges also to shore up and aware society at large about this courts' digitalisation.

If justice is seen to be done it must be understandable:

Judgments must be open not only in the sense of being available to the public but they must also be clear and easily interpretable by lawyers and also to non-lawyers. The technical and complex nature of laws should be made easily understandable by everyone. The Supreme Court and the High Courts in India have pro-actively adopted technology to make the judicial process more accessible, organised, transparent and simple. For instance

1. Courts have display boards in the court premises and on their official websites which enable legal practitioners and the public to view the progress of the cause list.
2. Courts maintain websites where they upload cause lists, daily orders, and judgments.
3. They also maintain an archive of previous judgments, allowing users to search for a specific judgment using various inputs.

Technological developments to regulate the use of video conferencing: Justice A.K. Goel once observed that¹:

1. The advancement of technology ought to be utilised also for service on parties or receiving communication from the parties.
2. Administrative instructions for directions to be issued to permit the litigants to access the court, especially when litigant is located outside the local jurisdiction of the Court. A designated officer/manager of a District Court must respond to such e-mail in the manner permitted as per the administrative instructions.
3. Technology must also be seen as a way of bringing services into remote areas to deal with problems associated with the justice delivery system. With the increasing cost of travelling and other expenses, videoconferencing can provide a cost-effective and efficient alternative.

¹Swapnil Tripathi vs Supreme Court Of India 2018, 1 SCC 1

ICT in Indian courts²:

Technology has made modernity possible. The interplay between technology and law has allowed dissemination of legal information with a veritable click of a button. The Indian judiciary has incorporated Information and Communication Technology (ICT) under the aegis of the e-Courts Integrated Mission Mode Project (e-Courts Project). This has been a part of the National e-Governance Plan (NeGP) which has been implemented in all High Courts and the District Courts of India. It was based on the 'National Policy and Action Plan for Implementation of Information and Communication Technology' prepared by the e-Committee of the Supreme Court of India in 2005³. The e-Courts Project includes improved ICT infrastructure, videoconferencing, improved access across various platforms including a web portal, app, judicial service centers and kiosks. It also includes capacity building of officers, ICT provisioning of District Legal Service Authorities, Taluka Legal Service Committees, State Judicial Academies and judicial process re-engineering⁴.

Platforms created for online judicial service:

E-Courts Portal: Online mechanisms (official websites) are available for stakeholders such as litigants, advocates, government agencies and the police officials to track case status, view cause lists, judgments and daily orders. The **services.ecourts.gov.in** portal is a one stop access point where any person can locate a case from any court across the country by using different search criteria available on the website.

Mobile App⁵: E-Courts Services mobile app available on Android and iOS provides facility for all stakeholders including advocates and parties. Online services are available at

- (i) ecourts.gov.in
- (ii) services.ecourts.gov.in and
- (iii) districts.ecourts.gov.in

Other facilities created to speed up justice delivery⁶: These are:

1. SMS Push facility in case of any adjournment, scrutiny, registration, transfer of case, disposal, uploading of orders, etc.
2. SMS Pull facility to allow advocates and litigants to send the CNR number⁷ and receive a response with the current status of the case.
3. Automated e-Mails to litigants, advocates and police stations receive information on regular e-mails in relation to the cause lists, transfer of cases, disposal, copies of orders and judgments.
4. Touch Screen Kiosks and Service Centre: This allows litigants and advocates to view their case status at the touch of a button. The same information can also be obtained from Judicial Service Centres established in court complexes.

²The websites of Department of Justice, Government of India (doj.gov.in/) and E-courts services (ecourts.gov.in/) contains fair amount of information on the ongoing e-Courts Project.

³The e-Courts Project was approved in 2010 and enabled computerisation of 14,249 courts in the district judiciary by 2015.

⁴ https://services.ecourts.gov.in/ecourtindia_v6/

⁵ <https://districts.ecourts.gov.in/justis-mobile-app>

⁶ <https://districts.ecourts.gov.in/>

⁷It is a unique number tagged for every single case in the country

5. E-Payment⁸: Online payment of court fees, fines, penalties and judicial deposits through the epay.ecourts.gov.in without the use of cheques, cash or stamps, with the help of this portal.
6. E-Filing⁹: This facility is integrated with standard application software across all the districts and subordinate courts.
7. National Judicial Data Grid¹⁰: The NJDG is a public portal that provides a database of pending and disposed of cases in various High Courts and District Courts across India. The NJDG portal njdg.ecourts.gov.in serves as a national judicial data warehouse that may be used to shape legislative policy.

Live-webcast or streaming of court proceedings and Video Conferencing:

Concept of Video-Streaming/Web-Cast Advancement in technology and increased internet penetration has facilitated transmission of live or pre-recorded video feed to devices like computers, tabs and mobiles. Live-webcast or streaming of court proceedings in real time can be implemented through available technological solutions. It is the fastest method for communicating and is most suited for connecting geographically dispersed audiences¹¹.

Live-streaming of courtroom proceedings is an extension of the principle of open courts. Live-streaming will have the ability to reach a wide number of audiences with the touch of a button. The live-streaming will be beneficial to the judicial system in many ways like:

1. It would make the courtroom proceedings faster as each hearing is made public within seconds of its occurrence.
2. Live-streaming will effectuate the public's right to know about court proceedings. It will enable those affected by the decisions of the Court to observe the manner in which judicial decisions are made.
3. Live-streaming of courtroom proceedings will reduce the public's reliance on second-hand narratives to obtain information about important judgments of the Court and the course of judicial hearings. Society will be able to view court proceedings first hand and form reasoned and educated opinions about the functioning of courts. This will help reduce misinformation and misunderstanding about the judicial process.
4. Law students will be able to observe and learn from the interactions between the Bar and the Bench. The archives will constitute a rich source for aspiring advocates and academicians to study legal advocacy procedures, interpretation of the law, and oratory skills, among other things. It will further promote research into the institutional functioning of the courts.
5. Live-streaming will enhance the rule of law and promote better understanding of legal governance as part of the functioning of democracy.
6. Live-streaming will remove physical barriers to viewing court proceedings by enabling the public to view proceedings from outside courtroom premises. It will reduce the need for litigants to travel to the courts to observe the proceedings of their cases.
7. It is a significant instrument of enhancing the accountability of judicial institutions and of all those who participate in the judicial process. Delay in the dispensation of justice is a matter of

⁸ <https://pay.ecourts.gov.in/epay/>

⁹ <https://districts.ecourts.gov.in/e-filing>

¹⁰ <https://njdg.ecourts.gov.in/njdgnew/index.php>

¹¹ Video-conferencing facilities connecting courts and jails have been established in 488 courts and 342 jails across India.

serious concern. Live-streaming of court proceedings will enable members of the public to know of the causes of adjournments and the reasons why hearings are delayed.

Foreign position:

Many common law nations have already adopted the concept of live-streaming and broadcasting courtroom proceedings.

1. **United Kingdom:** The Supreme Court of UK permits broadcasting of its courtroom proceedings¹². Proceedings before the Court to be broadcast where this does not affect the administration of justice. Three national broadcasters i.e. BBC, ITN, and Sky News are permitted to film and broadcast the Supreme Court proceedings, in accordance with the agreed protocol¹³. The broadcast is subject to certain limitations e.g. only the judgments and lawyers' arguments are permitted to be filmed. Victims and witnesses are not recorded; live broadcasts are delivered with a seventy seconds delay etc¹⁴.
2. **South Africa:** In 2017, the Supreme Court of Appeal (which is the highest court of appeal in South Africa) set a precedent permitting broadcasting of proceedings in all courts of South Africa¹⁵. Now, the media is permitted to live broadcast the proceedings of all South African courts.
3. **Canada:** The Canadian Supreme Court is considered a pioneer for adapting itself to technology and permitting audio-visual broadcasting of its proceedings. In 1993, the Canadian Supreme Court conducted a successful pilot project, live televising the hearings of three high profile cases.
4. **Australia:** Australia follows an open court system, with courts in all Australian jurisdictions admitting television cameras into courtrooms. Since 2013 audio-visual recordings of the High Court of Australia have been made available to the public. The entire process of filming and broadcasting is carried out by the Court staff. Transcripts of the hearings are made available within a day or two of most hearings¹⁶.
5. **New Zealand:** New Zealand allows wide access to the media in courts and has one of the most progressive live broadcast policies among common law countries. It permits media

¹²<https://www.supremecourt.uk/live/court-01.html>

¹³The protocol prohibits recording of certain types of proceedings like private discussions between litigants and their counsel. The footage is only allowed to be used for informational purposes in programs like news, current affairs, education, and legal training. Any broadcasting which may detract from the seriousness or integrity of the proceedings, like entertainment programmes, satirical programmes, political party broadcasts, and advertising or promotion, is not permitted.

¹⁴<https://www.supremecourt.uk/docs/practice-direction-08.pdf>

¹⁵The NDPP v Media 24 Limited & others and HC Van Breda v Media 24 Limited & others (425/2017) [2017] ZASCA 97

¹⁶High Court of Australia, Press Release, 01 October 2013. Available at: <http://www.hcourt.gov.au/assets/news/MR-audio-visual-recordings-Oct13.pdf>. High Court of Australia, Photography and Recording Guidelines. <http://www.hcourt.gov.au/about/photography-and-recording>.

houses to broadcast court proceedings with the approval of the court¹⁷. The broadcast is governed by a set of guidelines which balance the principle of open justice with the need for a fair trial. They impose upon the media the responsibility to provide an accurate, fair and balanced reporting and by following rule and guidelines¹⁸.

6. **United States:** The US Supreme Court does not permit video recording or photography of its proceedings. It releases audio transcripts of the oral arguments on the same day. Audio recordings of each weeks oral arguments are released on the courts website¹⁹ at the end of the week. Each Federal Court of Appeals has the discretion to provide audio or video recordings of its proceedings, subject to guidelines framed by the court. Since 2014, the US Court of Appeals for the Ninth Circuit has approved video broadcasting of all cases before it, except those prohibited by law through guidelines²⁰. The media needs to take prior approval of the court to record the proceedings. The presiding judge is granted absolute discretion to limit or terminate media coverage, or direct the removal of camera coverage personnel when necessary, in order to protect the rights of the parties or aid the conduct of proceedings.
7. **International Courts:** International courts have also embraced the idea of broadcasting their court proceedings. It permits televising of its cases, although with a thirty minute delay²¹. The ICC has a YouTube channel where it broadcasts case proceedings, press conferences, and informative videos in different languages²². In the European Court on Human Rights (ECHR), all hearings are permitted to be made public, unless specifically disallowed by the Court²³.

The model guidelines: Laying the model guidelines about live-streaming and broadcasting courtroom proceedings is a part of the authority of the Court to frame Rules under Article 145(1) in order to determine all the concerned aspects such as :

- i. The phases in which live-streaming shall be introduced and operated;
- ii. The types of cases for which live-streaming of cases will be provided or not allowed;
- iii. Authorising the use of appropriate technology;
- iv. The agencies through which live-streaming will be implemented;
- v. Other facets for implementation;
- vi. Other norms for the use of the feed.
- vii. The discretion of the presiding judge of each courtroom to disallow live-streaming for specific cases.
- viii. Authority to have the exclusive copyright over videos streamed online and archived.

¹⁷New Zealand, In-Court Media Coverage Guidelines (2016). Available at:
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²¹Official website of International Criminal Court. Available at: <https://www.icc-cpi.int/>

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Conclusion:

Modern technology allows the court to enhance the quality and effectiveness of the administration of justice. The use of technology can maximise efficiency and develop innovative methods for delivering legal services. Technology-based solutions must be adopted to facilitate access to justice. Indian court system has taken many steps towards technology adoption in judicial proceedings still active and supporting steps are needed to be ensured from the side of concerned stakeholders i.e. government, executives, lawyers' community and law colleges also to shore up and aware society at large about this courts' digitalisation.

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Nanoparticles of hepta-O-benzoyl- β -D-maltosyl thiocarbamates: Synthesis and Characterization

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Abstract:

Applications of the N-linked sugar isothiocyanate and isocyanate have gained considerable attention in recent years due to its unique characters. On the basis of experiences gained recently from work being carried out in the laboratory , it appeared quite interesting to carry out the synthesis of nanoparticles of new N-linked Maltose Thiocarbamates and their derivatives by the reaction between Maltosyl isothiocyanate and various alcohols. The characterization of new compounds and biologically made nanoparticles has been carried out by Melting point, antimicrobial activity, usual chemical transformation, NMR, IR and Mass spectral studies.

Keywords : Maltose, Thiocarbamates, Nanoparticles,

Introduction :

Day by day the field of carbohydrates becomes widely spreading because of its enormous interactions and cell-cell recognition, cell growth, fertilizations and immune responses. Nanoparticles play very important role in the development of novel diagnosis methods and in the advanced design of drug delivery system^{1,2}. Silver nanoparticles and Gold nanoparticles particularly, shows an excellent anti-microbial properties and hence are rapidly being used in to medicines etc. to increase the lifestyle of human being and beneficial for mankind and environment^{3,4}. Glyco-nanoparticles shows several advantages such as their synthesis can be performed under biomimetic conditions result in nanoparticles without traces of chemicals responsible for adverse cellular responses and carbohydrates which are on the surface can act as targeting molecules and trigger cellular uptake via specific receptors or mediate specific cellular responses⁵. Derivatives of Carbohydrate have been reported as inflammatory, analgesic, fungicidal, herbicidal & pesticide agents⁶⁻⁸. Because of the tremendous biological importance, carbohydrates are very essential to our daily lives. They have more importance in synthesis and medicinal chemistry^{9,10}. Maltose is the second member of an important biochemical series of glucose chains. Maltose, or malt sugar, is a disaccharide formed from two units of glucose joined with an α (1 \rightarrow 4) linkage. Maltose is not common in food, but can be formed from the digestion of starch and is heavy in the sugar in malt, the juice of barley and other grains. Nanotechnology as defined by size is naturally very broad, including field of science as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, energy storage, micro fabrication, molecular engineering etc.

Isothiocyanates and isocyanates are a group of very reactive chemical compounds. Once they have reacted, the resulting product is usually less harmful than the chemical itself. This chemical is used in the manufacture of carbamates and thiocarbamates. Due to high reactivity towards compounds containing active hydrogen atom isocyanates and isothiocyanates are one of the most versatile classes of functional groups. They are important intermediates; the chemistry of these molecules is dominated by the nucleophilic addition reaction. The high yields and lack of byproducts with this type of reaction have led to their commercial exploitation in the polymer

field, agrochemicals and pharmaceuticals. Reactions with carbon nucleophiles provide a useful synthetic access to substituted amides and other derivatives.

Experimental :

The prepared Compounds and their nanoparticles have been screened for antimicrobial activity using Cup plate agar diffusion method. By measuring zone of inhibition in mm antimicrobial activity has been studied. By using DMSO as a solvent the concentration of compound were 1 mg/ ml. Amikacin (100 µg/ml) was used as a standard. Compounds were screened for antimicrobial activity against microbes (listed in table 2) in nutrient agar medium. Determining the difference between melting point of compounds and their nanoparticles is one way to test if the nanoparticle is prepared or not. So the M.P. of compounds and their nanoparticles has been taken using melting point apparatus. ^1H NMR data of the compounds were measured using CDCl_3 solvent on 300 MHz frequency. And their chemical shift values are in (ppm) units using TMS as a reference. IR spectral data of the compounds were recorded on FTIR-RXI spectrophotometer. Conformation of products and reaction progress carried out by TLC using Hexane : Ethyl acetate solvent system and identification of spots carried out by using iodine chamber and KMnO_4 spray.

Method of Preparation :

Step 1 : preparation of Maltose Octabenzoate: 55 ml dry Pyridine and 55 ml dry Chloroform were taken in a 1 lit. tight cork glass bottle and cooled in an ice-salt bath. To this solution previously prepared cooled solution of 55 ml Benzoyl Chloride in 55 ml dry Chloroform was added with constant stirring. To this mixture 20 gm. of dry powder of Maltose was added in small instalments with constant stirring by maintaining the temperature below 5°C . After 24 hrs. mixture was washed several times with dil. Aq. Sulphuric acid, followed by aq. Sodium Bicarbonate and lastly with water. By using separating funnel Chloroform layer was separated which contains desired product. Product was triturated several times with petroleum ether until white powder obtained with M.P. 112°C .

Step 2 : Synthesis of hepta-O-benzoyl- α -D Maltosyl Bromide:

4 gm Red Phosphorus was added to 40 ml Glacial Acetic acid taken in a conical flask. To this mixture 15 ml molecular Bromine was added gradually with constant shaking and cooling. Mixture was allowed to stand at ice cold temperature for about 30 min. Mixture was filtered through double filter paper. The fine powdered of maltose octabenzoate (10gm) was added to the brominating agent. After that flask was kept for 2 hrs at room temperature. Then 70 ml Chloroform was added to the reaction mixture followed by vigorous shaking. The resultant mixture was poured in an ice cold water to separate Chloroform layer. It was washed several times with aq. Sodium bicarbonate to remove excess of acetic acid followed by aq. Sodium metabisulphite to remove excess of bromine and finally 2-3 times with water. By using separating funnel the solution was removed and addition of petroleum ether results a solid mass (20 gm).

Step 3: Synthesis of hepta-O-benzoyl- β -D-maltosyl isothiocyanate:

Lead thiocyanate was prepared by mixing aq. Solution of lead nitrate and ammonium thiocyanate. The white precipitate was filtered washed with distilled water and dried over 50°C . To a suspension of hepta-O-benzoyl- α -D-maltosyl bromide (15gm) in sodium, dried xylene (60 ml) was added lead thiocyanate (5 gm). The reaction mixture was refluxed for 3 hrs, gentle

shaking. Solution was then cooled and liberated lead bromide was removed by filtration. The xylene filtrate was treated with petroleum ether with stirring, a white solid mass obtained. This solid was expected hepta-O-benzoyl-β-D-maltosyl isothiocyanate. M. P. 116-120 °C.

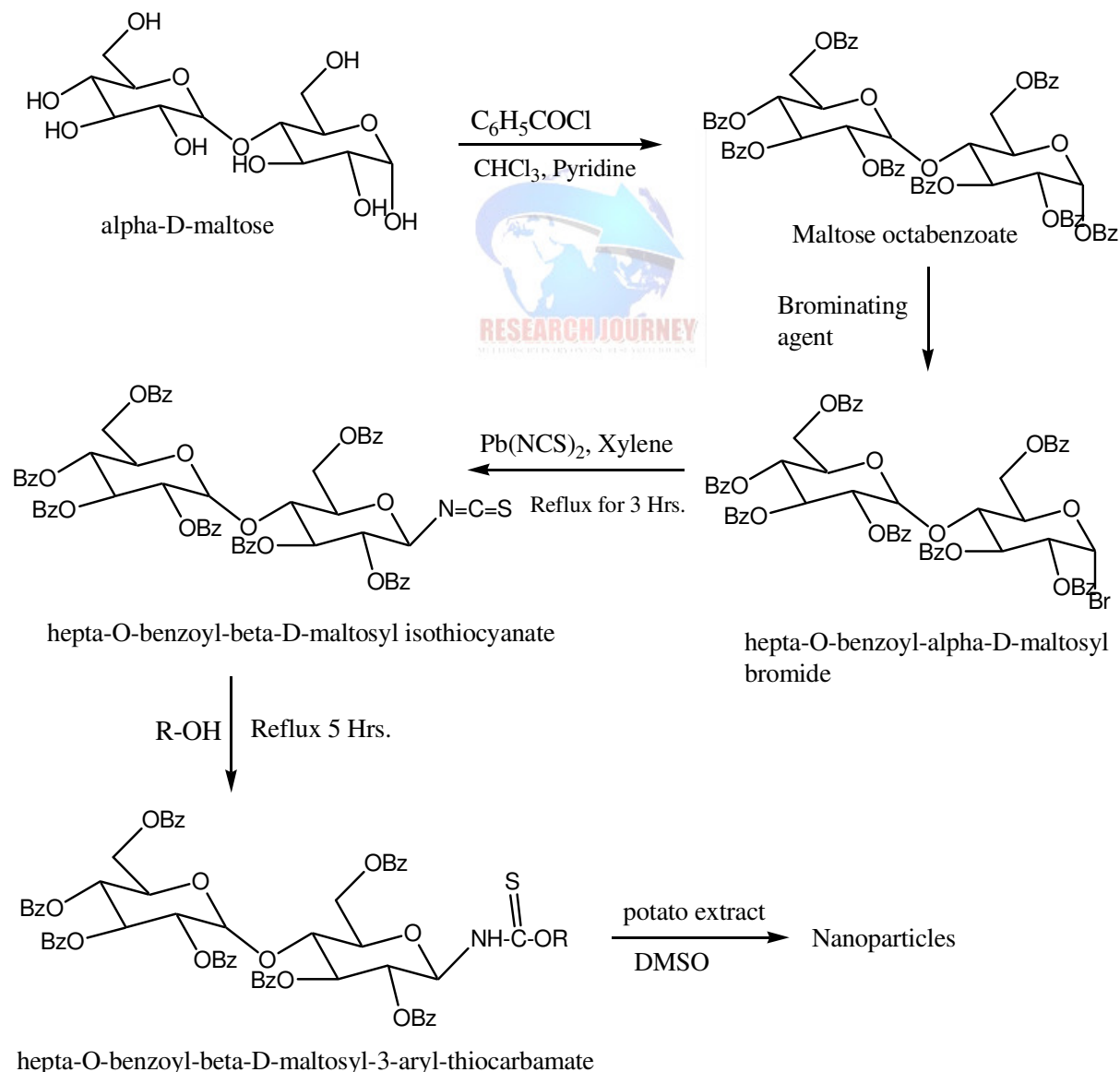
Step 4: Synthesis of N-maltosylated Thiocarbamates:

Reaction of hepta-O-benzoyl-β-D-maltosyl isothiocyanate and various alcohols has been refluxed for 5 hrs. On cooling and mixing with water most of the alcohols gave a white granular solid was purified by Chloroform-Petroleum ether. Melting point ranges from 140-170 °C for all alcohol derivatives.

Step 5 : Preparation of Nanoparticles (Biologically) :

Small pieces of potato was boiled in little amount of water in a beaker for about 10 min. Filtered the semi hot solution through filter paper, remaining filtrate obtained called potato extract. 1 gm. of compound was dissolved in 2 ml of DMSO, clear solution was obtained. Then 2,3 drops of potato extract was added to the clear solution, suddenly white precipitate of nanoparticles was obtained.

Scheme :



R= a) ethyl b) methyl c) n-propyl d) isopropyl e) n-butyl f) t-butyl

Result and Discussion: Antimicrobial activity (Table 1)

Antimicrobials	Bulk	Nanoparticles
E. coli	10 mm	13 mm
S. aureus	11 mm	13 mm
S. typhi	11mm	14 mm
P. vulgaris	09 mm	12 mm
Amikacin	10 mm	17 mm
Clandamycine	12 mm	14 mm
DMSO	26 mm	20 mm

*Including the well diameter of 8 mm. **Zone of inhibition in mm (15 or less) resistance, (16-20 mm) moderate and (> 20 mm) sensitive.

The prepared Compounds and their nanoparticles have been screened for antimicrobial activity using Cup plate agar diffusion method. By measuring zone of inhibition in mm antimicrobial activity has been studied. By using DMSO as a solvent the concentration of compound were 1 mg/ ml. Amikacin (100 µg/ml) was used as a standard. Compounds were screened for antimicrobial activity against microbes (listed in table 1) in nutrient agar medium. Zone of inhibition of nanoparticles were more than bulk, which confirms better antimicrobial activity of nanoparticles in comparison to bulk one.

(Table 2)

Sr. No.	Aryl amines	1-hepta-O-benzoyl-β-D-maltosyl-3-aryl thiocarbamates	Yield %	Melting point of Bulk °C	Melting point of Nanoparticles °C
1.	Ethyl	O-ethyl thiocarbamate	71	121-123	90
2.	Methyl	O-methyl thiocarbamate	82	124	109
3.	n-propyl	O-n-propyl thiocarbamate	85	146	124-126
4.	Isopropyl	O-isopropyl thiocarbamate	81	146-149	123-129
5.	n-butyl	O-n-butyl thiocarbamate	69	141	121
6.	t-butyl	O-t-butyl thiocarbamate	76	149-155	119-123

The characterization of compounds have been confirmed by IR spectroscopy which shows C=S, N-H, C-N, C=O, C-O stretching frequencies at different absorption bands. H1 NMR shows signal due to N-H proton at 8.07 ppm and maltosyl protons at 5.58 – 3.79 ppm. and benzoyl protons at 6.78 – 3.90 ppm. The Characterization of nanoparticles have been carried out by UV visible spectroscopy. The band gap difference increases as the size of nanoparticles decreases. The decrease in melting point confirms the nanoparticles were prepared.

Conclusion :

N-linked nanoparticles have found interesting applications in a wide spectrum of biomedical utilities like imaging, sensing, drug delivery and gene targeting. The synthesised nanoparticles were characterized by antimicrobial activity, UV spectroscopy, X-Ray diffraction and melting point determination. On the basis of which nanoparticles obtained was confirmed. A nanoparticle shows better antimicrobial activity than bulk. Because of such properties of n-linked sugar derivatives provided a very facile and easy way to increase its potency and enhanced the route for biomedical analysis.

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Tricks in Mathematical Calculations

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Abstract:

In the ancient Indian Mathematics, Tricks in Mathematical calculations were used to increase the speed of calculations. Vedic Mathematics is one of the Ancient systems of Indian Mathematics. Vedic Mathematics were rediscovered from the Vedas between 1911 and 1918 by Shri. Bharati Krishna Tirthaji (1884 - 1960). According to his research all of Mathematics is based on Sixteen Sutras or Word-Formula. Today, we need to study all these Sixteen Sutras and need to develop new Mathematical Tricks to increase the speed of our Mathematical calculation. In this paper we see some easy ways to do mathematical calculations in quick and effective manner.

Keywords: Vedic Mathematics, Multiplication, Digit, Intersection, Crosswise Multiplication, Base Number.

1. Introduction

Today, we need to study all these Sixteen Sutras and need to develop new Mathematical Tricks to increase the speed of our Mathematical calculation. In this paper we see some easy ways to do mathematical calculations in quick and effective manner. One of these method is "Multiplication of Any Number With 11", in this method we discuss about two digit numbers and three digit numbers only. But this method is true for all natural numbers. Also here we discuss a method of multiplying numbers which are very close to 100, 1000, etc. Then we discuss about multiplication of any two digit number with any two digit number and its geometric approach.

2. Product Of Any Number With 11

2.1 Two Digit Number With 11

Taking product of any two digit number with 11 is quite easy job. Here we are going to study an easy method to do product of any two digit number with 11. For that consider a number with two digits say AB and $10 \leq AB \leq 99$. Here A is at 10th place and B is at unit place of number AB.

Theorem 2.1. The product of any two digit number AB with 11 gives three digit number having digit A at 100th place, addition of digit A and digit B at 10th place and digit B at unit place. If the addition of digit A and digit B is again a two digit number then from this number 10th place digit is added to digit A in 100th place.

Proof. Consider, product of AB with 11.

$$\begin{aligned} AB \times 11 &= [(A \times 10) + (B \times 1)] \times 11 \quad (1) \\ &= A \times 110 + B \times 11 \quad (2) \\ &= A(100 + 10) + B(10 + 1) \quad (3) \\ &= A100 + A10 + B10 + B \quad (4) \\ &= A100 + (A + B)10 + B \quad (5) \end{aligned}$$

This shows that, digit A is at 100^{th} place, A + B is at 10^{th} place and digit B is at unit place of the resultant number.

Remark 1.

Above result says that, the product of any two digit number **AB** with 11 is obtained by writing addition of digits **A** and digit **B** in between digit **A** and digit **B**. **Example 1.** Consider Multiplication of two digit number 32 with 11.

From above Theorem 2.1,

$$32 \times 11 = 3 \times 100 + (3 + 2)10 + 2 \quad (6)$$

$$= 352 \quad (7)$$

Here, 5 is addition of digits 3 and 2. This addition 5 is written in between digits 3 and 2.

Example 2. Consider Multiplication of two digit number 64 with 11.

From above Theorem 2.1,

$$64 \times 11 = 6 \times 100 + (6 + 4)10 + 4 \quad (8)$$

$$= 600 + (10)10 + 4 \quad (9)$$

$$= 600 + 100 + 4 \quad (10)$$

$$= 704 \quad (11)$$

Here, 10 is addition of digits 6 and 4. From number 10, 0 is written in between digits 6 and 4. Further 1 is added to 6. Thus, final answer is 704.

2.2 Three Digit Number With 11

Example 3.

Consider Multiplication of three digit number 123 with 11.

Here, the number 123 contains three digits viz. 1, 2 and 3. Here 1 is at 100^{th} place, 2 is at 10^{th} place and 3 is at unit place. Now, here we make two groups of these digits, first is 12 and second is 3 and follow the procedure in subsection 2.1.

$$123 \times 11 = 12 \times 100 + (12 + 3)10 + 3 \quad (12)$$

$$= 1200 + (15)10 + 3 \quad (13)$$

$$= 1200 + 150 + 3 \quad (14)$$

$$= 1353 \quad (15)$$

Here, 15 is addition of group 12 and 3. From number 15, 5 is written in between digits 12 and 3. Further 1 is added to 12. Thus, final answer is 1353.

Principle 1. Any Number **AB** can be written as,

$$AB = (10A + B) \text{ and } 11 = (10 + 1)$$

$$(AB) \times 11 = (10A + B)(10 + 1) = 100A + 10(A + B) + B$$

1. The Two Way Method

This method is used to multiply numbers which are very close to number 10^n , $n = 2, 3, 4, \dots$ etc. That is, this method is useful for multiplication of two numbers which are very close to either 100, 1000, 10000, etc.

3.1 Multiplication of numbers very close to 100.

Example 4. Multiplication of Numbers 99 and 97:

$$99 \times 97 = (100 - 1) \times (100 - 3) \quad (16)$$

$$= 10000 - 300 - 100 + 3 \quad (17)$$

$$= 9600 + 3 \quad (18)$$

$$= 9603 \quad (19)$$

Alternative Method: The product 99×97 can be done in simple manner as,

1. First we write 99 and 97 one over the other.
2. As 99 is less than 100 and it is 1 unit apart from 100, so write -01 in front of 99.
3. As 97 is less than 100 and it is 3 unit apart from 100, so write -03 in front of 97.
4. Do the crosswise addition either $(99 + (-03))$ or $(97 + (-01))$, addition is **96**.
5. Do the vertical multiplication of -01 and -03, this multiplication is **03**.

6. Thus product is 9603.

$$\begin{array}{r} 99 \quad -01 \\ \times 97 \quad -03 \\ \hline 96 \quad 03 \end{array}$$

Thus, $99 \times 97 = 9603$

Example 5. The product 94×96 can be done in simple manner as,

1. First we write 94 and 96 one over the other.
2. As 94 is less than 100 and it is 6 unit apart from 100, so write -06 in front of 94.
3. As 96 is less than 100 and it is 4 unit apart from 100, so write -04 in front of 96.
4. Do the crosswise addition either $(94 + (-04))$ or $(96 + (-06))$, addition is **90**.
5. Do the vertical multiplication of -06 and -04, this multiplication is **24**.
6. Thus product is 9024.

$$\begin{array}{r} 94 \quad -06 \\ \times 96 \quad -04 \\ \hline 90 \quad 24 \end{array}$$

Thus, $94 \times 96 = 9024$

Example.6 The product 104×108 can be done in simple manner as,

1. First we write 104 and 108 one over the other.
2. As 104 is greater than 100 and it is 4 unit apart from 100, so write 04 in front of 104.
3. As 108 is greater than 100 and it is 8 unit apart from 100, so write 08 in front of 108.
4. Do the crosswise addition either $(104 + 08)$ or $(108 + 04)$, addition is **112**.
5. Do the vertical multiplication of 04 and 08, this multiplication is **32**.
6. Thus product is 11232.

Thus, $104 \times 108 = 11232$

$$\begin{array}{r} 104 \quad 04 \\ \times 108 \quad 08 \\ \hline 112 \quad 32 \end{array}$$

Principle 2. If **A** and **B** are any two natural numbers which are both very close to base **Z** and both are either greater than base **Z** or both are less than base **Z**, here base, $Z = 100, 1000$, then $(Z + A)(Z + B) = Z(Z + A + B) + AB$.

4. Two Digit By Two Digit Multiplication

Example 7. Consider, Multiplication of two numbers 31 and 12.

$$\begin{array}{r} 3 \quad 1 \\ \times 1 \quad 2 \\ \hline 3 \quad 7 \quad 2 \end{array}$$

Thus, $31 \times 12 = 372$

Example 8. Consider, Multiplication of two numbers 22 and 33.

$$\begin{array}{r} 22 \\ \times 33 \\ \hline 66 \\ 660 \\ \hline 726 \end{array}$$

Thus, $22 \times 33 = 726$

Example 9. Consider, Multiplication of two numbers 56 and 74.

$$\begin{array}{r} 56 \\ \times 74 \\ \hline 224 \\ 3920 \\ \hline 4144 \end{array}$$

Thus, $56 \times 74 = 4144$

Thus, the above method is useful for multiplication of any two numbers x and y such that $10 \leq x, y \leq 99$.

5. Two Digit By Two Digit Multiplication (Geometric Approach)

Example 10. Consider multiplication of numbers 23 and 12: Here, we use geometry to find value of 23×12 :

We use following steps:

1. Consider number 23, it contains two digits. First is 2 and second is 3.
2. For digit 2, we draw set of two horizontal lines.
3. For, digit 3, we draw another set of 3 horizontal lines parallel to first set of horizontal lines.
4. Now, consider number 12, it contains two digits. First is 1 and second is 2.
5. For digit 1, we draw one vertical line crossing to two sets of horizontal lines.
6. For digit 2, we draw another set of two vertical lines crossing to two sets of horizontal lines.
7. Now, we count point of intersections in upper left corner of the figure and it is 2.
8. Now, we count point of intersections in lower right corner of figure and it is 6.
9. Finally, we count remaining points of intersections of the figure and it is 7.
10. Thus, we get number 276. It is the product of 23 and 12.

Ex. 11 Consider multiplication of numbers 45 and 67, answer from above method will be 3015.

Ex. 12. Consider multiplication of numbers 38 and 77, answer from above method will be 2926.

Conclusion:

The methods given in this article will help us to increase our speed of Mathematical Calculations with very quick and effective manner.

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Impact of Coronavirus on Banking Sector in India

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Abstract

Individual within side the present period, as all of us realizes that to overcome a pandemic like Corona virus, the Indian government cautioned an entire lockdown within side the from March 24, 2020. The Indian government want to lockdown therefore the COVID-19 spreading save you and defend the human beings of the countrywide citizens are regularly saved, this will rather impact precise sectors of ours. Banking is that the muse of the Indian economic gadget. This research test is an try to appraise the essential effect of a pandemic like Corona virus on banks due to lockdown. Consequently, all business company associations, instructive institutions, and public and personal location offices are shut. The article has targeted the extreme effect of the lockdown on banks honestly in case of moving backward.

Keywords: Indian economic gadget, Covid-19, Growth.

Introduction

Corona virus affected 3.21 Cr people in India till July 2021, in several manners. Maximum infected people superior mild to moderate contamination and get higher without getting to the health facility with the assist of fantastic practices like each day doing yoga and taking home remedies, preserving themselves motivated.

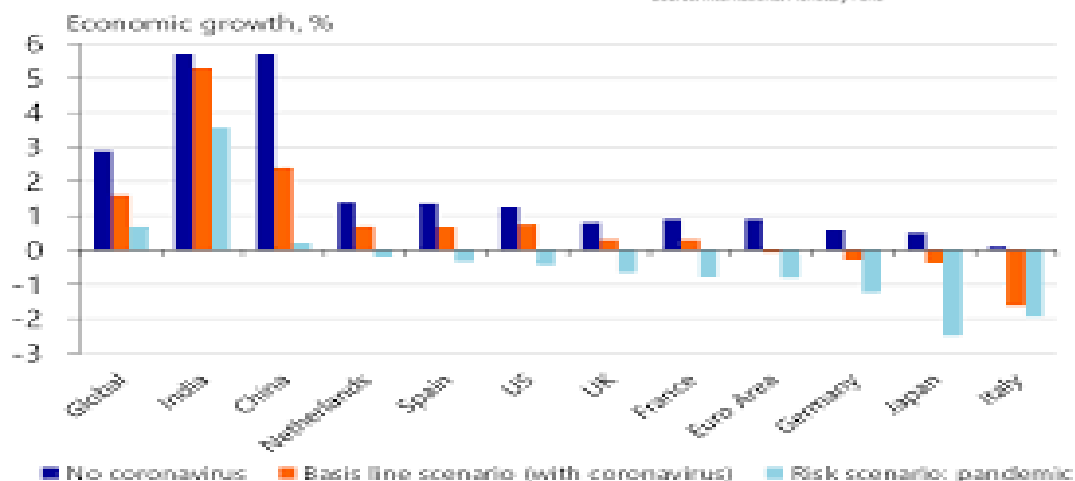
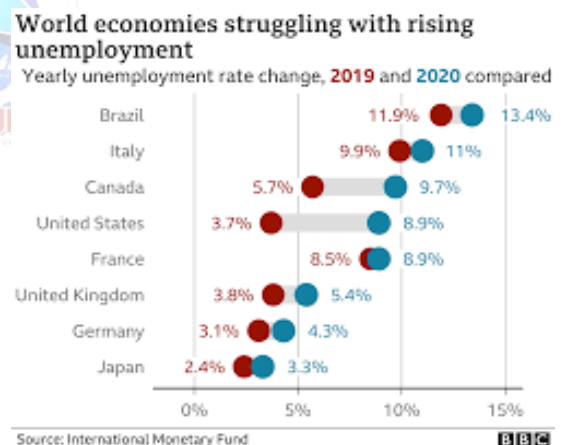
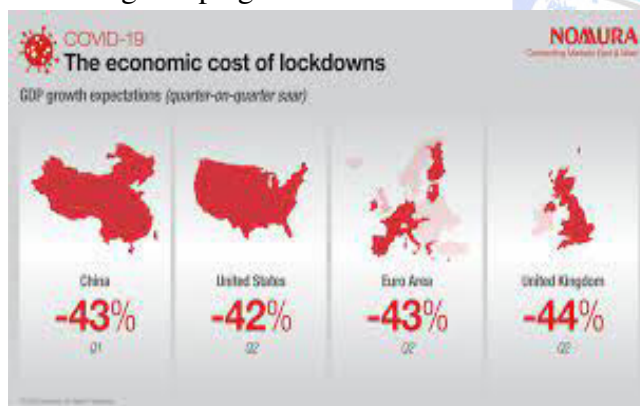
Statement of the Problem

The fast spread of pandemics for instance, Corona virus has stimulated a lofty decline in critical lists, show an massive effect on its effect and GDP increase. The important data on the incident of the unconventional COVID-19 first observed in China on 31 December 2019. This COVID-19 is each different infection that has now not however been recognized in people. The writing proves that COVID-19 may be a enormously huge set of infections. Its spreading tempo is rather fast. COVID-19 should make a few components from the same old cold the more intense chemical imbalance disorder to stay this from spreading the United States over, the Indian government cautioned a lockdown on 24 March 2020. Many actions were made thru manner of manner of ample administrations all within side the path of the planet, worldwide health company improved the appropriate hobby thru manner of manner of Indian Government and hundreds of human beings as a lockdown, manner to the restore of the contamination or without an immunization to stay the infection from spreading modified into the maximum first-class desire. Incidentally, precise corporations like International fund and International Bank for Reconstruction and Development, Central Banks financial professionals, reserve directors, and counselling agencies from various worldwide places have communicated their feelings of dread about the spectacular impact of lockdown in gross domestic product worldwide particularly regular and arising financial topics like India.

Indian Banking Sector

Banking region is a long-time order that has the vital component purpose of depositing and lending coins to indigent people, trades and governments. Banks round the globe are

measured truthful. When a consumer deposits coins in to a Bank, it does now no longer suggest to the Banks what the quantity is. The Account holder is aware about that the cash is stable with the economic group. The Bank offers many facilities to customers like providing loans, Mobile banking, NEFT, RTGS, debit, credit score rating gambling playing cards and lots of others measures to get name for and luxury the liquidness thru manner of manner of safeguarding public region banks lend more to Non-Banking Financial Corporations, offering credit score rating guarantee scheme, organizing loan meal and lots of others, responsible function in India's economic gadget and contribute to employment in India. Regrettably Banking region has failed. The condition of Public Sector Banks has deteriorated. Services of Indian banking system which is nearly hundred years old. Since the start of the reforms in 1991, it's miles been extended and digitalized (KPMG-2017) as particular that the Banking region is smooth to become the fifth vital banking system within side the worldwide within side the 12 months 2020 and it's going to in all likelihood be the 1/3 largest thru manner of manner of 2025. There are currently 34 Banks in India, out of which 12 are Public region Banks. 14 Banks were Nationalized in 1969 and 6 Banks were nationalized in 1980. The Federal Reserve Bank of India Announced in August 2019 that banks should have an exposure of up to twenty consistent with cent of their Tier I Capital to at least one NBFC. This restrict modified into 15 consistent with cent earlier. This helped boost credit score rating go with the flow as Bank funding to NBFCs grew thru manner of 30 consistent with sent 12 months, the govt. has taken a sequence of Measures to get name for and ease the liquidity thru manner of manner of ensuring public region banks lend similarly to NBFCs, introducing partial credit score rating guarantee scheme, organizing loan fest advertising marketing campaign and lots of others.



Methodology of the Study

Study primary purpose of this text is to live the effect of covid-19 in Indian banking region. In training to carry out objective, certain conclusions are drawn from the prevailing literature provided on several web sites of the internet as highlights of interviews with famous economics and fund managers, financial and financial advisors and senior officials of financial bodies, chambers of change and company. Current, there can be no actual facts on the impact of Covid -19 on various sectors of the economic gadget collectively with banks and handiest a hard estimate is accessible handiest about the amount of fantastic cases, the use of statistical tools wasn't possible manner to the unavailability of quantitative facts. Therefore a descriptive article has been prepared with the assist of online views of professionals regarding the impact of ongoing epidemic.

Steps Taken by RBI to Counter the Coronavirus Impact

The RBI said to any or all of the lending to allow three month moratorium on EMI payments with the intention to imbue liquidity into the system among novel coronavirus disaster. The Governor Shaktikanthadas said to media that the ones are unexpected situations, and wonderful measures are required to assist the sagging economic gadget as all the financial sports activities have come to a halt.

Cash Reserve Ratio: The RBI moreover publicized that the cash reserve ratio might be reduced thru manner of manner of 100 bps, or 1%, to 3% this is able to be applicable from March 23, and will inject Rs.137000 crore.

Repo Rate - RBI delivered that it had been reducing the Repo charge thru manner of manner of 75 bps, or 0.75% to 4.4. The Repo charge modified into earlier 5.15; very last being lessen in October 2019.

Reverse Repo- The regulator moreover delivered that it might lessen the other repo charge thru manner of manner of 90 bps, or 0.90%. on a each day average , banks had been parking Rs 3 lakh crore with the RBI. The prevailing contrary repo charge modified into 4 %.

Long Term Repo Operations -The RBI may also undertake future Repo operations; allowing similarly liquidity with the banks. The banks however are particular that this liquidity are going to be deployed in commercial papers, investment grade employer bonds and non -convertible debentures.

Ease of capital financing- Lenders were allowed lending to recalculate enchantment thru manner of manner of reducing margins and / or thru manner of manner of reassessing the capital cycle for the borrowers. The RBI moreover particular that the kind of byskip could now no longer bring about asset class downgrade.

Working capital interest -A three month interest shall additionally be established to all or any lending institutions.

Deferment capital interest- internet stable funding ratio, which reduces funding risk thru manner of manner of requiring banks to fund their sports activities with sufficiently stable reasssets of funding modified into postponed to October 1, 2020. The NSFR modified into earlier imagined to be implemented thru manner of manner of April 1, 2020.

MSF- Marginal Fame Facility has moreover been improved to three, you look after SLR, available till June 30,2020. This diploma ought to provide comfort to the banking company thru manner of manner of allowing it to avail a similarly 137000 crore of liquidity under the LAF window in times of stress at the reduced said the RBI.

Fresh Liquidity - The impact of all the announcements in recent times shall inject almost 3.2% of GDP, the Governor said in his quick in recent times. The RBI moreover delivered that thinking about February 2020 it had injected Rs 2.8 lakh crore of liquidity, like 1.4 percent of GDP.

Embracing Neo Technologies - withinside the post-epidemic and depression, growing generation will play a key characteristic in speeding up transactions and reducing fees for banks. The Indian banking region has already observed out the characteristic of technology in engaging in get admission to and scale. These generation will play a key characteristic withinside the digital transformation of banks and financial institutions and re-don't forget the digital transport of offerings.

Channels of Digitization - consistent with the planet 2017 worldwide are trying to find report, India is that the worldwide second largest non-populous own circle of relatives with 190 million adults without having access to a financial institution account thru manner of manner of getting to economic group branches to use digital channels, desire banks will permit their customers to barter multiple computerized and digital channels to offer this column channel mix. Banks will bear in mind such essential factors as demographic, internet get admission to, lat mile, connectivity, consumer banking, behavior patterns, and lots of others. To effectively observed thru manner of manner of Indian banking consumers.

Security, Privacy and Customer Trust - consistent with the RBI for the economic 12 months 2017, India's banking region observed a upward thrust in Cyber fraud and a loss of 13 elements 7 million dollars. With the developing use of cashless and digital economic gadget, it's going to in all likelihood be compulsory for banks to implement consistent structures and structures. Banks to discover every internal and outdoor weaknesses.

Policy and Compliance - Focus ought to get on digital payments and infrastructure specifically in rural India. India is already on its course to introduce the non-public facts protection bill on the lines of GDPR within side the EU.

Other Impact - An epidemic like corona is probably going to bring about a intense shift in economic financial savings and risk to households. This increase can increase the go with the flow of economic financial savings in economic group deposits maximum of the devices of economic financial savings, which are usually considered stable. An epidemic like corona may increase the decision for for loans from banks, slowing down secured lending like personal loans or credit score rating gambling playing cards.

Conclusion :

The impact of the corona like epidemic on banks in India has left some banks to battle manner to deposits, as loans are blanketed thru manner of manner of deposits. The condition of personal banks may stress customers to lend less that may cause awful liquidity. The RBI has given a 3 month grace period to all or any banks manner to corona which has brought some

consolation from the requirements governing lousy credit score rating recognition, but banks NPA have improved. it's miles documented to the bankers that for the cause that implementation of the lockdown thru manner of manner of the govt. of India on 25 March, 2020 RBI has taken lots of steps in doing business company within side the banking region. RBI has moreover cushy the remaining date for lousy credit score rating rules manner to corona and barred borrowers from paying dividends for the 12 months ended 31 march 2019. Subjects of Banks has deteriorated manner to the lockdown. But now after retreating the lockdown it's going to take longer to move again to normally.

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Effect of Yoga On Sports Performance

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Abstract :-

The almost poses are not aerobic in nature, they do in fact send oxygen to the cells in the body byway of conscious deep breathing and sustained stretching and contraction of different muscle groups. Whatever sport you choose to practice, yoga can enhance and complement your ability. Most sports build muscular strength and stamina, often in specific areas of the body. Yoga can benefit professional sports persons, it is necessary to explore what is required to play a sport and play it well. It is well acknowledged that to play any sport, whether it be Athletics, tennis, volleyball, swimming, running etc., we must develop the basic skills and continually train the body so that we can apply the skill in a refined and polished way. This of course requires considerable time, energy and commitment to practice the skill at hand. Having a body that is flexible, strong and controlled is also another important consideration, if one is not able to move the body with the grace, velocity and speed required, then performance will be lackluster. So, we can say that yoga is very beneficial to everyone especially for a sportsman.

Keywords :-yoga, injury, fitness, sports, performance

Introduction :-

Yoga originated thousands of years ago in India as a technique to help people achieve spiritual enlightenment. Based on the idea that the mind and body are one, students believe that Yoga improves health by improving how you see the world, which calms the spirit and decreases stress. Today, people practice Yoga to improve their physical, mental and spiritual wellbeing.

There are many disciplines of yoga that emphasize different aspects of the mind, body and spirit. However, in the West, mainstream Yoga focuses largely on the physical practice, primarily Hatha Yoga. Hatha is a widespread style that incorporates a series of poses (called Asanas) that emphasize stretching, breathing (called Pranayama), relaxation and meditation techniques to help build strength, increase flexibility, Concentration, balance and improve co-ordination.

Yoga has a lot of definitions floating around in today's world; however, if we go back to the roots of the word, we find that the term "Yoga" has its origins in Sanskrit. It means to 'unite' Yoga helps the body to unite with the other vital meta physical aspects of the mind and spirit. It is also often defined as a lifestyle which aims to have a healthy mind within a healthy body. Most simply defined, yoga is a set of poses or 'asanas', coupled with breathing techniques, which help impart strength and flexibility to the body while helping to balance the mind and its' thinking. Unlike other physical forms of exercises, like the aerobics, by practicing yoga, one can not only achieve physical health, but also mental and spiritual wellbeing.

In today's world, all of us suffer from stress and a perpetual anxiety to perform well, leading to a plethora of diseases that we expose ourselves to. Yoga aims to calm and compose our minds and help us focus clearly on what really matters good health and the happiness that accompanies it. The practice of yoga was first developed in India and has evolved over thousands of years. Yoga disciples use poses or asanas, to prepare their bodies for meditation practice much as an athlete would prepare for a sports competition.

The poses also serve as a means to alter one's consciousness and mental focus in the spiritual quest for "enlightenment. "This spiritually transformative process is, in fact, the overriding purpose of the practice of hatha yoga. In essence, yoga is designed to bring body, mind and spirit into balance. Through the practice of yoga, elite athletes and weekend warriors alike can benefit from this type of balance. This is especially true when athletes have pushed their bodies to the max, resulting in weakness or injury. Yoga can restore awakened body and build it back up. Yoga postures breathe work and inner focus can help rebalance, strengthen and restore overtaxed muscles, joints and ligaments. Through this restoration process, athletes can increase their career longevity and develop an inner balance that will last a lifetime. Balancing the mind, body and spirit is a primary philosophical principle of yoga. It is considered the true way to honor the body.

Athletes in all sports are finding that yogic conditioning not only elongates tight, shortened, fatigued muscles but also brings calmness and clarity to the mind. Some athletes begin the practice to rehabilitate an injury and to gain more flexibility, stability and strength. Others take it up to increase their powers of concentration and quiet the mind. And some do it because they don't want to miss out on what everybody else is raving about! The reasons are many, but the results are consistent. Athletes in all sports are finding that yogic conditioning not only elongates tight, shortened, fatigued muscles but also brings calmness and clarity to the mind. Some athletes begin the practice to rehabilitate an injury and to gain more flexibility, stability and strength. Others take it up to increase their powers of concentration and quiet the mind. And some do it because they don't want to miss out on what everybody else is raving about! The reasons are many, but the results are consistent. While athletes can benefit from all these principles, and they are all equally important to enhancing athletic performance, fitness professionals teaching yoga should focus on the limbs that fall within their area of expertise.

Athletes can benefit from these limbs just as they benefit from other tools they use to optimize their performance. For example, tennis player intent on making contact with the ball and returning it to an exact spot on his opponent's side of the court is exhibiting inner focus, or *dharana*. Now imagine that at the crucial moment of play, a gale-force gust of wind picks up, a fan screams words of encouragement and a car crashes in the parking lot. If the tennis player can completely withdraw his attention from these potential distractions and remain steadfast in play, he will be revealing *pratyahara*. Yoga is an appropriate practice for many athletes, providing physical exercise, breath control and flexibility, as well as mental focus it helps athletes gain knowledge about the mind and body connection, improving body awareness and enhancing mental clarity. Studies conducted by the National Center for Complementary and Alternative Medicine illustrate that the physical benefits of yoga for athletes are lowered heart rate, increased oxygen intake, functional strength and flexibility, but athletes also report enhanced focus and greater concentration.

What are the benefits of yoga :-

- Balance mind and body
 - Improve body strength and stamina
 - Increase total flexibility
 - Increase awareness of tension in the body
 - Assist relaxation through use of breath static stretching
 - Improve general, mental, physical and spiritual health
 - Aids in rehabilitation and healing/preventing injuries
- systems, making them work better.

Benefits of yoga on sports performance :-

1. Mental Health

Let us first begin with the benefits of Yoga on mental health. After all, good mental health is of paramount importance for being healthy physically as well. As advised above,

breathing technique forms an integral part of Yoga. Do asking 'how?' It really is very basic by breathing deep and right, something that you would be doing when you practice Yoga you are inhaling more oxygen and allowing the cells of your body to have access to that oxygen for a longer period of time.

A common practice in yoga is to breathe only from one nostril at a time, while holding the other one closed with the tip of your finger. Medical research has shown that this boosts increased activity of the opposite side of the brain, leading to better cognitive performance and tasks associated with the other side of the brain. Regular yoga practice helps children with attention deficit disorder and people suffering from anxiety, depression and mood swings. It also helps keep the mind calm and reduce stress and thereby increase the general wellbeing of the person.

2. Strength

Ever wondered, why so many of us, after a hard day's work, come and plunk ourselves, on our home sofas, with very little energy to even fetch a glass of water for ourselves. This is caused by lack of inner strength. Certain *asanas* of the yoga help generate inner strength. Inner strength is essential in doing day to day activities and in preventing you from injuries. This is especially useful, as we grow old and need more energy and strength to do the same activity.

3. Flexibility

The popular notion that you need to be flexible in order to do yoga is incorrect; it is really the other way round - you should do yoga so that you can be more flexible. If you have a flexible body, you find it easy to do tasks. A lot of Yoga concentrates on stretching and improving your flexibility. With yoga, not only the muscles of the body, but also the softer tissues of your body are worked out, resulting in less buildup of the lactic acid, which is responsible for stiffness in various parts of the body. Yoga increases a range of motions of the less used inner muscles and helps in lubrication of joints. The result is a more flexible body, able to perform task easily!

4. Cardiovascular

Yoga has a lot of positive effects on the cardiovascular system of our body. A healthy cardiovascular system is responsible for preventing heart attacks, strokes and International Journal of Multidisciplinary Research and Development hyper tension. Heart disease is a problem which has roots in an improper lifestyle, faulty diet and negative thinking. Our thoughts, emotions and feelings affect our body and negative emotions/thoughts send a series of complex and unhealthy chemical processes throughout the body, given alarms that something is amiss. Yoga tends to control these by bringing in fresh life-giving oxygen. The antioxidant properties of Yoga help in preventing the negative emotions and promote a general wellbeing in the body.

5. Joint pain and arthritis

The general tendency of people suffering from joint pain, inflammation and stiffness is to avoid exercise. Yoga helps prevent advancement of this malady by toning the muscles and loosening the joints. When a person suffering from joint pain practices yoga, the gentle stretching and strengthening movements of the various Yogic poses, improves the blood flow to the muscles and tissues supporting the joints, thereby making it more comfortable to move.

6. Respiratory problems

Practice of certain *asanas* of Yoga has helped check chronic cases of Asthma and other respiratory problems. When the nasal passages get inflamed, they start producing mucous in excess making it difficult to breathe and often have common symptoms like coughing, wheezing etc. Respiratory problems could also be caused by multiple factors like allergy, exercise, weather change etc. By practicing yoga, the lungs capacities increase and so does stamina and stress on air passages is reduced.

7. Back pain

Yoga has helped innumerable cases of back ache. Back ache is caused due to stress and tension in the muscles supporting the spinal cord. Back ache may be caused due to improper postures mild injuries, which have been left untreated etc. Yoga has seemed to help cases of back pain by enhancing flexibility and strengthening the muscle groups supporting the spine, helping the body to maintain an upright posture. It eases the back pain by increase in blood circulation and getting healing nutrients to the injured muscles. Apart from healing Injured muscles, it also prevents further injuries by strengthening the muscles.

8. Memory improvement

Yoga helps in retaining information better and for a longer period of time due to its focus on concentration and meditation. By breathing right, concentrating and meditating, more blood flows to the brain, making it supple and ready to accept more information and reproduce that information when required.

9. Obesity

Obesity is when a person weighs more than his normal/stipulated weight. This may be caused due to faulty eating habits; stress related eating, imbalances in the digestive and endocrine system or even something as basic as less physical exercise. Yoga helps obesity by inhaling more oxygen, which helps in breaking down fat cells and increasing your metabolism. Also, it helps remove sluggishness from the digestive and endocrine

10. Asthma

Studies conducted at yoga institutions in India have reported impressive success in improving asthma. It has also been proved that asthma attacks can usually be prevented by yoga methods without resorting to drugs.

11. Respiration Problems

Patients who practice yoga have a better chance of gaining the ability to control their breathing problems. With the help of yogic breathing exercises, it is possible to control an attack of severe shortness of breath without having to seek medical help. Various studies have confirmed the beneficial effects of yoga for patients with respiratory problems.

12. High Blood Pressure

The relaxation and exercise components of yoga have a major role to play in the treatment and prevention of high blood pressure (hypertension). A combination of biofeedback and yogic breathing and relaxation techniques have been found to lower blood pressure and reduce the need for high blood pressure medication in people suffering from it.

13. Pain Management

Yoga is believed to reduce pain by helping the brain's pain center regulate the gate controlling mechanism located in the spinal cord and the secretion of natural painkillers in the body. Breathing exercises used in yoga can also reduce pain. Because muscles tend to relax when you exhale, lengthening the time of exhalation can help produce relaxation and reduce tension. Awareness of breathing helps to achieve calmer, slower respiration and aid in relaxation and pain management.

Effects of yoga on different factors Physical Effects

1. Increase suppleness through stretching muscles
2. Improves joint mobility by lengthening ligaments to their healthy limits
3. Reduces risk of injury and assists with injury rehabilitation
4. Effective as a form of soft tissue and collagen fiber rehabilitation
5. Helps to bring the body back into alignment and improves posture
6. Increases stride length
7. Enhances co-ordination and agility

8. Contributes to improved cardiovascular fitness and stamina
9. Teaches athletes how the body performs and functions as a synergistic unit
10. Lowers resting heart rate and increases VO2 max

Psychological effects :-

1. Relieves performance anxiety and stress, and frees athletes from mental distractions
2. Improves focus International Journal of Multidisciplinary Research and Development
3. Develops determination and self-discipline
4. Teaches athletes to challenge themselves and go outside of their comfort zone
5. Reduces stress and provides a method of relaxation
6. Breath work provides athlete with techniques they can use whilst competing to control arousal levels
7. Helps athletes to achieve flow and get in the zone'
8. Teaches athletes how to use imagery and relaxation
9. Helps athletes to understand the importance of relaxing, resting, and recovering

Team effects

1. Improves team cohesion
2. Increases team motivation
3. Provides an opportunity for team unity outside the demands of intense training
4. Increases trust
5. Improves player-player support

Conclusion

Overall, the studies comparing the effects of yoga and exercise seem to indicate that, in both healthy and diseased populations, yoga may be as effective as or better than exercise at improving a variety of health-related outcome measures including HRV, to improve subjective measures of fatigue pain, and sleep in healthy and ill populations. However, future clinical trials are needed to further examine the distinctions between exercise and yoga, particularly how the two modalities may differ in their effects on sports performance. Researcher find out that yoga in sports as important as other think it helps us in different ways and different levels in a sports men life.

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श्रीमद् भगवद्गीता में वर्णित ज्ञानयोग का शैक्षिक विश्लेषण

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प्रस्तावना :-

भारतीय दर्शन को परम्परा के आधार पर आस्तिक एवं नास्तिक दो भागों में बाँटा जाता है। आस्तिक दर्शन के अन्तर्गत वे दर्शन आते हैं जो वेदों में विश्वास करते हैं तथा नास्तिक दर्शन के अन्तर्गत वेदों में विश्वास न करने वाले दर्शन आते हैं। आस्तिक दर्शन के अन्तर्गत सांख्य, योग, न्याय, वैशेषिक, पूर्व एवं उत्तर मीमांसा ये षडर्शन आते हैं। गीता आस्तिक दर्शनों की कोटि में आता है।

श्रीमद्भगवद्गीता में सन्निहित शिक्षा के उद्देश्य की आवश्यकता महसूस की जा रही है, उसके सर्वथा अनुकूल है। वर्तमान शिक्षा का उद्देश्य बालक की व्यावसायिक कुशलता के विकास को आधार बनाकर उसका सामाजिक, नैतिक, चारित्रिक, शारीरिक, बौद्धिक एवं मानसिक विकास करना है। श्रीमद्भगवद्गीता में सन्निहित शिक्षा आत्मबोध की भावना का विकास करने की आवश्यकता बताती है।

वर्तमान समय में आदर्श, सदगुणी एवं मूल्यों से युक्त एक पूर्ण मानव का निर्माण करने की जो आवश्यकता महसूस की जा रही है, उसकी पूर्ति गीता भी करना चाहती है। इस संदर्भ में शिक्षा के साथ मनोविज्ञान का महत्व भी व्यक्ति के चरित्र निर्माण हेतु बढ़ जाता है।

समस्या का औचित्य :-

आज का मानव पाश्चात्य की तरफ बढ़ रहा है। इसी भौतिकवाद के कारण मनुष्य अपने जीवन के मूल्यों को भूल गया है। इस भोगवाद के कारण मनुष्य चारों तरफ से दुःखी और निराश हो रहा है। उसके मन में कुण्ठा, तनाव तथा दुश्चिन्ता बढ़ रही है। ज्ञानयोग का इस परिपेक्ष्य में महत्व है कि वह व्यक्ति को भोगवाद से दूर ले जाता है तथा उसे सन्तुलित मन बुद्धि व इन्द्रिय वाला बनाता है। ज्ञानयोग मनुष्य को चेतावनी देते हुए कहता है कि- ये इन्द्रिय तथा विषयों के संयोग से उत्पन्न होने वाले भोग हैं, यद्यपि यह सुखकर लगते हैं, परन्तु यह दुःखकारी हैं, इनसे सुख प्राप्त नहीं किया जा सकता क्योंकि ये अनित्य हैं, बुद्धिमान पुरुष इनसे दूर रहता है।

वर्तमान में मनुष्य सांवेगिक रूप से अस्थिर हो रहा है। वह कामुक तथा क्रोधी हो रहा है। ज्ञानयोग इससे बचने की सलाह देता है और कहता है कि काम-क्रोध शरीर का नाश करने वाले हैं, अतः मनुष्य को चाहिए कि वह इनसे बचकर रहे। काम-क्रोध से रहित ज्ञान पुरुष परमात्मा का साक्षात्कार करते हैं।

श्रीमद्भगवद्गीता एक ऐतिहासिक ग्रन्थ ही नहीं है, प्रत्युत इसमें द्वन्द्व, कुण्ठा, संत्रास से ग्रस्त मानव जाति के कल्याण के निमित्त अनेक करणीय और अकरणीय मन्तव्य भी विद्यमान हैं। गीता का आरम्भ ही इस सारगर्भित कथन से है-

क्लैब्यं मा स्म गमः पार्थ नैतत्त्वय्युपपद्यते।

क्षुद्रं हृदयदौर्बल्यं त्यक्तोत्तिष्ठ परंतप॥

अर्थात् उठ हे पार्थ। नपुंसकता को मत प्राप्त हो, तुझमें यह उचित नहीं जान पड़ती। हे परंतप! हृदय की तुच्छ दुर्बलता को त्यागकर युद्ध के लिये खड़ा हो जा।

अध्ययन के उद्देश्य :-

- १ श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग के अनुसार शिक्षा का विश्लेषण करना।
- २ श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग के अनुसार पाठ्यक्रम का अध्ययन करना।
- ३ श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग के अनुसार शिक्षण विधियों का अध्ययन करना।
- ४ श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग के अनुसार शिक्षक-छात्र संकल्पना का अध्ययन करना।
- ५ श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग के अनुसार अनुशासन का अध्ययन करना।

शोध विधि :-

शोधकर्ता द्वारा अपने सम्बन्धित अध्ययन हेतु दार्शनिक अनुसंधान विधि को स्वीकार किया गया है। किसी दार्शनिक समस्या का व्यवस्थित रूप में किया गया अध्ययन ही दार्शनिक शोध कहलाता है। प्रस्तावित शोध कार्य में श्रीमद्भगवद्गीता में वर्णित ज्ञानयोग का शैक्षिक विश्लेषण किया जाता है। इस हेतु विश्लेषणात्मक एवं व्याख्यात्मक विधि का प्रयोग किया गया है। इस अध्ययन के लिये वांछित सूचनाएँ प्राप्त करने के लिये प्राथमिक स्रोत के अन्तर्गत श्रीमद्भगवद्गीता के मूल पाठ को आधार बनाकर इसमें निहित ज्ञानयोग एवं गौण स्रोत के अन्तर्गत श्रीमद्भगवद्गीता पर लिखी गई विभिन्न टीकाओं, पुस्तकों, प्रकाशित लेख, शोधकार्यों एवं विभिन्न व्याख्याओं का अध्ययन स्वीकार किया गया है।

शोध कार्य के निष्कर्ष :-

१) ज्ञानयोग के अनुसार शिक्षा का विश्लेषण करना :

अ) ज्ञानयोग में शिक्षा की परिभाषा से ली गई है। इसमें अनुसार ज्ञान के समान अन्य कोई पवित्र नहीं है। यह व्यक्ति के अन्तःकरण को पवित्र कर देता है। ज्ञान की शक्ति से मनुष्य के सम्पूर्ण पाप नष्ट हो जाते हैं। ज्ञानयोग ने शिक्षा की उपर्युक्त परिभाषा देते हुए कहा कि “जो प्रत्येक व्यक्ति में निहित ब्रह्म अथवा परमात्मा की अनुभूति करवाने में सहायक हो, वह शिक्षा है। इस अन्तरात्मा के दर्शन वह मनुष्य ही कर सकता है, जिसके ज्ञानचक्षु खुल गये हैं, मोहान्ध प्राणी नहीं।”

२) ज्ञानयोग के अनुसार ज्ञान दो प्रकार का होता है—(अ) अपरा ज्ञान या सांसारिक ज्ञान, (ब) परा ज्ञान या आध्यात्मिक ज्ञान अपरा ज्ञान निम्न श्रेणी का ज्ञान है। अपरा ज्ञान के अन्तर्गत – पृथ्वी, जल, वायु, अग्नि, आकाश, मन और बुद्धि का अध्ययन किया जाता है। परा ज्ञान अपरा ज्ञान से श्रेष्ठ है, इसे आध्यात्मिक ज्ञान भी कहा जाता है। इसका स्वरूप चैतन्य है। इसके अन्तर्गत आत्मा और परमात्मा का अध्ययन किया जाता है। यह ज्ञान सम्पूर्ण संसार को धारण करता है।

३) ज्ञानयोग में ज्ञान तथा बुद्धि का वर्गीकरण गुणों के आधार पर किया गया है। इसके अनुसार प्रत्येक व्यक्ति में तीनों गुण पाये जाते हैं, उनमें से प्रत्येक व्यक्ति में एक सक्रिय होता है उसी के अनुसार उसका ज्ञान तथा बुद्धि होती है। इन तीनों गुणों के बारे में कहा गया है कि पृथ्वी या स्वर्ग में अथवा देवताओं में से ऐसा प्राणी नहीं है जो इन तीनों गुणों से रहित है। ये तीन गुण हैं – सत्व, रज और तम। इसी के आधार पर ज्ञान तथा बुद्धि का वर्गीकरण क्रमशः इस प्रकार किया है – सात्विक ज्ञान, राजस ज्ञान और तामसिक ज्ञान

तथा सात्विक बुद्धि, राजसिक बुद्धि और तामसिक बुद्धि। इनमें सात्विक ज्ञान और सात्विक बुद्धि श्रेष्ठ है। इससे परमात्मा की अनुभूति हो सकती है।

ज्ञानयोग के अन्तर्गत शिक्षा उद्देश्य के आधार पर निष्कर्ष :-

१. स्वकर्तव्य की भावना तथा दूसरों के कर्तव्यों में हस्तक्षेप न करने की भावना का विकास करना ज्ञानयोग में शिक्षा का उद्देश्य है।
२. अनासक्त कर्म करने की क्षमता का विकास शिक्षा का उद्देश्य है। ज्ञान से व्यक्ति कर्मों में भेद करता है। इस शक्ति से ही व्यक्ति निष्काम कर्म कर सकता है।
३. ज्ञानयोग का उद्देश्य है कि अपने अधिकार के स्थान पर व्यक्ति अपने कर्तव्य का पालन करें। यदि वह अपने कर्तव्य का पालन करे तो अधिकार तो उसे अपने आप ही प्राप्त हो जायेंगे।
४. ज्ञानयोग व्यक्ति के लिये शिक्षा की व्यवस्था करता है जो समत्व बुद्धि का विकास करें। इस बुद्धि से व्यक्ति पाप-पुण्य दोनों में लिप्त नहीं रहता।
५. ज्ञानयोग का उद्देश्य ऐसा कुशल नागरिक तैयार करना है, जो अपने कर्तव्य की ओर उन्मुख रहे, स्वाभाविक गुण के अनुसार निष्ठापूर्वक अपना कार्य करें।
६. ज्ञानयोग के अनुसार प्राप्ति करने का उद्देश्य व्यक्ति में कामनाओं की समाप्ति करना, इन्द्रियों पर नियंत्रण करना व आत्मानुभूति करवाना है जिससे वह परमात्मत्व का दर्शन कर सके।
७. ज्ञान व्यक्ति के काम, क्रोध, मद, लोभ, मोह, माया आदि को दूर करके इन्द्रिय निग्रह द्वारा मोक्ष प्राप्त कराता है,

जिससे वह नैतिक-अनैतिक, कर्म-अकर्म तथा अच्छा-बुरा का विचार कर सके। इसके साथ ही ज्ञान का उद्देश्य अज्ञान का नाश करना है।

ज्ञानयोग के अनुसार पाठ्यक्रम के अध्ययन से प्राप्त निष्कर्ष :-

१ गीता में पाठ्यक्रम को दो भागों में बांटा गया है -

(अ) परा विद्या पाठ्यक्रम (ब) अपरा विद्या पाठ्यक्रम। अपरा विद्या पाठ्यक्रम के अन्तर्गत भौतिक, रसायन, यांत्रिकी, शरीर विज्ञान, मनोविज्ञान, तर्कशास्त्र, स्वास्थ्य विज्ञान, जीव विज्ञान, अर्थशास्त्र, खेल, व्यायाम, समाज विज्ञान के विषय एवं कला, साहित्य, संगीत का अध्ययन किया जाता है। परा विद्या पाठ्यक्रम के अन्तर्गत अध्यात्म विज्ञान, इन्द्रिय, मन एवं बुद्धि को वश में संबंधी क्रियाएँ, योगाभ्यास, ध्यान-धारणा, समाधि, प्राणायाम आदि का अध्ययन किया जाता है।

२. ज्ञानयोग में पाठ्यक्रम को व्यक्तिगत भिन्नता के अनुसार बांटा गया है -

सात्विक पाठ्यक्रम, राजसिक पाठ्यक्रम तथा तामसिक पाठ्यक्रम। सात्विक पाठ्यक्रम अध्यात्म से संबंधित है, इसके अन्तर्गत इन्द्रिय निग्रह, अन्तःकरण की शुद्धता, बाह्य अन्तर संबंधी शुद्धता का अध्ययन किया जाता है। राजसी पाठ्यक्रम में युद्धकला, प्रशासन, शूरवीरता, धैर्य आदि का अध्ययन किया जाता है। तामसी पाठ्यक्रम में खेती, गौ-पालन, व्यापार आदि क्रियाओं का अध्ययन किया जाता है।

३. ज्ञानयोग के अनुसार शिक्षण विधियों के अध्ययन से प्राप्त निष्कर्ष :-

ज्ञानयोग में शिक्षण विधियों में प्रश्न-प्रतिप्रश्न विधि, विचार-विमर्श विधि, श्रवण विधि, स्वाध्याय विधि को शामिल किया।

गुणों के आधार पर अलग अलग शिक्षण विधियों का वर्णन किया गया है – सात्विक ज्ञान की विधि, राजसिक ज्ञान की विधि तथा तामसिक ज्ञान की विधि।

ज्ञानयोग के अनुसार शिक्षक-छात्र संकल्पना के अध्ययन से प्राप्त निष्कर्ष :-

1. ज्ञानयोग के अनुसार छात्र शरीर, मन बुद्धि एवं आत्मा का संयोग है। छात्र चार प्रकार के होते हैं- आर्त, जिज्ञासु, अर्थार्थी एवं ज्ञानी। त्रिगुण बंधन के बालक तीन प्रकृति के होते हैं, सात्विक, राजसिक तथा तामसिक।
2. ज्ञानयोग ने शिष्य की कुछ योग्यताएँ अपेक्षित मानी हैं। छात्र में ज्ञान प्राप्त करने के लिये संयम तथा तप होना चाहिए। छात्र का अपने शिक्षक के प्रति समर्पण भाव होना चाहिए। छात्र अध्यापक के प्रति सामर्थ्यपूर्ण विश्वास रखें।
3. ज्ञानयोग में शिक्षक संकल्पना स्पष्ट करते हुए बताया गया है कि शिक्षण प्रक्रिया में शिक्षक का स्थान उच्च एवं महत्वपूर्ण है। शिक्षक परब्रह्म का अवतार है।
4. शिक्षक में ज्ञान प्राप्त व्यक्ति के सभी लक्षण होना अनिवार्य है। वह शिष्य को चिंतामुक्त कर आशा का संचार करे। शिक्षक कार्य शिष्य को चिंतामुक्त करना, आशा का संचार करना तथा उसका उत्साहवर्धन करना है।
5. गुरु-शिष्य संबंध मित्रवत होने चाहिए। श्रीकृष्ण और अर्जुन दोनों मित्र थे। शिक्षक बालक की योग्यताओं को पहचानकर उसके अनुसार शिक्षा दे। शिष्य के हृदय में गुरु के प्रति श्रद्धा हो तथा गुरु के हृदय में शिष्यवत्सलता हो।

ज्ञानयोग के अनुसार अनुशासन के अध्ययन से प्राप्त निष्कर्ष :-

1. ज्ञानयोग के छात्र संयमित आहार तथा संयमित निद्रा लेने वाला होना चाहिए। छात्र अपनी दिनचर्या को नियमित रखें।
2. गीता में गुणों का महत्वपूर्ण स्थान है। गुण अनुशासन को प्रभावित करते हैं। सात्विक गुण वाले छात्र में अनुशासन श्रेष्ठ होता है। राजसिक गुण वाले छात्र चंचल तथा तामसिक गुण वाले छात्र आलसी होते हैं।
3. छात्र को अपनी इन्द्रियों पर नियंत्रण करना चाहिए, उससे ही ज्ञान प्राप्त कर सकता है।
4. श्रद्धावान छात्र ही ज्ञान प्राप्त कर सकता है। श्रद्धारहित बालक को ज्ञान संभव नहीं है।

शैक्षिक निहितार्थ :-

श्रीमद्भगवद्गीता में श्रीकृष्ण एक शिक्षक के रूप में अपने आप में पूर्ण व्यक्तित्व हैं तथा अर्जुन एक सुपात्र विद्यार्थी के रूप में अपने आप में पूर्ण व्यक्तित्व है। श्रीकृष्ण में एक महान शैक्षिक प्रशासक एवं शिक्षण व्यूह रचनाविद् के समस्त गुण विद्यमान हैं। वर्तमान समय में शिक्षकों के लिये श्रीकृष्ण एक महान आदर्श है। श्रीकृष्ण ने एक गुरु (शिक्षक) की समस्त मर्यादाओं का पालन करते हुए अपने शिष्य अर्जुन को उसके उद्देश्य की प्राप्ति के लिये प्रेरित किया। इसी प्रकार वर्तमान समय में शिक्षक अपनी धार्मिक एवं सामाजिक मर्यादाओं का पालन करते हुए अपने शिक्षक धर्म का निर्वहन कर सकता है।

गीता का ज्ञान न केवल शिक्षकों एवं विद्यार्थियों के लिये वरन् शिक्षा मंत्रियों, शिक्षाविदों एवं व्यवस्थापकों के लिये भी लाभदायक है। भगवद्गीता में शिक्षण कौशल, शिक्षण विधियों, शैक्षिक उद्देश्यों को लेकर मूल्यांकन तक

के समस्त शैक्षिक तत्व निहित हैं। इस प्रकार श्रीमदभगवद्गीता शिक्षा संबंधी तथ्यों से परिपूर्ण है जिसका अध्ययन शिक्षा के क्षेत्र में अपरिहार्य हैं।

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कोरोना महामारी के सापेक्ष आर्षचिन्तनः**डॉ. ज्योति वर्मा**

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वेद अर्थात् ज्ञान का संग्रह। असीमित ज्ञान राशि स्वरूप वेद हमारी संस्कृति और सभ्यता के लिये अद्वितीय वरदान हैं। इसमें मानव जीवन के विविध पहलुओं पर विस्तृत रूप से विचार विमर्श हमारे ऋषि मुनियों द्वारा किया गया है। कर्म करते हुये सौ वर्षों तक जीवन जीने की इच्छा करना वेदों का कोरा सन्देश नहीं है। बल्कि वह जीवनोपयोगी भूमि, जल, यज्ञ, औषधियाँ, चन्द्रमा, नक्षत्र, सूर्य आदि प्राकृतिक तथ्यों का सन्तुलित उपयोग एवं रक्षा का सिद्धान्त उदाहरण सहित प्रस्तुत करता है वैदिक ज्ञान से रहित मनुष्य अपने पर्यावरण को निरन्तर असन्तुलित दोहन कर रहा है। जिससे पर्यावरण सम्बन्धी अनेकशः समस्यायें जैसे वायुमंडल का असन्तुलन, बर्फ का पिघलना, अनावृष्टि, अतिवृष्टि जनित बाढ़ महामारी आदि विकराल रूप ले रही है।

आज सारा विश्व कोरोना महामारी से जूझ रहा है। एक नन्हे से विषाणु ने सारी दुनियाँ में खलबली मचा दी है। ज्ञान विज्ञान से सम्पन्न बड़े-बड़े विकसित राष्ट्र भय और संत्रास से भरे हुये हैं। गति के सभी पहिये थमे हुये हैं। प्रत्येक व्यक्ति मृत्यु के इस भयानक विषाणु से भयभीत है। विषाणु की व्यापकता को देखते हुये विश्व स्वास्थ्य संगठन ने 11^{वीं} फरवरी 2020 को इसे वैश्विक महामारी घोषित कर दिया। वैज्ञानिक तन्त्र के समस्त आधार निराधार हो गये हैं। असुरक्षा की भावना ने मनुष्य को नये सिरे से सोचने के लिये मजबूर कर दिया है। संसार का दृष्टिकोण बदल गया है। जीवन आज कीमती हो गया है। कोविड महामारी का यह काल हर किसी के लिये आत्मचिन्तन का समय है। चेतना के धरातल पर जीवन की वास्तविक आवश्यकताओं को समझने का अवसर है। आत्म रक्षा की भावना और जीने की इच्छा ही सभ्यता के विकास की प्रेरक रही है। जीने की इच्छा और जीवन शैली का विकास मृत्यु की छाया में ही हुआ है। प्राकृतिक आपदायें या युद्ध वीभत्स मृत्यु भय लाते हैं। व्यापक जनहानि वाली आपदायें जीवन का दृष्टिकोण बदलती हैं। चार्ल्स डार्विन प्राकृतिक इतिहास और भूगर्भ शास्त्रीय खोज में विश्वयात्रा पर थे। एक दिन एकायक भूकंप आया। वह उठे, चक्कर आया, गिरे। उन्होंने अपने इस अनुभव को जरनल आफ रिसर्च में लिखा- 'भूकंप पुराने से पुराने भावनात्मक सम्बन्धों को नष्ट करता है। अल्प समय में जो असुरक्षा की धारणा बनी वह दीर्घकाल के चिन्तन से न पैदा होती'। सामने खड़ी मृत्यु जीवन दृष्टिकोण बदलती है। कोरोना से हुई मौतों ने जीवन दृष्टिकोण बदल दिया है। भारत में, महाभारत काल में शांति की सारी वार्तायें असफल हुईं। महायुद्ध हुआ। यह राष्ट्रीय आपदा थी। युधिष्ठिर युद्ध जीत गये, लेकिन नरसंहार ने उन्हें व्यथित किया। जीवन का दृष्टिकोण बदला। वे सत्ता सम्भालने को तैयार न थे। कलिंग युद्ध के बाद अशोक का भी जीवन दृष्टिकोण बदल गया। कोरोना आपदा के प्रभाव में संपूर्ण समाज में सकारात्मक परिवर्तन आया है। इस महामारी ने मनुष्य और प्रकृति के बिगड़े सम्बन्ध पर फिर ध्यान दिलाया है। मानव सभ्यता भौतिक, मानसिक और आध्यात्मिक स्तरों पर बार-बार आसानी से चोट खाती रही है। उन्नत विज्ञान और

तकनीक इन चोटों से हमें बचाने में असमर्थ हैं। तब एक स्वस्थ और सद्भाव पूर्ण जीवन के लिये मानवता को क्या करना चाहिये? इस पर विचार करने के लिये हमें आर्ष चिन्तन करना जरूरी है।

उद्देश्य :

१. ईश्वर ने मानव सृष्टि के पहले वृक्ष वनस्पति आदि प्राकृतिक तत्वों की रचना इसलिये की थी क्योंकि उसे अपनी सन्तान के लिये भोजन, प्राणवायु, आच्छादन तथा रोग ग्रस्त होने पर औषधि के लिये वनस्पतियों से प्राप्त औषध की व्यवस्था करनी थी। मानव इन्हीं वनस्पतियों की देखरेख में विकसित हुआ। भूख लगने पर कन्दमूल-फल का भोजन, तन ढकने के लिये वृक्षों की छाल तथा पत्तों का आच्छादन, वृक्षों की छाया में धूप-ताप तथा वर्षा से संरक्षण तथा इन्हीं वृक्षों के फल, मूल, पुष्प, से व्याधि निवारण कर मनुष्य अपनी जीवन रक्षा करता रहा है। दन्त धावन से लेकर आहार तक तथा वस्त्र धारण से लेकर शय्या तक इन्हीं वनस्पतियों का प्रयोग करता रहा है।

प्रकृति के इसी अवदान को भारतीय ऋषि मुनियों ने हजारों वर्ष पहले भारतीय संस्कृति के मूल ग्रन्थों में संकलित किये हैं। इन ग्रन्थों में अंतरिक्ष में पाये जाने वाले पांच तत्व:- पृथ्वी, जल, वायु, अग्नि और आकाश द्वारा हम पर पड़ने वाले प्रभावों के बारे में विस्तृत वर्णन प्राप्त होता है। प्रस्तुत शोध पत्र में मानव और प्रकृति के इसी अन्तः सम्बन्ध को स्थापित करने का प्रयास संस्कृत साहित्य के मूल ग्रन्थों के आलोक में किया जायेगा।

२. “योगक्षेम वहाम्यहम्” अप्राप्त की प्राप्ति और प्राप्त की सुरक्षा गीता में भगवान कृष्ण का उद्घोष है। ईश्वर द्वारा प्रदत्त इस अनमोल मानव जीवन को किस प्रकार सुरक्षित किया जाय? कैसे आद्य-व्याधियों से मानव शरीर और समस्त प्राणिमात्र की रक्षा की जाय? वर्तमान में सम्पूर्ण विश्व में जो स्वार्थपरायणता, कामुकता, धनलोलुपता और वैरभाव व्याप्त है उसके लिये क्या समाधान खोजा जाय? कोविड-१९ महामारी ने सम्पूर्ण विश्व को शारीरिक, मानसिक, आध्यात्मिक तथा आर्थिक, समाजिक रूप से पंगु बना दिया है। कैसे एक निरोग, कृपायुक्त, विश्वामित्र, समाज की स्थापना की जाय? इन समस्त बिन्दुओं के उत्तर प्रस्तुत आलेख में खोजने का प्रयास किया जायेगा। जिससे वैश्विक परिवेश में एक स्वस्थ, स्वच्छ, विकासशील तथा कल्याणकारी समाज की पुर्नस्थापना हो सके।

३. “स्वस्थस्य स्वास्थ्य रक्षणम्, आतुरस्य विकार प्रशमनं च” आयुर्वेद का मूल उद्देश्य स्वस्थ व्यक्ति के स्वास्थ्य की रक्षा करना तथा रूग्ण के रोग को दूर करना एवं व्यक्ति को आरोग्य प्रदान करना है। विश्व के प्राचीनतम साहित्य में उपलब्ध औषध विज्ञान भारतीय मनीषियों के चिरकालिक चिन्तन का फल है। आयुर्वेद पर व्यवस्थित रूप में सबसे पुराने ग्रंथ चरक संहिता, सुश्रुत संहिता आदि हैं। ये ग्रन्थ स्वस्थ एवं आनन्दमय जीवन के लिये हमें मार्ग दर्शन करते हैं। पंचतत्वों से बने इस शरीर को संतुलित करने के लिये आयुर्वेद, प्राचीन प्राकृतिक चिकित्सा और समग्र वैदिक शास्त्र एक चिकित्सा पद्धति पेश करता है। यह पद्धति रोग की रोकथाम तथा रोग के मूल कारणों को समाप्त करने के बारे में बताती है।

४. आयुर्वेद के प्रभाव और सुरक्षित चिकित्सा ने लोगों को सदियों से आकर्षित किया है साथ ही इसने अपनी विश्वसनीयता भी कायम रखी है वैज्ञानिकों का मानना है कि प्राकृतिक जड़ी बूटियों पेड़ पौधों और जीवन पद्धति पर आधारित होने के कारण आयुर्वेदिक चिकित्सा का कोई दुष्प्रभाव भी नहीं है। हल्दी, लौंग, अदरक, तुलसी, गिलोय आदि से बने नुस्खे वर्तमान समय में फैली कोरोना महामारी से निपटने में कारगर सिद्ध हुये हैं।

संस्कृत वाङ्मय में आर्ष चिंतन :

संस्कृत साहित्य में महर्षि वाल्मीकि कृत रामायण आदि काव्य समझा जाता है तथा वाल्मीकि आदि कवि माने जाते हैं। व्याध के बाण से बिंधे हुये क्रौंची का करुण शब्द ऋषि ने सुना तो उनके मुख से अकस्मात् व्याध के लिये शाप निकल गया¹:-

मा निषाद प्रतिष्ठा त्वमगमः शाश्वतीः समाः।

यत् क्रौंच मिथुनादेकमवधीः काममोहितम्॥

उपर्युक्त श्लोक यद्यपि महर्षि के द्रवित हृदय से निःसृत प्रथम काव्य सृजन की ओर संकेत करता है। किन्तु यहाँ पर्यावरण के अंग रूप पक्षी की हिंसा से कुपित आदि कवि की वाणी से व्याध का शापित होना पर्यावरणीय चिन्तन का स्वाभाविक संकेत देता है। एक निरपराध पक्षी की हत्या को अक्षम्य मानते हुये, कवि ने उसको दण्डित कर, सम्पूर्ण सृष्टि के लोगों को पर्यावरणीय संरक्षण अत्यावश्यक बताया है। पर्यावरण एक ऐसे तत्व समूह की आवृत्ति है, जो सम्पूर्ण सृष्टि के अस्तित्व के लिये आवश्यक है। यह एक ऐसा आवरण है, जिसके समृद्ध होने पर सम्पूर्ण चराचर जगत समृद्ध होता है तथा जिसके विकृत होने पर निखिल ब्रह्माण्ड के विनष्ट होने की आशंका उत्पन्न होने लगती है। अतः लोक कल्याणार्थ प्रकृति का समृद्ध होना ही श्रेयस्कर है।

आधुनिक समाज तथा राष्ट्र पर्यावरण के असहनीय असन्तुलन को ठीक करने के लिये अनेकों प्रयास कर रहे हैं। वैश्विक उपाय अपनाये जा रहे हैं। वेदों में हमें हमारी पृथ्वी के समृद्धशाली तत्व वायु, जल, वनादि की रक्षा एवं उनके उपयोग के सुरक्षित तरीके बताये गये हैं। वेदों में जीवन के घटक-वायु, जल, पेड़, पौधे, भूमि, आकाश, सूर्य, चन्द्र, अग्नि, आदि को देव कहा गया है। देव अर्थात् “दिव्यगुणसमन्वितम्”। पृथ्वी जो हमारे जीवन की आधारभूमि है, जिस पर हम खड़े होते हैं, जिस पर हमारा सम्पूर्ण जीवन आरुढ़ है, जन्मदात्री माँ की गोद के बाद हम धरती की गोद में ही खेलते हैं। इसलिये वेद धरती पर पैर रखने से पूर्व उसको स्पर्श कर नमन करने का आदेश देते हैं। वेद धरती को माँ कहकर उसे स्वच्छ रखने तथा उसकी रक्षा करने के लिये प्राणों की बलि देने को कहते हैं-‘माता भूमिः पुत्रोऽहं पृथिव्याः² वयं तुभ्यं बलिहृतः स्याम’। मनुष्य और भूमि के सुखद सम्बन्धों को बताते हुये वेद कहते हैं-‘पृथिवि मातर्मा मा हिंसीनोऽहंत्वाम्’।³

अर्थात् हे भूमि माता, तुम हमारी हिंसा न करो हम तुम्हारी हिंसा न करें। यहाँ भूमि हिंसा से अभिप्राय है कि हम उस पर पैदा होने वाले पेड़ पौधों को निर्दयतापूर्वक न काटें। कीटनाशकों का उपयोग भी एक प्रकार की हिंसा है। रासायनिक उर्वरकों का प्रयोग भी भूमि को प्रदूषित करता है। वेद का कथन है कि-‘उपास्थारन्ते अनमीवा अयक्ष्मा’⁴। अर्थात् भूमि का बाह्य और भीतरी भाग कीटाणु मुक्त हो इसके लिये वेद का संदेश है कि उत्तान यानि लेटी हुई पृथ्वी का हृदय यदि क्षतिग्रस्त हो गया हो तो मातरिश्वा वायु उसमें पुनः प्रवेश कर शक्ति का अनुसन्धान कर दे। अभिप्राय यह है कि कम उपजाऊ भूमि को कुछ समय के लिये छोड़ दें तो वह पुनः शक्ति सम्पन्न हो जायेगी।

स्वच्छ जल का सेवन हमारे शरीर के लिये महत्वपूर्ण है। इसलिये वेद मनुष्यों को आदेश देता है कि-‘मापो मौषधीहिंसीः’⁵। तू इन जलों और औषधि की हिंसा मत कर अर्थात् इनको दूषित मत करो। क्योंकि ‘आपस्वन्तरमृतम् अप्सु भेजषम्’⁶ शुद्ध जल अमृत के समान होता है। शुद्ध जल का पान और शुद्ध जल से स्नान शरीर को रोग मुक्त और स्वच्छ रखता है। ‘शन्नो देवीरभिष्टय आपो भवन्तु पीतये। शं योऽभिस्त्रवन्तु नः’⁷। इस मन्त्र में कहा गया है कि शुद्ध जलों को पीकर और उसमें डुबकी लगाकर हम अपना अभीष्ट

स्वास्थ्य प्राप्त कर सकते हैं। वेद में प्रदूषित जल को शुद्ध करने का उपाय भी प्राप्त होता है- 'यासु राजा वरुणो यासु सोमो विश्वेदेवा यासूर्जं मदन्ति' वैश्वानरो यास्वग्निः प्रविष्टस्ता आपो देवीरिह मामवन्तु।

इस मन्त्र में सूर्य और वैश्वानर द्वारा प्रदूषित जल को शुद्ध करने का उपाय बताया है। यजुर्वेद में यन्त्रों द्वारा प्राकृतिक रूप से सूर्यताप को जल में पहुंचाना जल शोधन का उपाय बताया गया है। अथर्ववेद में जल को समस्त रोगों को दूर करने वाली औषधियों में परम कुशल चिकित्सक के रूप में ऋषि ने वर्णित किया है।^६

वायुप्राण शक्ति है। इसके बिना हम जीवन की कल्पना भी नहीं कर सकते। स्वच्छ वायु का सेवन समस्त चराचर जगत के लिये हितकारी है। ऋग्वेद में ऋषि वायुदेव से प्रार्थना करता है, "हे वायु! तुम्हारे घर में जो अमृत निधि है उसमें से कुछ अंश हमें भी प्रदान करें"- 'यददो वात ते गृहऽभृतस्यनिधिर्हितः। ततो नोदेहि जीवसे'।^{१०} दूसरे मन्त्र में ऋषि प्रार्थना करता है, हे प्राणवायु आप हमें ऐसी औषधि प्रदान करें जो हमारे हृदय के लिये शान्ति कर एवं आरोग्यकर हो, तथा हमारी आयु , को बढ़ाये - 'वात अवातु भेषजं शम्भु मयोभु नो हृदे। प्राण आयुंषि तारिषतः'।^{११}

यह वैज्ञानिक सत्य है कि वायुमंडल में कार्बन डाई आक्साइड की मात्रा अत्यधिक हो जाने से वायु प्रदूषित हो जाती है। हमारे पर्यावरण में स्थित पेड़ पौधे और विभिन्न वनस्पतियाँ कार्बन डाईआक्साइड ग्रहण कर ऑक्सीजन छोड़ते हैं। वायु को प्रदूषण से बचाने के लिये वेद आदेश देता है कि वनस्पतियाँ उगाओ 'वनम् आस्थाप्यध्वम्'। वृक्षारोपण करो। 'औषधीः प्रति मोदध्वं पुष्पवती प्रसूवतीः'।^{१२} अर्थात् फूलों से लदी औषधियाँ लहलहाती रहें। एक स्थान पर ऋषि मनुष्यों को सलाह देता है कि तुम पीपल के नीचे बैठो और पलाश के पेड़ों के समीप बस्ती बनाओ- 'अश्वत्थे वो निषदनं पर्णे वो वसति कृता'^{१३}।

ये दोनों वृक्ष अनवरत ऑक्सीजन प्रवाहित करते हैं। इसलिये इनके समीप रहने को कहा गया है। यज्ञ का भारतीय संस्कृति में विशेष महत्व है। अग्निहोत्र की आहुति में डाले गये धृत, चन्द्र, केसर, कस्तूरी, अगरु, अन्न आदि दिव्य पदार्थों की हवि प्रदूषित वायुमण्डल के प्रदूषण को दूर करती हैं और हमें शुद्ध वायु प्रदान करती है। अग्नि में होमी हुई हवि वायुमण्डल के रोग कृमि रूप या यातुधानों को वैसे ही विनष्ट कर देती है जैसे नदी झागों को- 'इदं हर्वियीतु घानान् नदी फेनमिवावहत्'।^{१४} ऋषि कहता है यज्ञ का फल चारों दिशाओं में फैलता है इसलिये हे मनुष्यों तुम अग्नि में शोधक द्रव्यों की आहुति देकर वायुमण्डल को शुद्ध करो।

भारतीय संस्कृति में सूर्य की अतिशय महिमा रही है। सूर्य लोक मंगल के लिये अनवरत गतिशील रहते हुये कर्मशीलता का अनुपम निदर्शन है। अपने प्रकाश से समग्र ब्रह्माण्ड में चेतना का संचार करने वाले सूर्य विश्व के अद्वितीय आचार्य है। चर-अचर सृष्टि की आत्मा हैं सूर्य से ही समस्त विश्व की स्थिति एवं सुरक्षा है।^{१५}

शरीर रक्षा के सन्दर्भ में वेदों में सात्विक आहार का निर्देश किया गया है। ऋग्वेद के प्रथम मण्डल में कहा गया है कि जो मनुष्य युक्ति पूर्वक भोजन, पानीय को ग्रहण करते हैं वे शरीर और आत्मा के सुख को प्राप्त करते हैं^{१६} स्वादिष्ट अन्न को मधुरादि रसों के योग से, आयुर्वेद की रीति से सदा सेवन करना चाहिये जिससे वह अन्न रोगों को नष्ट कर आयु और बल वर्धक बने।^{१७} यही अन्न आरोग्य देने वाला देवरूप है तथा समस्त जीवों की मित्र भाव से रक्षा एवं पोषण करने वाला है।^{१८} मन का भाव भी अन्न में निहित है "जैसा खाओगे अन्न वैसा हो गा मन" ऋग्वेद में मन को अन्नमय कहा है। अन्न मन को आनन्दित करने वाला है। इसीलिये अन्न की उत्पत्ति में मेघ निमित्त कारण है अतः उस अन्न को

सात्विक भाव से ग्रहण करने का निर्देश ऋषियों ने दिया है।^{१६} जीवन के लिये पथ्यापथ्य का विधान केवल मनुष्यों के लिये ही नहीं अपितु जीव-जन्तुओं के लिये भी है। ऋग्वेद के एक मन्त्र में कहा गया है कि जैसे घोड़े घास खा कर बलवान और वेगवान होते हैं वैसे ही पथ्य औषधि युक्त भोजन के सेवन से मनुष्य भी आनन्दित होता है।

किन्तु आज भक्ष्याभक्ष्य का विचार शिथिल हो गया है। जिह्वा के स्वाद ने प्रकृति को नष्ट कर कृत्रिमता का वरण किया है। सात्विक आहार का स्थान तामसि आहार ने ले लिया है। परिणाम स्वरूप हम अपने स्वास्थ्य को नष्ट कर रहे हैं। अनेकों शारीरिक एवं मानसिक व्याधियों के शिकार हो रहे हैं। अतः इस प्रकृतिक शरीर के प्राकृतिक कार्यों को प्राकृत क्रम में चलाने के लिये उसकी प्रकृति को सन्तुलन में रखना ही महोषधि है। इसीलिये वैदिक ऋषियों ने जल, वायु, अग्नि, सूर्य, वनस्पति में औषधि की स्थापना की है।

आयुर्वेद विमर्श :

आयुर्वेद का प्रयोजन है- “स्वस्थस्य स्वास्थ्य रक्षणं आतुरस्य विकार प्रशमनं च”। सत-रज-तम प्रधान प्रकृति के आधार पर पिण्ड ब्रह्माण्ड न्याय से जो तत्त्व प्रकृति (ब्रह्माण्ड) में है वही तत्त्व पिण्ड में है। इन तत्वों का क्षय और वृद्धि होना ही रोग है, उन्हें सम अवस्था में कर देना ही चिकित्सा है, उनमें विषमता न हो ऐसे उपाय बता देना ही स्वास्थ्य रक्षण है। “रोगस्तु दोषवैषम्यं दोष साम्यमरोगता”।

मानव जीवन के लिये गर्भ प्रवेश के साथ ही भोजन और औषधि की आवश्यकता होती है। अतः यहां भोजन और औषधि को एक ही पर्याय में लिया जा रहा है, क्योंकि मानव शरीर के लिये जो भोज्य पदार्थ हैं- वही औषधि, और जो औषधि है- वही भोजन है। जीवन बलाधीन है- “अन्नमूलं बलं पुसां, बल मूलं हि जीवनम्”। अन्न ही बल रक्षा या शरीर रक्षा का मूल कारण है। आयुर्वेद में भी प्रथम प्रयोजन स्वास्थ्य रक्षण की पूर्ति के लिये आहार की मात्रा का निर्धारण किया है- “मात्राशी स्यात्। आहार मात्रा पुनरग्निबलापेक्षिणी”।^{२०} चरक ५/३

आहार द्रव्यों का सेवन उचित मात्रा में ही करना चाहिये। प्रत्येक व्यक्ति की आहार मात्रा, उसके अग्नि बल, कृपहमेजपअमैलेजमउद्ध पर निर्भर करती है। भोजन करने वाले की प्रकृति में बिना बाधा पहुंचाये, यथा समय जो भोजन पच जाय, वही उस व्यक्ति के लिये प्रमाणिक मात्रा है।^{२१}

परिमित आहार के सम्बन्ध में जैमिनी दर्शन में एक दृष्टान्त मिलता है- एक बार महर्षि जैमिनी से किसी ने पूछा- “कोऽरुक्? कोऽरुक्? कोऽरुक्?” अर्थात् कौन अरोगी है? महर्षि ने उत्तर दिया, हितंभुक्, मितंभुक्, ऋतु भुक् अर्थात् को हितकर, पृष्टिकर और शुद्ध आहार करता है। जो परिमित आहार करता है। और जो द्रव्यों के गुणागुण एवं समयानुकूल शरीर पोषण योग्य आहार करता है वही व्यक्ति निरोगी रहकर स्वस्थ जीवन का लाभ प्राप्त करता है।

आयुर्वेद का महत्व :

आयुर्वेद की प्रभावशीलता और सुरक्षित चिकित्सा ने लोगों को सदियों से आकर्षित किया है और इसने अपनी विश्वसनीयता बनाए रखी है। आयुर्वेद चिकित्सा का प्रकृति पर आधारित होना इसकी सबसे बड़ी महत्ता है। वैज्ञानिकों का मानना है कि प्राकृतिक जड़ी-बूटियों, पेड़-पौधों और दैनिक जीवन पद्धति पर आधारित होने के कारण आयुर्वेद चिकित्सा का कोई अन्य दुष्प्रभाव यानी साइड इफेक्ट नहीं है। कुछ घरेलू नुस्खे तो हमारी रसाई में ही उपलब्ध होते हैं। हल्दी दूध पीना, हल्दी, लौंग, अदरक, तुलसी पत्ता डालकर बने काढ़े से इम्युनिटी सिस्टम को मजबूत करने के उपाय अपनाना वर्तमान समय में फैली कोरोना

जैसी वैश्विक महामारी निपटने में कारगर सिद्ध हो रहे हैं। एलोपैथिक चिकित्सक भी इस समय आयुर्वेदिक जड़ी-बूटियों का सेवन करने की सलाह से निपटने के लिये शरीर का वजन कम करते ब्लड शुगर को नियंत्रित करने और ब्लड प्रेशर को कम करने के लिये भारतीयों ने प्राकृतिक चिकित्सा और आयुर्वेद को अपनाया है। यह पद्धति औषधीय पौधे, भूगोल, जलवायु और स्थानीय कृषि प्रथाओं से काफी हद तक प्रभावित है। आयुर्वेद को बढ़ते महत्व की एक अहम वजह इसकी दवाइयों का सस्ता होना और आसान पहुँच भी है। आयुर्वेद का एक अन्य महत्वपूर्ण पहलू मौसमी विविधताओं के अनुसार रोगों को वर्गीकृत किया जाना है जिसमें पूर्व निर्धारित मानदंडों के अनुसार इलाज किया जाता है। दिलचस्प बात यह है कि आधुनिक चिकित्सा में यह सब ज्यादा मायने नहीं रखता है। इसमें एक ही आकार को सभी लोगों पर फिट किया जाता है।

योग के सन्दर्भ में :

हम आज तकनीकी के युग में जी रहे हैं, लेकिन हमारी मूल शक्ति, हमारा विवेक, आंतरिक चेतना में हैं, न कि किसी बाहरी हुनर पर। बाहरी हुनर का महत्व है, किंतु सीमित। जबकि चेतना अपनी आंतरिक, देवात्म शक्ति से चलती है। इसकी बनावट या गति किसी बाह्य उपकरण पर निर्भर नहीं है। आधुनिक योगियों ने इसी को आंतरिक योग कहा है। हमारे संपूर्ण कर्मों का सामंजस्य प्रकृति और मूल सत्ता के साथ होना चाहिए। मनुष्य का स्वास्थ्य भी इस सामंजस्य पर निर्भर है योग और आयुर्वेद हमारी आंतरिक ऊर्जा को संतुलित करते हैं। रोगों से बचने, लड़ने में शक्ति देते हैं। आधुनिक दवाएं, वायरस, बैक्टीरिया को तत्काल नष्ट करने का प्रयत्न करती हैं। जिसे साइड-इफेक्ट कहते हैं। उसके उपचार के लिए अन्य दवा ली जाती है। इस तरह लोग देवाओं पर अत्यधिक निर्भर हो जाते हैं। इसी कारण अमेरिकी, यूरोपीय लोगों की सहज रोग-निवारक क्षमता यानी इम्युनिटी कम हुई है। प्राणायाम के संबंध में स्वामी रामदेव का यह दावा वृथा नहीं है कि नियमित प्राणायाम करने वाले कोरोना से मुक्त रहेंगे या उससे बच निकल आएंगे। प्राणायाम से हमारा श्वसन-तंत्र विशेषतः सशक्त होता है। प्राणायाम को मात्र व्यायाम समझ कर ग्रहण करने वालों को भी लाभ होता है।

वस्तुतः योग-आयुर्वेद मानवता में हिंदू-मुसलमान, नास्तिक-आस्तिक या धनी-गरीब के साथ भेद-भाव नहीं करता। जो चाहे इसकी अनूठी शक्ति आजमा सकते हैं। छूत के रोग रोकने के लिए वैक्सीन जरूरी है, किंतु संपूर्ण स्वास्थ्य के लिए संतुलित जीवन, संतुलित आहार, व्यवहार अच्छी आदतें और प्रकृति में स्थित मूल प्राण तत्वों से स्वयं को जोड़ना आवश्यक है। योग-आयुर्वेद में प्रकृति के साथ हमारा सामंजस्य पुनर्स्थापित करने और शारीरिक-मानसिक रोग-निरोधक शक्ति बढ़ाने की क्षमता है यह कोरोना बाद के युग में एक मूल्यवान सबक हो सकता है। हमें अपने आंतरिक और बाह्य पर्यावरण के बीच संतुलन पुनः बनाना होगा, जो सदियों से बहुत से समाजों में टूटा हुआ सा रहा है। संस्कृत वाग्मय इसका मार्ग दिखाता है। मानवता को एक नई, भारतीय अर्थों वाली धर्म-सभ्यता की आवश्यकता है। जिसका पथ प्रदर्शन प्रस्तुत लेख में वर्णित आर्ष चिन्तन विमर्श करता है।

उपसंहार :

वस्तुतः प्रकृति अपने व्यवहार से हमें बहुत कुछ सिखाती है। इतनी ऊँचाई से गिरने के बावजूद भी बारिश की बूंदें बिखरकर स्वनात्मक काम करती हैं। प्यासी धरती को सींचती हैं और इस हरियाली की चुनरी ओढ़ा जाती हैं। धरती को जीने लायक बनाती है। सचमुच टूटना बिखरना भी इतना खूबतसूरत हो सकता है? पेड़ धरती के भीतर दफन हो कर दाब और ताप सहकर कोयला बनते हैं। फिर सैकड़ों साल धैर्य रखकर हीरा बन जाते हैं। असहनीय ताप को सहकर सोना कुंदन बन जाता है। प्रकृति इन सब वाक्यों से हमें संदेश देती है कि जीवन में कठिनाईयों से कभी घबराना नहीं चाहिये। आपदायें जीवन को गर्त में ले जाने

के लिये नहीं आती बल्कि आत्मबल और इच्छा शक्ति को मजबूत बनाने के लिये आती हैं। हमें सबक सिखाने के लिये आती हैं मानव प्रजाति का लचीलापन हमारे लिये इतिहास का सबसे बड़ा सबक है। अपने अस्तित्व के साथ ही मानव ने आपदाओं का सामना किया और उसके विकास की प्रक्रिया कभी बाधित नहीं हुई है एक आम कहावत है, चीजे जितनी बदलती है उतनी ही वे मूलरूप में कायम भी रहती है। वास्तव में कोई विपरीत परिस्थिति आपको और सबल बनाने की ओर पहला कदम होती है।

भारत अन्य विकसित देशों की तुलना में काफी हद तक संतुलित है। क्योंकि यहाँ भारतीय संस्कृति है। वैदिक संस्कृति अभी भी जीवित है। यहाँ गांव अभी जिंदा है। वहाँ का सरल और कृत्रिमता से परे जीवन अभी जीवित है। कृषि आज भी हमारा आधार है। अतः गांव की इस सहज, सरल, स्वाभाविक जीवन शैली को अपनाना होगा। प्रकृति के संबंध को समझना होगा। मनुष्य और प्रकृति के सहोदर भाव को जीवन में बसाना होगा। तभी हम इस संकट से निकलकर स्वयं दृढ़ता के साथ मुकाबला कर सकते हैं। तथा संपूर्ण संसार को भी मार्ग दिखा सकते हैं।

सन्दर्भ सूची :

१. वाल्मीकि रामायण, बालकाण्ड, द्वितीय सर्ग, श्लोक १५
२. अथर्ववेद १२/१/१२
३. यजुर्वेद १०/२३
४. अथर्ववेद १२/१/६२
५. यजुर्वेद ६/२२
६. अथर्ववेद १/४/४
७. यजुर्वेद ३६/१२
८. ऋग्वेद ७/४६/४
९. अथर्ववेद ६/२४/२
१०. ऋग्वेद १०/१८६/३
११. ऋग्वेद १०/१८६/१
१२. ऋग्वेद १०/१३७/२-३
१३. यजुर्वेद १२/७९, ३५/४
१४. अथर्ववेद १/८/१
१५. ऋग्वेद ७/६०/२
१६. ऋग्वेद-१/७५/१
१७. ऋग्वेद-१/१८७/२
१८. ऋग्वेद-१/१८७/१-७
१९. ऋग्वेद- १/१८७/६
२०. चरक संहिता सूत्र स्थानक ५/१
२१. चरक संहिता सूत्र स्थानक ५/४



कोरोनाकाल में भारतीय अर्थव्यवस्था की स्थिति

डॉ० बृजेन्द्र सिंह बौद्ध

वरिष्ठ-प्रवक्ता, अर्थशास्त्र विभाग

बुन्देलखण्ड महाविद्यालय, झाँसी

मो०—७९०५५५७८९४ , [मेल&dr.bsoudha1999@gmail.com](mailto:dr.bsoudha1999@gmail.com)

सारांश :

भारत की अर्थव्यवस्था मिश्रित अर्थव्यवस्था है, जिसमें सार्वजनिक एवं निजी क्षेत्र मिल- जुलकर कार्य करते हैं। पिछले दशक के दौरान भारतीय अर्थव्यवस्था की विशिष्ट पहचान बनी है, जिसका संकेत 'तेजी से उभर रही अर्थव्यवस्था' संज्ञा से मिलता है। वैश्विक स्तर पर भारतीय अर्थव्यवस्था का एक प्रमुख स्थान है और देश के मानवीय संसाधन को रोजगार उपलब्ध कराने, विकास परक कार्यों के सम्पादन और उत्पादन गतिविधियों के सफल क्रियान्वयन के माध्यम से निरन्तर अग्रसर है। कोरोनाकाल में औद्योगिक गतिविधियों में रुकावट व बाजारबंदी ने बेरोजगारी की स्थिति को पुनः चिंताजनक बना दिया है, मुद्रास्फीति की दर बहुत उच्च है, निवेशकों में भय व अशंका देखी जा रही है, सरकारी संसाधनों का मुख्यतः कोरोना से लड़ाई में ही उपयोग किया जा रहा है, निर्यात में ठहराव है, उपभोक्ता मांग में तेज गिरावट आई है। निजी व सामाजिक निवेश में कटौती हो रही है। सबसे चिंतनीय तथ्य तो यह है कि कोरोना की यह दूसरी लहर अभी पूरी तरह समाप्त भी नहीं हुई है और स्वास्थ्य विशेषज्ञ अगस्त-सितम्बर तक तीसरी लहर के आने की संभावना व्यक्त करने लगे हैं। ऐसे में यह विचार करना आवश्यक है कि भारतीय अर्थव्यवस्था की मौजूदा स्थिति क्या है। और इसे वृद्धि की राह पर वापस कैसे लौटाया जाय।

प्रस्तावना :

भारत के जुलाई-२०२० में कोरोना के नए मरीजों की संख्या में गिरावट आने लगी थी और सरकार ने लॉकडाउन की पाबंदियों को चरणवार धीरे-धीरे खत्म करना शुरू कर दिया था, तो आर्थिक विशेषज्ञों के बीच यह बहस तेज हो गई थी, कि भारत की अर्थव्यवस्था जो कि लॉकडाउन के कारण पटरी से उतर चुकी थी, की रिकवरी कैसी होगी। इस संकट से पूर्व के वर्षों में भारतीय अर्थव्यवस्था को दुनिया में सबसे तेजी से आगे बढ़ने का गौरव हासिल हो चुका था। भारत लगभग तीन दशकों से उच्च वृद्धि दर हासिल कर रहा था और विकासशील देश से विकसित देश के रूप में बदलाव की ओर बढ़ रहा था, तो दुनिया के साथ-साथ भारत के आर्थिक जानकारों को यह विश्वास था कि भारतीय अर्थव्यवस्था बहुत तेजी से रिकवर होगी। इस संदर्भ में विशेषज्ञों ने V-Shaped रिकवरी (यानी अर्थव्यवस्था में जिस स्थिति से जितनी तेज गिरावट हुई है उतनी ही तेजी से वृद्धि होकर पुनः उस स्थिति को प्राप्त कर लेना) की संभावना व्यक्त की। यद्यपि हम नजर डालें सितम्बर २०२० से मध्य मार्च २०२१ तक की स्थितियों पर, तो विशेषज्ञों व सरकार द्वारा बार-बार व्यक्त की गई टैंचम रिकवरी की संभावना दिखने भी लगी थी, उदाहरण के तौर पर, जीडीपी की तीव्र गिरावट में कमी आनी शुरू हो गई थी। औद्योगिक उत्पादन वृद्धि में आँकड़े अच्छे आने लगे थे, कारखानों के शुरू होने से बेरोजगारी में धीरे-धीरे कमी आनी शुरू हो गई थी, मुद्रास्फीति की दर नियंत्रित थी, सरकार विभिन्न क्षेत्रों के लिए राहत पैकेज प्रदान कर रही थी। यह स्थिति इस संभावना को जन्म दे

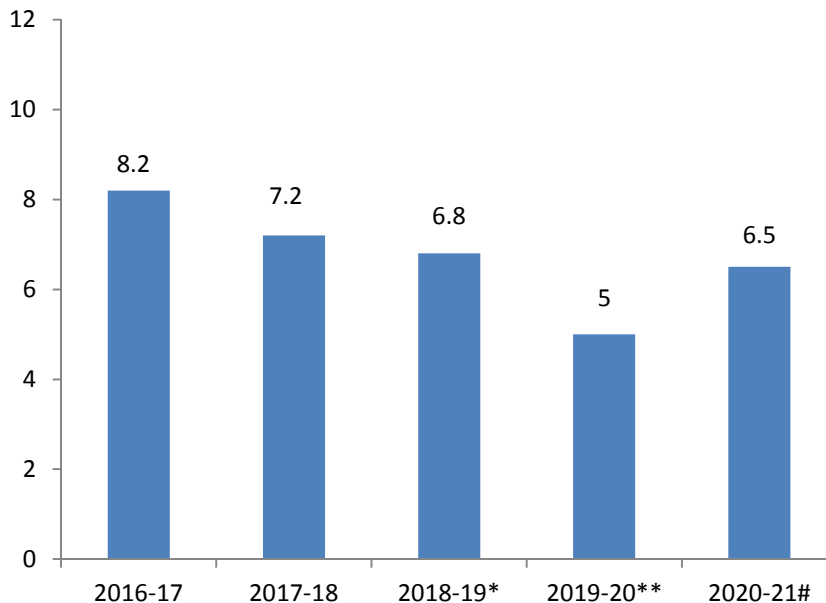
रही थी कि भारतीय अर्थव्यवस्था एक वर्ष में लॉकडाउन से हुई क्षति की प्रतिपूर्ति कर लेगी। लेकिन ऐसा वास्तविकता में हो न सका। मार्च २०२१ में भारत में कोरोना के मरीजों की संख्या बढ़नी शुरू हो गई जो कि एक दिन में चार लाख से भी अधिक तक पहुँची। देश के चौथे सीरो सर्वे अनुसार “देश के दो तिहाई लोगों में एंटीबॉडी मिली है। सीरो सर्वे में ०६-०९ वर्ष के बच्चे ५७.२ प्रतिशत तथा १०-१७ वर्ष के बच्चे ६१.०६ प्रतिशत में एंटीबॉडी मिली है।”^१ इससे स्पष्ट होता है कि देश में दो तिहाई लोग कोरोना वायरस से प्रभावित हुये है। इस तरह से भारत कोरोना की दूसरी लहर में बुरी तरह फँस गया। इस लहर में देश के लाखों नागरिकों की मौत हुई। वायरस के संक्रमण के प्रसार से बचने के लिए राष्ट्रीय स्तर पर तो नहीं किन्तु सभी राज्य सरकारों में आंशिक या पूर्ण लॉकडाउन का सहारा लिया। एक वर्ष की अवधि में ही दूसरे लॉकडाउन की स्थिति ने भारतीय अर्थव्यवस्था को गहरे संकट में फँसा दिया है। जहाँ यह अनुमान व्यक्त किया जा रहा था कि वित्तीय वर्ष २१-२२ की पहली तिमाही में जीडीपी के आँकड़े ऊँची छलांग लगाएंगे, वहीं अब कितनी गिरावट होगी इस पर विचार-विमर्श हो रहा है।

भारत में जीडीपी:

वास्तव में “आर्थिक संवृद्धि से आशय सकल घरेलू उत्पाद, सकल राष्ट्रीय उत्पाद एवं प्रति व्यक्ति आय में निरन्तर होने वाली वृद्धि से है अर्थात् आर्थिक संवृद्धि उत्पादन की वृद्धि से सम्बन्धित है। आर्थिक संवृद्धि में यह देखा जाता है कि राष्ट्रीय उत्पादन में लगातार वृद्धि हो रही है, तो इसे संवृद्धि की संज्ञा दी जाएगी”^२। भारत में केंद्रीय सांख्यिकी कार्यालय द्वारा सकल घरेलू उत्पाद का अनुमान लगाया जाता है। “भारत की अर्थव्यवस्था नाम मात्र सकल घरेलू उत्पाद (२.५ ट्रिलियन डॉलर) के आधार पर दुनिया की सातवीं सबसे बड़ी (संयुक्त राज्य अमेरिका, चीन, जापान, जर्मनी, यूनाइटेड किंगडम, फ्रांस और भारत क्रम में) और क्रय शक्ति समानता (पीपीपी) (९.४४७ ट्रिलियन डॉलर) के आधार पर तीसरी सबसे बड़ी (चीन, संयुक्त राज्य अमेरिका और भारत) अर्थव्यवस्था है”^३ मौजूदा दौर में वैश्विक स्तर पर किसी देश की अर्थव्यवस्था की स्थिति का आकलन उसकी जीडीपी में हुई वृद्धि को आधार बनाकर किया जाता है। भारत की आर्थिक प्रगति की माप भी इसी आधार पर होती है। यहाँ यह बात भी ध्यान देने योग्य है जहाँ आर्थिक प्रगति की माप भी इसी आधार पर होती है। यहाँ यह बात भी ध्यान देने योग्य है जहाँ आर्थिक संवृद्धि को राष्ट्रीय या घरेलू उत्पाद या प्रति व्यक्ति उत्पाद में वृद्धि के रूप में मापा जाता है वहाँ आर्थिक विकास में गुणात्मक पहलुओं पर भी विचार किया जाता है। अब केवल सकल घरेलू उत्पाद या सकल राष्ट्रीय उत्पाद तक सीमित न रहकर अर्थशास्त्री ‘विकास प्रक्रिया’ पर ध्यान केन्द्रित कर रहे हैं। इस सन्दर्भ में प्रसिद्ध पाकिस्तानी अर्थशास्त्री महबूब-उल-हक का यह कथन अत्यन्त महत्वपूर्ण है “विकास की प्रमुख समस्या गरीबी की सबसे भयानक किस्मों पर सीधा प्रहार करना है। गरीबी, भुखमरी, बीमारी, अशिक्षा, बेरोजगारी और असमानताओं जैसी समस्याओं के उन्मूलन को विकास के मुख्य लक्ष्यों में शामिल किया जाना चाहिए। हमें यह सिखाया गया था कि सकल राष्ट्रीय उत्पाद को बढ़ाया जाना चाहिए क्योंकि इससे गरीबी निवारण होगा। अब समय आ गया है कि हम संबंध को उलट दें। अब जरूरत इस बात की है कि हम मुख्यता गरीबी पर ध्यान केन्द्रित करें। इस जरिए सकल राष्ट्रीय उत्पाद को अपने आप उचित महत्व मिल जाएगा। दूसरे शब्दों में अब सकल राष्ट्रीय उत्पाद की वृद्धि दर पर और उसकी संरचना पर अधिक ध्यान देना जरूरी

है।”^४ ऐसे में अर्थव्यवस्था की मौजूदा वास्तविक स्थिति की चर्चा की शुरुआत जीडीपी आंकड़ों से शुरू करना उचित होगा।

जीडीपी वृद्धि दर (स्थिर मूल्यों पर, प्रतिशत में)



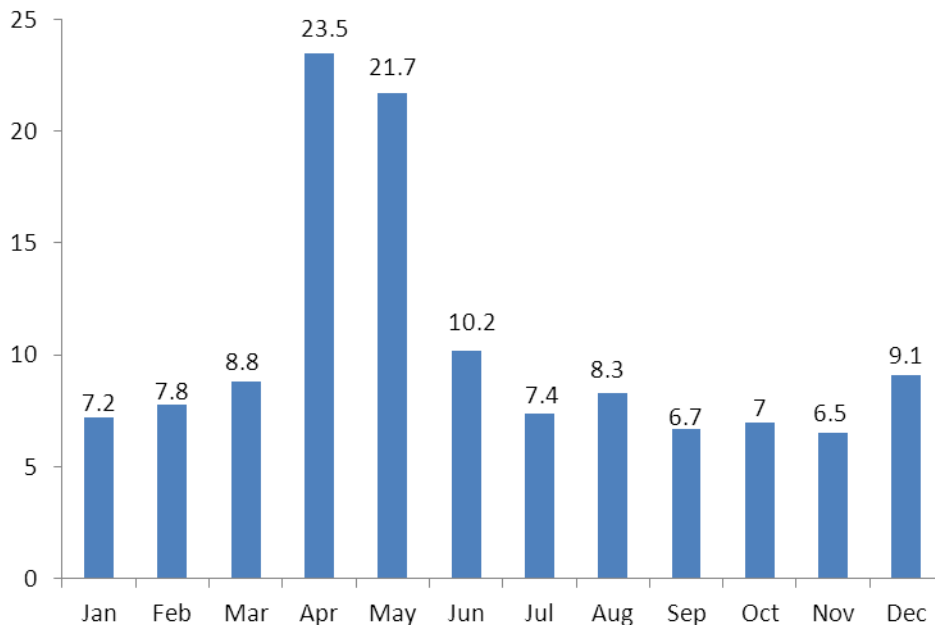
(* अनंतिम अनुमान , **पहला अग्रिम अनुमान , #अनुमानित)

भारत में जीडीपी वृद्धि दर वित्तीय वर्ष २०१६-१७ में ८.२ प्रतिशत, २०१७-१८ में ७.०२ प्रतिशत, २०१८-१९ में ६.८ प्रतिशत, २०१९-२० में ५.० प्रतिशत, २०२०-२१ में ६.०-६.५, थी। वित्तीय वर्ष २०२०-२१ के जीडीपी के आँकड़े जारी किये गये जिसमें भारत की जीडीपी-७.३ प्रतिशत रही। इस प्रकार देखा तो वर्ष २०१६-१७ से घटते क्रम में जीडीपी रही, लेकिन वर्ष २०२०-२१ में थोड़ा सुधार हुआ ही थी कि वित्तीय वर्ष २०२१-२२ में घड़ाम-७.३ पर पहुँच गई, जो अति निराशाजनक है। यह भारत में कोराना महामारी के कारण हुआ है। ऐसा नहीं है कि भारत की ही जीडीपी नीचे गिरी है। दुनिया के सभी देशों की जीडीपी औंधे मुँह गिरी थी। एक और संतोष जनक बात यह थी कि सभी को उम्मीदें थी कि वित्तीय २०२१-२२ में अर्थव्यवस्था में वृद्धि की रफ्तार इतनी तेजी होगी कि गिरावट की भरपाई हो जाएगी। आरबीआई के अलावा क्रिसिल, मूडीज, मार्गन स्टेनली आदि प्रतिष्ठित रेटिंग एजेंसियों ने १०.४ से लेकर १३.७ प्रतिशत तक की वृद्धि की उम्मीद जताई थी। लेकिन कोरोना की दूसरी लहर ने वास्तविक स्थिति बदल दी है। सभी राज्यों में लगे लॉकडाउन के कारण पहली तिमाही की जीडीपी पर असर पड़ना तय है। इसी को ध्यान में रखते हुये अब सभी रेटिंग एजेंसियों ने अपने अनुमानों में संशोधन करना शुरू कर दिया है। “ऐशियाई विकास बैंक (ए.डी.बी.) ने पहले ११ प्रतिशत अब १० प्रतिशत, आरबीआई ने पहले १०.५ प्रतिशत अब ९.५ प्रतिशत, विश्व बैंक ने पहले १०.१ प्रतिशत अब ८.३ प्रतिशत, एसबीआई ने १०.४ प्रतिशत अब ७.९ प्रतिशत, फिच १२.८ प्रतिशत अब १० प्रतिशत, मूडीज ने १३.९ प्रतिशत अब ९.६ प्रतिशत, एसएंडपी ने ११ प्रतिशत अब ९.५ प्रतिशत घटाकर संशोधित कर दिया गया है।”^६ बहुपक्षी वित्तपोषण एजेन्सी ने कहा कि २०२०-२१ की अंतिम तिमाही में देश की जीडीपी की वृद्धि पर १.६ फीसदी रही थी। इस कारण पूरे वित्तीय वर्ष के दौरान अर्थव्यवस्था में गिरावट ८ फीसदी के पूर्वानुमान के मुकाबले घट-७.३ फीसदी रही थी।

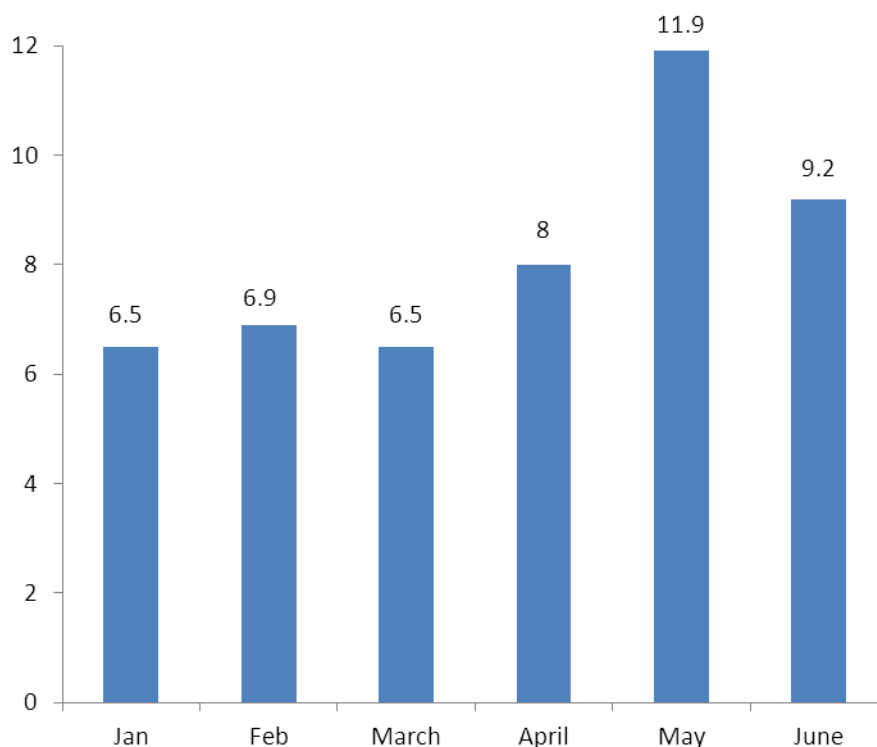
भारत में बेरोजगारी :

जीडीपी में गिरावट के बाद भारतीय अर्थव्यवस्था के सन्दर्भ में हम बेरोजगारी की वास्तविकता से परिचित होना आवश्यक समझता हूँ। सेंटर फॉर मॉनीटरिंग द इंडियन इकोनॉमी (CMIE) के अनुसार पहले नोटबंदी, फिर जीएसटी और अन्त में एक वर्ष में दो बार लगाए गए लॉकडाउन के कारण भारत में रोजगार के अवसरों में भारी कमी आई है।

भारत में बेरोजगारी दर (प्रतिशत वर्ष-२०२०)



भारत में बेरोजगारी दर (प्रतिशत वर्ष -२०२१)

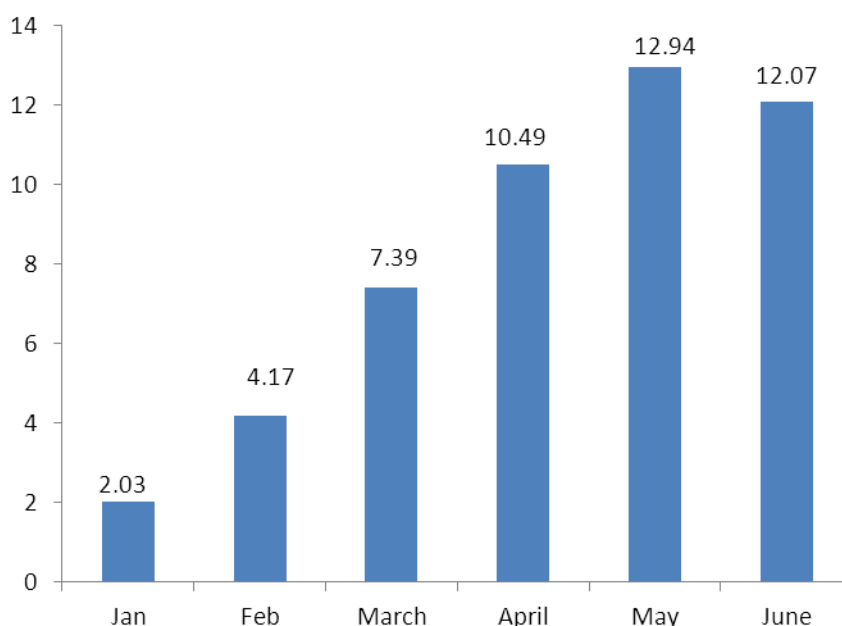


अंतिम अधिकारिक आंकड़ों के अनुसार कोरोना काल में वर्ष २०२० में मार्च ८.८ प्रतिशत, मई २३.५ प्रतिशत, जून २१.७ प्रतिशत फिर घटकर जून में १०.२ प्रतिशत जुलाई ७.४ प्रतिशत फिर बढ़कर अगस्त ८.३ प्रतिशत, फिर घटते क्रमश सितम्बर में ६.७, अक्टूबर में ७.० नवम्बर, ६.५ दिसम्बर ९.१ हो गई। वर्ष २०२१ में जैसे ही संक्रमण में वृद्धि होना प्रारम्भ हुई लॉकडाउन में अप्रैल में ८.० प्रतिशत, मई ११.९ प्रतिशत, जून में ९.२ प्रतिशत २० जुलाई २०२१ को ७.२ प्रतिशत हो गई है। हाल ही के एक सर्वे के अनुसार वर्ष २०२१ की शुरूआत से अब तक २.५ करोड़ से अधिक लोग अपनी नौकरी गवां चुके हैं, और ७.५ करोड़ लोग गरीबी रेखा पर पहुंच चुके हैं। यानी भारत के मध्यम वर्ग के करीब एक तिहाई लोग या वो नौकरी गंवा चुके हैं या गरीबी रेखा पर पहुंच चुके हैं। हर वर्ष देश की अर्थव्यवस्था को ०२ करोड़ नौकरियों की आवश्यकता है। लेकिन भारत में बीते दशक में हर वर्ष केवल ४३ लाख नौकरियाँ ही पैदा हुई , यानी मांग से एक चौथाई से भी थोड़ी कम की पूर्ति हुई।

भारत में मुद्रास्फीति :

सामान्य अर्थों में मुद्रास्फीति वह स्थिति है जिसमें कीमत स्तर में वृद्धि होती है तथा मुद्रा का मूल्य गिरता है। यह भी कहा जा सकता है कि जब वस्तुओं की उपलब्ध मात्रा की तुलना में मुद्रा तथा साख की मात्रा में अधिक वृद्धि होती है और परिणाम स्वरूप मूल्य स्तर में निरन्तर व महत्वपूर्ण वृद्धि होती है। “मुद्रा स्फीति से अभिप्राय बढ़ती हुई कीमतों के क्रम से है, न कि बढ़ी हुई कीमतों की स्थिति से।” जीडीपी में गिरावट एवं बेरोजगारी के बाद मुद्रास्फीति की दर में वृद्धि भारतीय अर्थव्यवस्था को मौजूदा समय में बुरी तरह प्रभावित कर रही है। हाल ही में मई २०२१ में महंगाई के जो आँकड़े आये हैं, चिन्तनीय हैं। आँकड़ों के अनुसार “थोक महंगाई ने मई २०२१ में सभी रिकॉर्ड तोड़ दिए और १२.९४ फीसदी पहुंच गई।”^८ खाद्य उत्पादों, पेट्रोलियम और फैक्ट्री निर्मित उत्पादों के दाम बढ़ने से थोक महंगाई में असामान्य उछाल आया। “पांच महीने बाद घटी थोक महंगाई जून में १२.०७ फीसदी हो गई। जो कि कच्चे तेल और खाद्य कीमतों में नरमी से महंगाई के मोर्चे पर मामूली राहत मिली है।”^९

भारत में थोक महंगाई दर (वर्ष-२०२१ प्रतिशत में)



भारत में थोक महंगाई दर के साथ-साथ उपभोक्ता आधारित खुदरा मूल्य सूचकांक (सीपीई) भी मई में छह महीने के शीर्ष पर पहुँच गया। “राष्ट्रीय सांख्यिकी कार्यालय ने सोमवार (१५ जून २०२१) को बताया कि मई में खुदरा महंगाई की वृद्धि दर ६.३ प्रतिशत रही, जो अप्रैल में ४.२३ प्रतिशत थी”^{१०} खुदरा महंगाई दर में मई के मुकबले जून में मामूली गिरावट देखने को मिली। हालांकि “यह अब भी ६.२६ फीसदी है।”^{११} मई में यह ६.३ फीसदी रही थी, जो छह महीने का उच्च स्तर था। दुनिया भर की अर्थव्यवस्थाओं के लिए सबसे बड़ा जोखिम बन गई है। यूबीएस सिक्योरिटीज ने बुधवार को जारी रिपोर्ट में बताया कि “भारत सहित ३० बड़ी अर्थव्यवस्थाओं पर, केन्द्रीय बैंकों को महंगाई, कर्ज और संक्रमण का डर सबसे ज्यादा सता रहा है। सर्वे के मुताबिक, ५७ प्रतिशत केन्द्रीय बैंकों ने माना कि महंगाई और लंबी अवधि का बॉन्ड यील्ड अनियंत्रित तरीके से बढ़ने के कारण अर्थव्यवस्था पर जोखिम बढ़ता जा रहा है। ७९ प्रतिशत का मानना है कि महामारी खत्म करने में असफल रहने से भी बड़ी अर्थव्यवस्था पर जोखिम बढ़ रहा है। ७१ प्रतिशत के सरकार पर बढ़ते कर्ज को भी जोखिम के मुख्य कारणों में शामिल किया है।”^{१२} भारत में मुद्रास्फीति की दर ऊपर-नीचे होती रहती है किन्तु मौजूदा समय में इसका ऊपर होना आमजन के लिए संकट खड़े कर रहा है। क्योंकि कोरोना संकट ने बहुतों को बेरोजगार कर दिया है, जिनका रोजगार बचा भी है वे वेतन में आंशिक या बड़ी कटौती का सामना कर रहे हैं। जिनके वेतन में कटौती नहीं हुई है वे वेतन के स्थिर होने यानी वेतन में वृद्धि नहीं होने की समस्या का सामना कर रहे हैं। यह भी सत्य है कि कोरोना काल में महामारी के बचाव व इलाज में लगभग सभी व्यक्तियों व परिवारों के व्यय मद में एक नया खर्च जुड़ा है।

भारत में उपभोक्ता माँग :

जीडीपी में गिरावट, बेरोजगारी में वृद्धि और मुद्रा स्फीति की दर के उच्च होने साथ भारतीय अर्थव्यवस्था मौजूदा समय में उपभोक्ता माँग में गिरावट की बड़ी समस्या का सामना कर रही है। वर्तमान में दुनिया के अधिकतर देश जिस पूँजीवाद व बाजारवादी आर्थिक मॉडल को अपनाए हुए है उसमें उच्च वृद्धि दर हासिल करने के लिए उपभोक्ता माँग में बड़ी वृद्धि आवश्यक है। उपभोक्ता माँग में वृद्धि होती है तो निवेश में वृद्धि होती है, निवेश में वृद्धि है तो उत्पादन में वृद्धि होती है, उत्पादन में वृद्धि होती है, तो रोजगार के अवसरों में वृद्धि होती है और सरकार की आय वृद्धि होती है तो वह भौतिक व सामाजिक संरचना के क्षेत्र में अपना व्यय बढ़ाने के साथ-साथ लोक कल्याण के कार्यक्रम चलाती है। जैसे- “सरकार युवाओं को रोजगार संपन्न बनाने के लिए तीन स्तरों पर काम कर रही है पहला स्किल इंडिया, दूसरा, स्टार्टअप इंडिया, तीसरा, मेक इन इंडिया।”^{१३} ग्रामीण क्षेत्रों में कौशल विकास और आजीविका के अवसरों को बढ़ावा देने के लिए दीनदयाल अंत्योदय योजना-राष्ट्रीय ग्रामीण आजीविका मिशन के जरिये एक करोड़ गरीब परिवारों को इस बार गरीबी रेखा से बाहर किया जा सके एवं आय उपभोक्ता की माँग में वृद्धि हो सके। केन्द्र सरकार ने किसानों की आय दो गुनी करने का लक्ष्य रखा है। “इस लक्ष्य को हासिल करने में कृषि मंत्रालय के अर्न्तगत कई विभागों की उसकी लाभकारी योजनाओं का अहम योगदान हो।”^{१४} ऐसे योजनाओं के संचालन से गरीबी उन्मूलन में मदद मिलती है। भारतीय अर्थव्यवस्था में पिछले कई महीनों से उपभोक्ता माँग में कमी देखी जा रही है तो आर्थिक विशेषज्ञों ने यह चिंता जाहिर की है यह स्थिति सुचक्र की जगह एक कुचक्र स्थापित कर सकती है। जिसमें निवेश कम उत्पादन कम रोजगार के अवसर कम सरकार की आय कम। ०२ जून २०२१ अमर

उजाला अंक के अनुसार “एक करोड़ से ज्यादा लोग बेरोजगार हो गए तथा ६७ फीसदी परिवारों की आमदनी घटी”⁹² यह स्वाभाविक कि आमदनी घटने से उपभोक्ता की मांग घटने का स्पष्ट संकेत है।

भारतीय अर्थव्यवस्था में निर्यात :

भारतीय अर्थव्यवस्था में नियति ठहराव भी इस भारतीय अर्थव्यवस्था की समस्या है। समस्या का सामना भी कर रही है। वैसे तो कोरोना महामारी के संकट ने जिस तरह वैश्विक आपूर्ति श्रृंखला को क्षति पहुँचाई है। उसके कारण दुनिया के अधिकतर देश निर्यात के मोर्चे पर बड़ी गिरावट का सामना कर रहे हैं। लेकिन भारत की समस्या अलग है। भारत कोरोना संकट से पूर्ण भी, इस मोर्चे पर संघर्ष कर रहा था। पिछले एक दशक में देश से किया जाने वाला निर्यात ३०० अरब डॉलर पर अटक गया है, किसी वर्ष इससे थोड़ा ज्यादा तो किसी वर्ष इससे थोड़ा कम। उदाहरण के तौर पर वाणिज्य मंत्रालय के अनुसार – “पेट्रोलियम उत्पादों, रत्न आभूषण, रसायन, चमड़ा और समुद्री उत्पादों के बूते निर्यात में करीब डेढ़ गुने का इजाफा हुआ। हालांकि आयात भी ९८.३१ फीसदी बढ़कर ४१.८७ अरब डॉलर पहुँच गया। निर्यात ४८.३४ फीसदी बढ़कर ३२.५ अरब डॉलर पहुँच गया है।”⁹³ जबकि लॉकडाउन और संक्रमण के दबाव के बावजूद “मई में निर्यात लगातार दूसरे महीने कोविड पूर्ण स्तर से ज्यादा रहा। वाणिज्य मंत्रालय के अनुसार “मई में कुल निर्यात ६९.३५ फीसदी बढ़कर ३२.२७ अरब डॉलर रहा है”⁹⁴ भारत में निर्यात के इस तरह का ठहराव आर्थिक हितों को नकारात्मक तरीके से प्रभावित कर रहा है, जैसे कि निर्यात में वृद्धि से विदेशी पूँजी की आवक में वृद्धि होती है। वह नहीं हो रही है। घरेलू उद्योग-धंधों द्वारा उत्पादित वस्तुओं व सेवाओं की मांग नहीं बढ़ रही है तो निवेश में वृद्धि नहीं हो रही और निवेश में वृद्धि न होने के कारण से रोजगार के अवसरों में वृद्धि नहीं हो रही है।

उपाय एवं सुझाव :

जब वर्ष २००८-०९ में जब पूरी दुनिया भारी मंदी की गिरफ्त में आ गई थी तब भी भारत की अर्थव्यवस्था मंदी के प्रभाव में आने से बच गई थी। क्योंकि सरकार ने संकट को समय से जान लिया था और कई ऐसे उपाय उठाए गए जिससे लोगों के हाथ में पैसे की कमी नहीं हुई और बाजार में उपभोक्ता मांग बनी रही, जैसा कि राष्ट्रीय स्तर पर किसानों की कर्जा माफी हुई, सरकारी कर्मचारियों के वेतन में वृद्धि, मनरेगा व अन्य लोक-कल्याण के कार्यक्रमों में आवंटित धनराशि में वृद्धि की गई, उद्योगों को बेलआउट पैकेज दिया गया। हाल के कोरोना से उपजे संकट से भी इस तरह के उपायों से निपटा जा सकता है। सरकार के द्वारा इस सम्बन्ध में २० लाख करोड़ से अधिक का पैकेज अर्थव्यवस्था को दिया गया है। प्रधानमंत्री ने एक विशेष आर्थिक पैकेज की घोषणा की और आत्मनिर्भर भारत बनाने का आह्वान किया। उन्होंने कहा कि कोविड संकट के दौरान सरकार द्वारा इससे पहले की गई घोषणाओं और आरबीआई द्वारा लिए गए निर्णयों से जुड़ी धनराशि को मिला देने पर यह पैकेज २० लाख करोड़ का है, जो भारत की जीडीपी के लगभग १० प्रतिशत के बराबर है। उन्होंने कहा कि यह पैकेज “आत्मनिर्भर भारत बनाने के लक्ष्य को प्राप्त करने की दिशा में काफी सहायक साबित हो गया।”⁹⁵ सरकार के द्वारा क्रेडिट गारंटी, कॉरपोरेट को आर्थिक मदद, खाद्यान्न की उपलब्धता सुनिश्चित करने जैसे कदम उठाए गये थे। न कि लोगों तक सीधी आर्थिक मदद पहुंचाना। जबकि ऐसे समय में जब आम आदमी के पास रोजगार नहीं है। उद्योग-धंधे सुस्त पड़े हों, दैनिक मजदूर जीने-खाने के संकट का सामना कर रहे हैं तो आम आदमी को सीधी आर्थिक मदद की जरूरत है। सरकार को चाहिए न्यूनतम आय गारंटी योजना चालू करे जिसके तहत एक निश्चित धनराशि सभी वयस्क आम आदमी को प्राप्त हो। इससे बाजार में मांग पैदा होगी। सूक्ष्म, लघु व मध्यम उद्योगों के लिए एक बड़े राहत पैकेज

के रूप में देना चाहिए जिससे उद्योगों में कार्यरत कर्मचारियों की वेतन सुरक्षा हेतु वित्त उपलब्ध कराया जाए। असंगठित क्षेत्र के कर्मियों के वेतन हेतु बहुत बड़ी वित्तीय राहत मिल जाएगी। कोरोना महामारी का सबसे ज्यादा असर असंगठित क्षेत्र के कर्मियों एवं मध्यम वर्ग पर पड़ा है। सरकार को चाहिए इनकी सामाजिक सुरक्षा की जिम्मेदारी उठाए। इसके जीवन बीमा, आजीविका भत्ता और पेंशन प्रदान की जाना चाहिए। भारतीय अर्थव्यवस्था में मुद्रास्फीति की दर को नियंत्रण हेतु तत्काल कदम उठाना चाहिए। कोरोना महामारी के दौर सरकार को चाहिए कि पेट्रोल-डीजल पर लगाए गए अत्यधिक कर को कम करना एवं उपभोक्ता वस्तुओं व सेवाओं पर जीएसटी में छूट दी जाना चाहिए।

निष्कर्ष :

कोरोना महामारी के कारण पूरी दुनिया की अर्थव्यवस्था चरमरा गई है। इससे भारत भी अछूता नहीं रहा है। करोड़ों लोगों की नौकरियों खत्म हुई है। भारी उद्योग, लघु-कुटीर उद्योगों की आर्थिक स्थिति खराब हुई है। देश में उपभोक्ता की मांग में कमी आई है। बेरोजगारी ने भारत में सारी हदें पार कर दी है। ऐसी स्थिति में मुद्रास्फीति की दर भी उच्च हुई है महंगाई में आम आदमी की कमर तोड़ दी है। देश की जीडीपी में भी रिकार्ड गिरावट आई है। देश की आम जनता अत्यधिक कष्ट में है। आगे आने वाला समय और कठिन होने जा रहा है। तीसरी लहर की अशंका रोजी-रोटी के संघर्ष में गुजरने की प्रबल संभावना है।

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ग्रामीण माता—बाल मृत्युदर निवारणात राष्ट्रीय ग्रामीण आरोग्य अभियानाची भूमिका

प्रा. डॉ. पल्लवी शामसुंदर देशमुख

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प्रास्ताविक :-

‘सर्वे सुखिनः सन्तु । सर्वे सन्तु निरामयः ।’ अशी प्रार्थना आपण म्हणतो. सर्वजन सुखी व निरोगी असावेत अशी नुसती सदिच्छा व प्रार्थना करून वस्तुस्थिती बदलत नाही. त्यासाठी कृतीचे प्रयत्न आवश्यक असतात. भारतासारख्या विकसनशील राष्ट्रांमध्ये अजुनही सर्वसामान्य माणसाचा आरोग्याचा दर्जा खूप खालावलेला असल्यामुळे इ.स. १९८३ साली भारत सरकारने आपल्या सर्व नागरिकांना (अल्मा—आहा सोवियात रशिया) येथील ठरावानुसार २००० सालापर्यंत आरोग्य देण्यासाठी एक “राष्ट्रीय आरोग्य धोरण” अमलात आणले.

निरोगी बालक हे चांगल्या समाजाचे प्रतिक आहे. बालकांचे सुरुवातीच्या कालावधीतील आरोग्य हे त्याच्या आईच्या स्वाध्यावर अवलंबून असते. करीता भारत सरकारने तसेच राज्यसरकारने गर्भवती स्त्रीच्या स्वाध्यांकडे जाणीवपूर्वक लक्ष पुरविले. बाल माता मृत्यू टाळण्यासाठी शासन एका जिल्ह्यावर कोटयवधी रूपये दरवर्षी खर्च करीत असल्यामुळे बालमृत्यूचा आकडा बऱ्याच अंशी कमी झालेला आहे.

भारत देश हा कृषीप्रधान देश असल्यामुळे ग्रामीण जनता जास्त प्रमाणात आहे. ग्रामीण जनता हीच देशाच्या कृषि आणि पर्यावरण क्षेत्राचा कणा आहे. परंतु ग्रामीण भागातच अनेक समस्यांपैकी प्रसव आरोग्यविषयक समस्या असतात. त्यामुळे संपूर्ण देशात ग्रामीण जनतेला परिणामकारक व प्रभावी आरोग्यसेवा पुरविण्याच्या दृष्टिने ‘राष्ट्रीय ग्रामीण आरोग्य अभियानाची’ सुरुवात करण्यात आली आहे.

■ पदाच्या कार्यात्मक व्याख्या

- **बालमृत्युदर :-** “एका वर्षात दर हजारी जिवंत जन्मापैकी मृत्यू पावणाऱ्या एक वर्ष वयाच्या आतील बालकांची संख्या म्हणजे बालमृत्यू दर होय.”
- **मातामृत्युदर :-** “दर हजार जिवंत जन्मामागे प्रसूतीच्या कारणांमुळे गर्भधारणेपासून प्रसूतीनंतर ४२ दिवसांपर्यंत मृत्यू पावणाऱ्या मातांची संख्या म्हणजे मातामृत्यूदर होय.”
- **राष्ट्रीय ग्रामीण आरोग्य अभियान (N.R.H.M)** शहरी, ग्रामीण भागातील गरीब महिला आणि मुलांपर्यंत गुणवत्तापूर्ण, अद्यावत व परिणामकारक आरोग्य सेवा पुरेशा प्रमाणात पोहचविणे हे या मिशनचे ध्येय आहे.
- **राष्ट्रीय ग्रामीण आरोग्य अभियान (N.R.H.M)** राष्ट्रीय ग्रामीण आरोग्य अभियान (N.R.H.M) हे शहरी, ग्रामीण परंतु आर्थिक दुर्बल लोकांना सर्वांगीण आरोग्यसेवा उपलब्ध करण्याच्या उद्देशाने भारताचे पंतप्रधान मा.डॉ० मनमोहनसिंग यांनी १२ एप्रिल २००५ रोजी हे अभियान सुरू केले. ग्रामीण भागातील गरीब प्रसवमहिला आणि

मुलांपर्यंत गुणवत्तापूर्ण अधावत व परिणामकारक सेवा पुरेशा प्रमाणात पोहचविणे हे या मिशनचे ध्येय आहे. हे अभियान पूर्णतः राबविण्यात येते.

● **राष्ट्रीय ग्रामीण आरोग्य अभियानाची उद्दिष्टे :-**

- बालमृत्यू आणि माता मृत्यू दर कमी करणे.
- जननदर कमी करणे
- लोकसंख्यावाढीला आळा बालणे.
- उपकेंद्र प्राथमिक आरोग्य केंद्र व ग्रामीण रुग्णालयातील सेवांचा दर्जा सुधारणे.
- प्रत्येक गावामध्ये महिला आरोग्य कार्यकर्ते “आशा” ची निवड करणे.

● **(N.R.H.M) अभियानांतर्गत विविध आरोग्य विषयक सरकारी योजना :-**

अ.क्र.	योजना
१	जननी सुरक्षा योजना
२	कुटुंब कल्याण कार्यक्रम
३	जननी शिशु सुरक्षा कार्यक्रम
४	नियमित लसीकरण
५	माहेर योजना
६	सवित्रीबाई फूले कल्याण योजना
७	सिकलसेल योजना
८	आशा योजना
९	आयुष शिबिरे
१०	मानव विकास कार्यक्रम
११	राष्ट्रीय बाल स्वास्थ्य कार्यक्रम

एन. आर. एच. एम अंतर्गत उपरोक्त प्रकारच्या योजना राबविल्या जातात यांचे मुख्य उद्देश राज्यातील ग्रामीण व शहरी भागातील दारिद्र्य रेषेखालील, अनुसूचित जाती, जमातीच्या महिलांचे आरोग्य संख्यांमध्ये होणाऱ्या प्रसुतीचे प्रमाण वाढविणे व मातामृत्यू व बालमृत्यूचे प्रमाण कमी करणे हेच आहे.

शहरी भागापेक्षा ग्रामीण भागातील जनतेला विशेषतः स्त्रिया व लहान मुलांना परवडणाऱ्या व परिणामकारक अशा आरोग्य सुविधा प्राप्त झाल्यामुळे निश्चितच या अभियानाच्या रूपाने माता आणि बालक यांच्या मृत्यूदरात निश्चितच बदल झालेला आहे. व या विविध योजनेमुळे ग्रामीण जनतेची नाळ जोडल्याने शासनाची मान उंचावलेली आहे.

● **राष्ट्रीय ग्रामीण आरोग्य अभियानांतर्गत आरोग्य वाहन व संपर्क केंद्रे :-**

एन. आर. एच. एम अभियानांतर्गत आरोग्य सल्ला संपर्क केंद्र (Health Advice Call Centre) कार्यान्वित करण्यात आले आहे. या केंद्रांतर्गत पूर्ण वेळ (२४ X ७ दिवस) सेवा उपलब्ध असते.

■ **डायल क्र. १०२ -**

१०२ या क्रमांकावर डायल केल्यास ही रूग्ण वाहिका प्रसवकाळातील समस्यांच्या स्त्रियांसाठी कार्यरत आहे.

■ **डायल क्र. १०४ -**

१०४ या क्रमांकावर राज्यातील प्राथमिक आरोग्य केंद्राचे वैद्यकीय अधिकारी, आरोग्य कर्मचारी, ए.एन.एम. आशा इत्यादी वैद्यकीय कर्मचारी या केंद्राशी टेलीफोन क्रमांकावर आरोग्य कार्यक्रम, वैद्यकीय सल्ला तसेच तज्ञांचे मार्गदर्शन प्राप्त करून घेऊ शकतात.

■ डायल क्र. १०८ —

१०८ या क्रमांकावर अपघात झालेले, इमर्जेंसी असलेल्या व्यक्ति डायल करून या वाहनाचा उपयोग करू शकतात.

अशाप्रकारे एन.आर.एच.एम अभियानांतर्गत सर्व नागरिकांसाठी व आरोग्य कर्मचाऱ्यांसाठी आरोग्य सल्ला व रूग्णवाहिका पुरविली जाते.

● निष्कर्ष :-

माता बालमृत्यू दर निवारण्यासाठी NRHM हे अतिशय वरदान ठरत आहे. हे या अभियान अंतर्गत मोफत रूग्णवाहिका, मोफत सोनोग्राफी, मोफत आहार, मोफत आजारोपचार तसेच स्त्रीरोगतज्ञ आणि बालरोगतज्ञ हे पूर्वनियोजित दिवशी ग्रामीण भागातील रूग्णालय आणि उपकेंद्रांना भेट देऊन रूग्णांना तपासतात त्यामुळे ग्रामीण गरोदर मातांचा कल रूग्णालयाकडे सकारात्मक झालेला असून आरोग्य संख्येतील प्रसूतीचे प्रमाण वाढत जाते. तसेच अभियानांतर्गत विविध योजनांचा लाभ एकाच लाभार्थ्यांना घेता येत असून या विविध योजनांच्या लाभापोटी प्रसूती महिला घरी न करता आरोग्य केंद्रातच करतात. गरोदर स्त्रीची किमान चार वेळा तपासणी करून घेणे, प्रसूतीच्या वेळी रूग्णालयात सोबत जाऊन प्रसूतीनंतर ४८ तासांपर्यंत तिच्यासोबत राहण्यासाठी 'आशा' स्वयंसेविका महत्वाची भूमिका पार पाडत असते. महिलांना प्रसूतीपूर्व व प्रसूतीपश्चात उपचार मिळावा यासाठी जननी सुरक्षा योजना, जननी शिशु सुरक्षा यासारख्या योजनांची माहिती घरोघरी देऊन शहरी व ग्रामीण भागात जानीव जागृतीमुळे व आशा कार्यकर्त्यांमुळे रूग्णालयातील प्रसूतीचे प्रमाण ७४ % वरून ९० % झाले आहे. म्हणजेच ही योजना आपल्या उद्देशात बहुतांश प्रमाणात यशस्वी होत असल्याचे सादर होते. राष्ट्रीय ग्रामीण आरोग्य अभियानाची उद्दिष्टे साध्य करण्यासाठी विविध योजनांचा लाभ घेण्यास ग्रामीण मातांना प्रवृत्त केल्याने, आरोग्य कर्मचाऱ्यांची रूग्णाप्रती सन्मानपूर्वक वागणूक मिळाल्याने त्यांना सेवा देणाऱ्या व्यक्ती बद्दल व आरोग्य व्यवस्थेबद्दल विश्वास वाढत असल्याने निश्चितच माता-बालमृत्यू दर निवारण्यात राष्ट्रीय आरोग्य अभियानाची भूमिका अत्यंत फलदायी ठरत आहे.

● संदर्भसूची :-

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२. पाटील मनोज, 'नागरिकांसाठी केंद्र व राज्य शासनाच्या विकास योजना' चौधरी लॉ पब्लिशिंग, पुणे.
३. पांडे, के, 'सामाजिक आरोग्य परिचर्या' बनारसीदास भनोत पब्लिशर्स, चवथी आवृत्ती, जबलपूर.
४. राष्ट्रीय ग्रामीण स्वास्थ्य मिशन पत्रिका, खंड १.
५. राष्ट्रीय NRHM मिशनचे ५ वर्षे, लोकमत, नागपूर.

कोविड काळातील शिक्षकाची भूमिका

प्रा. विवेक शांताराम चव्हाण

ग्रामीण विकास विभाग

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गोष्टवारा:

कोविड 19 हे दुसऱ्या महायुद्धानंतरचे जगासमोर आलेले सर्वात मोठे संकट आहे. जीवनाच्या सर्वच अंगावर या संकटाचा प्रभाव पडला असून याला प्रतिबंधक उपाय म्हणून सर्वच देशात लॉकडाऊनचे धोरण अवलंबण्यात आले आहे. कोरोनाची समस्या केवळ आरोग्याची समस्याच नसून शैक्षणिक समस्याही निर्माण झाल्या आहेत. शाळा बंद अभ्यास चालू ठेवायचा असेल तर त्याला ऑनलाइन, डिजिटल शिक्षणाशिवाय पर्याय नाही. माहिती तंत्रज्ञानामुळे शिक्षणाचा प्रसार, विस्तार, शिक्षणाचा दर्जा, शिक्षणाची संधी वाढविण्यास भरपूर वाव असून यामध्ये सर्वात महत्त्वाची भूमिका ही अध्यापकाची, शिक्षकाची आहे. त्यासाठी येणाऱ्या समस्येवर मात करून सर्व स्तरातील विद्यार्थी शिक्षण प्रवाहात कसे आणता येतील हे पाहणे गरजेचे आहे.

प्रस्तावना:

खरतर कोणतेही संकट सांगून येत नाही मग ते आजारपण असो, दुष्काळ असो, महापूर असो, भूकंप किंवा ज्वालामुखी असो वरील प्रत्येक संकटात जीवित हानी, आर्थिक सामाजिक हानी होतेच, वरील प्रत्येक संकटावर मात करून नवीन प्रवाह, नवीन दिशा समोर ठेवून जो वाटचाल करतो तो मात्र निश्चितच यशस्वी होतो. दुसऱ्या महायुद्धात संपूर्णपणे बेचिराख उद्ध्वस्त झालेला जपान पुन्हा उभा राहिला आणि जागतिक महासत्ता बनला.

शांत नदीपात्रात दगड मारला की असंख्य तरंग उठतात तसेच तरंग कोरोनाने मानवी जीवनावर उमटवले. आज कोरोनाव्हायरसने आपण 'गृहीत धरलेले जग' हादरून टाकले आहे. मोठ्या प्रमाणावर मानसिक चिंता आणि अस्तित्वाची अनिश्चितता निर्माण केली आहे. कोविड संक्रमणाने सर्व क्षेत्रांपुढे काही मूलभूत प्रश्न उभे केले असून त्यास शैक्षणिक क्षेत्रही अपवाद नाही. कोरोना संक्रमण आणि त्यामुळे आलेल्या लॉकडाऊनमुळे अनेक प्रश्न निर्माण झाले आहेत. कोरोनाच्या जागतिक संकटामुळे शाळा, महाविद्यालय बंद आहेत. शाळा सुरु करण्यायोग्य परिस्थिती कधी निर्माण होईल हे सांगता येणे कठीण आहे. शाळा, महाविद्यालय सुरु झाली तरी सामाजिक अंतराचे नियम काय असतील आणि ते पाळून शाळा, महाविद्यालय पूर्ववत चालवता येतील का हे सुद्धा सांगणे कठीण आहे.

कोविड संक्रमणाच्या काळात म्हणजेच लॉकडाऊनच्या काळात ऑनलाइन शाळा, महाविद्यालये सुरु करण्यात आली. अनेक शाळांनी कोणत्या ना कोणत्या पद्धतीचे, ऑनलाईन उपक्रम देखील सुरु केले आहेत, पण या साऱ्याची पुढील दिशा काय असेल याचा गांभीर्याने विचार होणे गरजेचे आहे. कोरोना संक्रमणामुळे लादल्या गेलेल्या सक्तीच्या सुट्टीमुळे हे ऑनलाइन माध्यम एकाएकीच आपल्यासमोर आले असून, या ऑनलाइन शिक्षणाची आजची परिस्थिती काय आहे? त्यासाठी कोणते पर्याय उपलब्ध आहेत? ते योग्य प्रकारे सर्वांना वापरता येतात का? शिक्षणाची उद्दिष्टे साध्य होतात का? कोविड संक्रमण काळात शिक्षकाची भूमिका कोणती असेल? या प्रश्नांचा ऊहापोह करताना सर्वात महत्त्वाचे म्हणजे या साऱ्यातून आपल्याला नक्की काय साध्य करायचे आहे? ते समजून घेणे गरजेचे आहे.

शिक्षण प्रक्रिया:**शिक्षण प्रक्रियेमध्ये शिक्षणाचे तीन घटक महत्त्वपूर्ण असून त्यामध्ये :-**

1. **शिक्षक** - शिक्षक वर्गामध्ये शिकवण्याचे म्हणजेच अध्यापनाचे कार्य करतो यामध्ये शिक्षकाचे व्यक्तिगत कौशल्य, वक्तृत्व, विषय मांडण्याची आणि समजावून सांगण्याची कला अंतर्भूत असते.
2. **विद्यार्थी** – विद्यार्थी हा शिक्षण प्रक्रियेतील महत्त्वपूर्ण घटक जो अध्ययन करतो, शिकतो, नवीन ज्ञान आत्मसात करतो. नवीन संकल्पना शिकतो यामध्ये पाठ्यपुस्तके, इतर अभ्यास सामग्री वाचणे, संबंधित अध्ययन साधने घेणे, अनुभवणे दिलेला स्वाध्याय, गृहपाठ करणे याचा समावेश असतो.
3. **मूल्यमापन** - हा महत्त्वपूर्ण घटक विद्यार्थ्यांचे मूल्यमापन, शिकवलेले ज्ञान किती समजले याची पडताळणी करणे म्हणजे मूल्यमापन यामध्ये गृहपाठाची तपासणी करणे, घटक चाचणी घेणे, परीक्षा घेणे याचा समावेश असतो.

शिक्षणाची सद्यस्थिती:

सद्यस्थितीमध्ये बहुसंख्य शाळा किंवा शिक्षक फक्त ऑनलाइन अध्यापन करण्यावर भर देत आहेत झूम किंवा गुगल मीटद्वारे शिक्षक आणि विद्यार्थी यांच्यामध्ये शिक्षण प्रक्रिया सुरू आहे. बहुसंख्य ऑनलाइन वर्गामध्ये शिक्षक वर्गात बोलतात तसेच बोलून शिकविताना दिसून येतात, काही शिक्षक फळा समोर ठेवून त्यावर वर्गात शिकविल्या सारखे खडूने मुद्दे लिहून शिकवतात. तर काही कल्पक शिक्षक आपल्या लेक्चरचे पावर पॉइंट प्रेझेंटेशन करून ते व्हिडिओकॉल वर दाखवतात व विषय समजावून सांगतात. शिक्षण प्रक्रियेतील हा अध्यापनाचा मोठा बदल कितपत यशस्वी होतो ते पहाणे गरजेचे ठरेल.

दुसऱ्या घटकाचा जर विचार केला तर अध्ययनासाठी पारंपारिक साधने आणि पद्धतीच वापरली जात असून यामध्ये पाठ्यपुस्तके आणि पुस्तकातील धडे वाचून त्याखालची प्रश्नोत्तरे सोडविण्यावरच जास्त भर दिलेला दिसून येतो. खरंतर अध्ययनासाठी पाठ्यपुस्तकावर अवलंबून राहणे हे एका चाकोरी मध्ये अडकून पडण्यासारखे आहे. जसे विहिरीतील बेडूक त्याचे जीवन फक्त विहिरी पुरतेच मर्यादित आहे. खरंतर कोविड संक्रमणाच्या समस्येतून एक नवी दिशा ही शिक्षणपद्धतीला मिळू शकेल त्यासाठी शिक्षण हे पाठ्यपुस्तकाच्या चाकोरी मध्ये न ठेवता युट्युब वरचे व्हिडिओ, विकिपीडिया सारखे माहितीचे संग्रह, वेगवेगळ्या वेबसाईट असा जणू चौफेर माहितीचा खजिना आपल्या समोर असताना त्यांचा ऑनलाइन शिक्षण प्रक्रियेमध्ये वापर होणे गरजेचे आहे.

शिक्षण प्रक्रियेतील तिसरा गट आहे जो मूल्यमापन - पारंपारिक पद्धती मध्ये दीर्घोत्तरी प्रश्न, एका वाक्यात उत्तरे, रिकाम्या जागा, स्वाध्याय इत्यादी वर भर दिलेला दिसून येतो. परंतु ऑनलाइन शिक्षण पद्धतीमध्ये प्रश्नावली, सर्वे किंवा मतचाचणी सारखी तंत्र वापरून परीक्षा होताना दिसत येत आहे. सद्यस्थितीत दहावी, बारावी, महाविद्यालयीन विद्यार्थ्यांचे मूल्यमापन असेच होत आहे. काही ठिकाणी मूल्यमापनासाठी कागद- पेन या पारंपारिक साधनांचा वापर होताना दिसून येत असून शिक्षकांना प्रश्नोत्तरे फोटो काढून पाठवणे, शिक्षकांनी पाठवलेली प्रश्नपत्रिका त्याची प्रिंट काढून त्यावर ती सोडविणे व ती पुन्हा शिक्षकांना पाठविणे यावरच भर दिलेला दिसून येतो.

नवीन शिक्षण पद्धतीत- शिक्षकाची भूमिका

कोरोना संक्रमणानंतरच्या जगात शिक्षण क्षेत्रासमोर बरीच आव्हाने निर्माण झाली आहेत. शिक्षण प्रक्रियेमध्ये मोठ्या प्रमाणात समस्या निर्माण झालेल्या दिसून आल्या. यातील शिक्षकाची भूमिका जास्त आव्हानात्मक असून शिक्षकाला विद्यार्थ्यांशी वन दू वन संवाद साधायला येथे मर्यादा येते शिवाय असे काही शालेय, महाविद्यालयीन विद्यार्थी आहेत त्यांना इंटरनेट कनेक्शन विषयी समस्या आहे. ग्रामीण खेड्यातील

दुर्गम भागातील विद्यार्थ्यांचा यामध्ये समावेश आहे. तसेच मोठ्या प्रमाणावर झालेल्या लॉकडाऊन मुळे निर्माण झालेला आर्थिक प्रश्न यामुळे अल्प उत्पन्न असलेल्या कुटुंबातील मुलांना ऑनलाइन शिक्षणासाठी आवश्यक असलेले साहित्यही मिळणे दुरापास्त झाले आहे. त्याचाही परिणाम विद्यार्थ्यांच्या ज्ञानार्जनावर होत आहे. महागडे डेटा प्लॅन्स, वाढलेल्या मोबाईल किमती, अशा परवडू न शकणाऱ्या ऑनलाइन उपकरणांमुळे सर्वच विद्यार्थी या ऑनलाईन प्रवासात असतील याची खात्री नाही.

सहाजिकच सर्वात मोठी भूमिका ही शिक्षकाची असून अध्यापनासाठी वेगवेगळ्या तंत्रांचा वापर करणे शिक्षकाला आवश्यक आहे. ठराविक वेळेत घेतलेले लेक्चर, ठराविक वेळेत शिकविलेला विषय रेकॉर्ड करून ठेवणे, जे विद्यार्थी शिक्षणापासून वंचित राहतात त्यांच्यासाठी उपाय योजना करणे. यासाठी स्थानिक पातळीवर जेवढी मदत करता येईल तेवढे करणे. विद्यार्थी पाठ्यपुस्तका पुरताच मर्यादित राहणार नाही या गोष्टीकडे लक्ष देणे. पाठ्यपुस्तकाला अनुसरून ऑनलाईन उपलब्ध होणारे संदर्भ वाचण्यासाठी प्रेरित करणे जेणेकरून अधिकाधिक ज्ञानकण विद्यार्थी ग्रहण करेल. शिक्षकाने विद्यार्थ्याला नेमके ज्ञान कसे मिळेल या गोष्टीकडे लक्ष द्यावे. विद्यार्थ्याला पुस्तकातील संकल्पनेशिवाय अधिकाधिक ज्ञान संदर्भग्रंथातून उपलब्ध झाल्यावर त्यावर विचार करण्यास प्रेरित करावे. विद्यार्थ्यांना अध्यापन करत असताना विषयानुरूप चर्चा करण्यासाठी प्रेरित करावे. विद्यार्थ्याला ऑनलाईन स्वाध्याय देत असताना त्यांच्या सुप्त गुणांना कशी संधी मिळेल त्यादृष्टीने प्रयत्न करावा. शिक्षकाने हे लक्षात ठेवणे गरजेचे आहे की शिक्षक हा केवळ अध्यापनाचे कार्य करत नसतो तर विद्यार्थ्यांमध्ये स्वतंत्रपणे ज्ञान ग्रहण करण्याची क्षमता निर्माण करत असतो.

कोरोना संक्रमणाचे संकट हे पारंपारिक प्रकारच्या अध्ययनाची पुनर्रचना करण्यासाठी मोलाची संधी मानून जसे इस्त्रायली शिक्षण व्यवस्थेने शाळा, महाविद्यालयीन आणि विद्यापीठ स्तरावर नावीन्यपूर्ण बदल करावयास सुरुवात केली आहे तसेच प्रयत्न भारतातही होणे आवश्यक आहे भारतातही डिजिटल शिक्षणाचे हे आव्हान पेलावेच लागणार असून त्यात अडचणी ह्या असणारच आहेत परंतु त्यावर कल्पकतेने मात करावी लागेल.

आपण मात्र, पायाभूत सुविधांचा अभाव असल्यामुळे तंत्रज्ञानाचा अनिवार्य वापर असणारी नवीन अध्ययन प्रक्रिया कशी राबविणार, या पाशीच येऊन थांबत आहोत. त्याऐवजी आपला दृष्टिकोन सकारात्मक करत तंत्रज्ञानाचा किती परिणामकारकरीत्या वापर करता येईल याचा विचार करणे आवश्यक आहे. खरंतर आता प्रत्येक शिक्षकाला स्वायत्तता मिळाली आहे. डिजिटल युगात QR कोडच्या माध्यमातून क्रांती करणारे सन्माननीय रणजीतसिंह डिसले गुरुजी आज आपल्यासमोर एक महत्त्वपूर्ण उदाहरण आहे. शिक्षकांनी ऑनलाईन पाठातून आपल्याला नेमके काय साध्य करायचे आहे हे ठरविणे आवश्यक आहे. नवनव्या कल्पना वापरून, नवनवे उपक्रम कसे राबवता येतील, नवे बदल कसे करता येतील याचा शिक्षकाने विचार करणे गरजेचे आहे.

खरंतर संकटकाळ हा नावीन्यतेसाठी पोषक घटक असतो, हे केव्हा घडते जेव्हा कोणत्याही समस्येला न घाबरता, न डगमगता आपण धैर्याने कल्पकतेने सामोरे जातो. कोरोना संकटाने शिक्षकांना तंत्रज्ञानाचे महत्त्व लक्षात आले. कोरोना कालावधीत झालेली सर्व क्षेत्रातील हानी भरून काढायची असेल तर गरज आहे प्रचंड इच्छाशक्तीची, प्रत्येकाच्या मानसिकतेतील बदलाची, सकारात्मक दृष्टिकोनाची यातून शिक्षण क्षेत्रात झालेले बदल स्वीकारण्याची तयारी प्रत्येकाची असणे गरजेचे आहे. समाजाच्या सर्वच स्तरापर्यंत योग्य प्रकारे माहिती पोहोचवण्यासाठी शिक्षकांशीवाय दुसरा कोणता चांगला दुवा असू शकत नाही. शिक्षकांचा विद्यार्थ्यांवर, पालकांवर व समाजावर जेवढा प्रभाव असतो तेवढा अन्य कुणाचाच नसतो यासाठीच शिक्षकांनी योग्य प्रकारे माहिती विद्यार्थ्यांपर्यंत पोहोचविण्याचा प्रयत्न केला पाहिजे. विद्यार्थ्यांच्या मनातील भीती, चिंता कशी दूर करता येईल या दृष्टीने विचार करणे गरजेचे आहे.

कोविड काळातील शिक्षक, विद्यार्थ्यांपुढील समस्या

1. कोरोनाकाळातील ढासळलेल्या आर्थिक परिस्थितीमुळे डिजिटल माध्यमांचा वापर सामान्य पालक, विद्यार्थ्यांना परवडणारा नाही.
2. ग्रामीण भाग, खेडेगावात इंटरनेटचा अभाव आढळतो.
3. विद्यार्थी, पालकांमध्ये नैराश्य, उदासीनतेमुळे मानसिक आरोग्यही बिघडलेले दिसते.
4. विद्यार्थी, मोबाईलचा अतिरिक्त वापर करताना दिसून येत आहेत. उदा. अभ्यासाव्यतिरिक्त गेम्स, कार्टून बघणे, इतर व्हिडीओ बघणे इ.
5. स्क्रीनवर जास्त वेळ राहिल्यामुळे डोळ्यांच्या देखील समस्या निर्माण होत आहेत.
6. मुलं मैदानी खेळापासून वंचित राहत आहेत.
7. शिक्षक, प्राध्यापकांना जास्तीत जास्त डिजिटल प्रशिक्षण देण्याची गरज आहे.
8. योगा, प्राणायाम इत्यादी आरोग्यदायी व्यायामाचा अभाव.
9. अनियमित होणारा वीजपुरवठा.
10. ग्रामीण भागातील पालकांमध्ये डिजिटल शिक्षणाच्या ज्ञानाबद्दल असणारा अभाव.

उपाय योजना

1. स्थानिक पातळीवर शिक्षक, पालक यांच्या मदतीने आर्थिकस्थिती नसलेल्या मुलांना शिक्षण प्रवाहात आणण्याचा प्रयत्न करावा.
2. इंटरनेट कनेक्टिव्हिटी नसेल तर स्थानिक केबलचा शिक्षणासाठी वापर करावा.
3. मानसिक आरोग्य सुधारण्यासाठी शिक्षकाने समूहदेशकाची भूमिका घ्यावी.
4. मोबाईल, लॅपटॉपचा मुलं अतिरिक्त वापर करणारा नाही यासाठी पालकांमध्ये जागृती करावी.
5. ठराविक वेळेतच विद्यार्थी अभ्यासासाठी मोबाईलचा वापर करेल याकडे पालकांचे लक्ष असावे.
6. मुलांच्या सृजनशीलतेला संधी मिळेल असे स्वाध्याय, प्रयोग करण्यास द्यावे.
7. योगा, प्राणायाम इ. ऑनलाइन मार्गदर्शन केल्यास त्याचा फायदा आरोग्यावर होईल.
8. शिक्षक, प्राध्यापकांना जास्तीत जास्त डिजिटल शिक्षण, प्रशिक्षण मिळाल्यास त्याचा फायदा विद्यार्थ्यांना होईल.
9. ऑनलाइन शिक्षणाद्वारे आपण संपूर्ण जगाशीही जोडले जाऊ शकतो याची जाणीव सर्वांना होणे गरजेचे आहे.

समारोप

ज्ञान मंदिरात दिले जाणारे शिक्षण कोरोनासारख्या जागतिक संकटामुळे बंधनात आले. कोविड 19 ने सर्वच क्षेत्रात पुढे अनेक समस्या निर्माण झाल्या त्याला शिक्षण क्षेत्रही अपवाद नाही. विद्यार्थ्यांच्या सुरक्षिततेच्या दृष्टीने ऑनलाइन शिक्षणावर भर देण्यात आला. ऑनलाइन शिक्षणातील सर्वात मोठी भूमिका शिक्षकाची असल्यामुळे कशाप्रकारे हे तंत्रज्ञान शिक्षकाने आत्मसात केले आहे? किती कल्पकतेने या तंत्रज्ञानाचा शिक्षक वापर करतो? यावर या लॉकडाउन काळातील शिक्षणाची यशस्विता अवलंबून आहे.

संदर्भ साहित्य:

1. दि करोना व्हायरस – डॉ. राजेश पारिख, प्रकाशक - संगणक प्रकाशन
2. सकाळ, लोकसत्ता, महाराष्ट्र टाईम मधील पुरवणी, जीवन शिक्षण मासिक.

भारतातील ग्रंथालयशास्त्र अभ्यासक्रमाचा इतिहास

भक्ती प्रसाद गावस

ग्रंथपाल, प्रगति महिला शिक्षणशास्त्र महाविद्यालय,

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सारांश:

माहिती आणि मनोरंजनाच्या या क्षेत्रात आज अनेक साधनांची भर पडत आहे. त्यामुळेच ग्रंथालय आणि माहितीशास्त्र या ज्ञानशाखेकडे आज तरुण वर्ग आकर्षित होत आहे. संगणकाचे जाळे आज जसे सर्वत्र पसरले आहे तसेच ग्रंथालयीन सेवेत, कामकाजात संगणकाचा वापर होत आहे. ग्रंथालयातील पारंपारिक सेवेला आधुनिक तंत्रज्ञानाची जोड लाभली आहे. त्यामुळे ग्रंथालयीन सेवा या गतिमान झाल्या आहेत. म्हणूनच वाचकांना आधुनिक सेवा देणाऱ्या सक्षम मनुष्यबळाची आज कमतरता भासत आहे. अनेक संस्था आधुनिक ग्रंथपालांच्या प्रतीक्षेत आहेत. ग्रंथालय आणि माहितीशास्त्रात सक्षम, तज्ज्ञ व प्रशिक्षित ग्रंथपाल, ग्रंथालयीन कर्मचारी घडवण्यासाठी आणि ग्रंथालयीन सेवेचा जास्तीतजास्त लाभ वाचकांना होण्यासाठी ग्रंथालय आणि माहितीशास्त्रात शिक्षण घेणे गरजेचे आहे. आज विविध विद्यापीठांमध्ये हे अभ्यासक्रम आहेत. त्याचा लाभ घेणे गरजेचे आहे. आज महाविद्यालये, शाळा, सार्वजनिक ग्रंथालये, सहाय्यक ग्रंथपाल अशी पदे आहेत. ग्रंथालयशास्त्राचे योग्य प्रशिक्षण घेतल्यास विद्यापीठ व महाविद्यालयीन स्तरावर ग्रंथपाल, सहा. ग्रंथपाल, उपग्रंथपाल त्याचप्रमाणे शासकीय ग्रंथालये, वस्तुसंग्रहालये या ठिकाणीदेखील नोकरीच्या संधी असतात.

प्रस्तावना:

आधुनिक काळास ज्ञानाधारित समाज म्हटले जाते. कारण माहिती या संकल्पनेला महत्त्वाचे स्थान प्राप्त झाले आहे. दैनंदिन जीवनात शिक्षण, संशोधन, औद्योगिक क्षेत्र, पर्यटन, वैद्यकीय क्षेत्र, व्यवस्थापनशास्त्र या सर्वांमध्ये माहिती या घटकास महत्त्वाचे स्थान प्राप्त झाले आहे. ग्रंथालयातील माहिती प्रलेखांचे (वाचन सामुग्री) व्यवस्थापन करणे व त्यांच्या सहाय्याने वाचकांना विविध प्रकारच्या सेवा देणे या सर्व कार्यांच्या अभ्यासाचा अंतर्भाव या शास्त्रात होतो. हे शास्त्र ही इतर शास्त्रांप्रमाणेच काही तत्त्वे, तत्त्वज्ञान व प्रयोगावर आधारलेले आहे.

सध्याच्या युगात इंटरनेटमुळे ग्रंथांची व ग्रंथालयांची गरज नाही असे बऱ्याचवेळा बोलले जाते. परंतु भारतसह इतर प्रगत देशांमध्ये दिवसेंदिवस प्रत्येक ग्रंथांची खरेदी करून ती वाचण्याकडे कल वाढत असल्याचे दिसून येते. यावरून ग्रंथालयाची अनिवार्यता लक्षात येते. कारण प्रत्यक्षात ग्रंथ आणि इतर वाचन साहित्या हाताळण्याचे व त्यातून वाचन करण्याचे आणि माहिती प्राप्त करतण्याचे समाधान वेगळेच असते.

ग्रंथालयात आलेल्या वाचकाला ग्रंथ देणे एवढेच कार्य ग्रंथालयामार्फत केले जात नाही. ग्रंथालयातील ग्रंथपाल व त्यांच्या सहकाऱ्यांना ग्रंथालयातील वाचनसामुग्री व वाचकांना दिल्या जाणाऱ्या सेवा व सोई सुविधा यांचे शास्त्रोक्त पद्धतीने नियोजन करण्यासाठी अधिक परिश्रम घ्यावे लागतात. या सर्व कार्याचा व वाचकांना दिल्या जाणाऱ्या सेवांचा अभ्यास ज्या शास्त्रात केला जातो त्या शास्त्रालाच ग्रंथालय आणि माहितीशास्त्र असे शिर्षक प्राप्त झाले आहे. या विषयाच्या अभ्यासामुळे व्यक्तीमत्त्वा विकास व ज्ञानशोध

संस्काराचे कार्य करण्यासाठी या शास्त्राची मदत होते. तसेच या क्षेत्रात व्यवसायाच्या संधी उपलब्ध होतात. या अभ्यासक्रमात खूप बाबी शिकण्यासारख्या आहेत व इतरांना देण्यासारख्या आहेत.

व्यापाराच्या दृष्टीकोनातून सन 1600 मध्ये ब्रिटीशांनी ईस्ट इंडीया कंपनीची स्थापना केली. भारतात ब्रिटीश राज्यकर्त्यांचे काम जसजसे वाढू लागले तसतसे त्यांना नोकरदार वर्गाची गरज भासू लागली. इंग्रजांनी अनेक शैक्षणिक संस्थांची निर्मिती केली. वॉरन हेस्टिंग्ज यांनी सन 1781 मध्ये कलकत्ता, मद्रास कॉलेजची स्थापना केली. जोनायन डुकन यांनी सन 1792 मध्ये बनारस संस्कृत कॉलेजची स्थापना केली. दि. 24 नोव्हेंबर 1800 मध्ये कोलकत्ता येथे फोर्ट विल्यम कॉलेजची स्थापना करण्यात आली. ब्रिटीशकाळात भारतात विद्यापीठ पातळीवर शिक्षणाची व्यवस्था सन 1857 मध्ये कलकत्ता विद्यापीठाच्या स्थापनेने झाली. त्याच वर्षी मुंबई आणि मद्रास विद्यापीठांची स्थापना झाली. ही तिन्ही विद्यापीठे लंडन विद्यापीठाच्या धर्तीवर स्थापन करण्यात आली होती. सुरुवातीला परिक्षांचे आयोजन करण्याचे कार्य ही विद्यापीठे करत होती. या विद्यापीठांचे संघटन आणि व्यवस्थापन ब्रिटीश विद्यापीठांच्या पद्धतीने होत असे. या विद्यापीठांची स्थापना जरी सन 1857 साली झाली असली तरी त्यांची ग्रंथालये स्थापन होण्यासाठी बराच कालावधी लागला. कलकत्ता विद्यापीठाचे ग्रंथालय 1873 साली, मुंबई विद्यापीठाचे ग्रंथालय 1879 साली तर मद्रास विद्यापीठाचे ग्रंथालय 1907 साली स्थापन झाले. सन 1904 मध्ये 'इंडियन युनिव्हर्सिटी ऍक्ट' ची स्थापना झाल्याने विद्यापीठ आणि महाविद्यालयात ग्रंथालयांना महत्त्वाचे स्थान प्राप्त झाले. या कायदानुसार विद्यार्थ्यांना ग्रंथांची देवाणघेवाण करण्याची सोय उपलब्ध झाली.

पेशवाईचा अंत झाल्यानंतर इंग्रज सरकारच्या पुढाकाराने महाराष्ट्रात नेटिव्ह जनरल लायब्ररीची स्थापना करण्यात आल्या. अहमदनगर (1836), नाशिक (1840), मुंबई (1846), पुणे (1848), कोल्हापूर (1850), सातारा (1852), सोलापूर (1852) या त्या नेटिव्ह लायब्ररीच्या आहेत. ठाणे येथील ग्रंथसंग्रहालयाची स्थापना 1895 मध्ये झाली. एका बाजूला नेटिव्ह लायब्ररीची स्थापना इंग्रजांमार्फत होत असताना देशात समाजशिक्षणाच्या उद्देशाने अन्य ग्रंथालये स्थापन करण्यात येत होती.

भारतातील ग्रंथालयशास्त्राचे शिक्षण:

आपल्या देशात असलेली शिक्षण पद्धती ही स्वातंत्र्यपूर्व काळात ब्रिटीशांनी घालून दिलेली आहे. सुरुवातीला प्राथमिक शिक्षण मग माध्यमिक, उच्च माध्यामिक शिक्षण, महाविद्यालयातून पदवी शिक्षण, विद्यापीठातून प्राप्त होणारे पदव्युत्तर, संशोधन शिक्षण अशा प्रकारचे असते. मात्र सन 1947 नंतर या शिक्षण पद्धतीत वेळोवेळी बदल करण्यात आले. भारत स्वातंत्र्य झाल्यानंतर स्वतंत्र भारताचा नागरीक उत्तम पद्धतीने घडवला जावा यासाठी विविध समित्या, आयोग यांची स्थापना करण्यात आली. शिक्षण घेताना या आयोगाचे आणि समित्यांनी आखलेल्या धोरणांची अंमलबजावणी करण्याचा शासनाने प्रयत्न केला. प्राथमिक स्तरावरील शिक्षण सुधारण्यासाठी प्रयत्न करण्यात आले. या सर्व प्रयत्नांचा परिपाक म्हणजे सन 1986 चे नवे शैक्षणिक धोरण होय. या धोरणानुसार भारताच्या शिक्षणप्रणालीला आधुनिक आणि प्रगत स्वरूप देत असताना ग्रंथालयांना सर्व पातळीवर महत्त्वाचे स्थान देण्यात आले. डॉ. एस. आर. रंगनाथन् यांनी महाविद्यालय आणि विद्यापीठ स्तरावर ग्रंथालये सक्षम करण्यासाठी अविरत प्रयत्न केला. ग्रंथालय हे शिक्षण पद्धतीचे महत्त्वाचे अंग आहे याची जाणिव शासनाला करून दिली. सन 1947 पर्यंत भारतात 20 विद्यापीठांची स्थापना झालेली

होती. आज 2021 अखेर त्यांची संख्या 988 आहे. शिक्षणाचा वाढता प्रसार आणि वाढती लोकसंख्या यामुळे शिक्षण घेणाऱ्यांच्या संख्येत वाढ होताना दिसते. देशात विज्ञान आणि तंत्रज्ञान क्षेत्रात जो बदल होत आहे त्याचा परिणाम म्हणून आय.आय.टी., कृषी विद्यापीठे, इंडियन इन्स्टिट्यूट ऑफ मॅनेजमेंट, निसकेअर, निस्साट अशा विविध संस्थांची निर्मिती झाली. दूरशिक्षणासाठी मुक्त विद्यापीठांची स्थापना करण्यात आली. उच्च शिक्षण संस्थामध्ये आधुनिक संकल्पनांचा विस्तार होण्यासाठी ग्रंथालयांची उभारणी करण्यात आली आहे. डॉ. एस.आर.रंगनाथन्, डॉ. सी.डी.देशमुख यासारख्या थोर पुरुषांनी आधुनिक व तंत्रशुद्ध पद्धतीने ग्रंथालयाची उभारणी करण्यासाठी सल्ला व सहाय्य केले. आधुनिक सुविधा आणि साधनांची संपन्न अशी भव्य ग्रंथालये उभी राहण्यासाठी प्रशिक्षित ग्रंथालय सेवकांचे योगदान महत्वाचे असते. प्रशिक्षित ग्रंथालय सेवक उपलब्ध होण्यासाठी ग्रंथालयशास्त्राचे शिक्षण असणे गरजेचे आहे.

डॉ.एस.आर.रंगनाथन् यांनी ग्रंथालय चळवळीस गती प्राप्त करून दिली. रंगनाथन् हे मद्रास विद्यापीठात गणित आणि भौतिकशास्त्राचे प्राध्यापक होते. प्राध्यापक म्हणून कार्यरत असताना त्यांना ग्रंथपाल या पदावर नियुक्त करण्यात आले. मात्र त्यांच्याकडे ग्रंथालयशास्त्राचे प्रशिक्षण नव्हते आणि त्यावेळी भारतात त्यावेळी ती सोय नसल्याने त्यांना ग्रंथालयशास्त्राचे शिक्षण घेण्यासाठी सन 1924 मध्ये इंग्लंडला पाठवण्यात आले. ग्रंथालयशास्त्राचे शिक्षण मिळावे आणि तेथील ग्रंथालयांचे कामकाज त्यांना पहाता यावे हा मुळ उद्देश होता. त्यांच्या इंग्लंडमधील काळात त्यांना 100 पेक्षा अधिक ग्रंथालयीन कामकाजाचे निरीक्षण केले, त्यावेळी त्यांच्या लक्षात आले की भारतातील ग्रंथालयांना समान तत्त्वे नाहीत त्यामुळे त्यांच्या विकासात अडथळे येत आहेत. ही परिस्थिती बदलण्यासाठी रंगनाथन् यांनी सर्व ग्रंथालयांना मार्गदर्शक ठरतील अशी सुत्रे तयार केली ती आज रंगनाथनांची पंचसुत्री म्हणून ओळखली जातात. त्यांनी आपली ही तत्त्वे Five Laws of Library Science या ग्रंथात मांडली. आज संपूर्ण जगात हे पुस्तक ग्रंथालयशास्त्रासाठी मार्गदर्शक आहे. यानंतर अनुक्रमे सन 1933 आणि 1934 मध्ये कोलन क्लासिफिकेशन आणि क्लासिफाईड कॅटलॉग कोड ही पुस्तके प्रकाशित झाली.

डॉ. रंगनाथन् यांच्या बरोबरच हिंदुस्थानात ग्रंथालय चळवळीचा पाया श्रीमंत महाराज सयाजीराव यांनी घातला. सन 1910 मध्ये आपल्या विलायतेच्या दौऱ्यात युरोप आणि अमेरिका या देशातील मोफत सार्वजनिक ग्रंथालयांचे कार्य पाहून आपल्या प्रजाजनांसाठी मोफत सार्वजनिक ग्रंथालयांची स्थापना करावी अशी संकल्पना त्यांच्या मनात आली. त्यावेळी महाराजांनी अमेरिकेतील मि. बोर्डन यांची बडोदा संस्थानात ग्रंथालयांचे डायरेक्टर म्हणून नेमणूक केली. डॉ. बोर्डन हे ग्रंथालयशास्त्रात अत्यंत निपूण असून ग्रंथालय चळवळीचे उत्पादक जगविख्यात डॉ. मेलविल ड्युई यांच्या मार्गदर्शनाखाली ग्रंथालयशास्त्र प्रशिक्षण वर्गात शिक्षक म्हणून कार्यरत होते. बोर्डन यांनी बडोदा संस्थानात ग्रंथालयाचा प्रसार करण्यासाठी मदत केली त्याचबरोबर बडोदा संस्थानात सन १९१० मध्ये ग्रंथालयशास्त्राचे शिक्षण देणारा पहिला वर्ग सुरू झाला. इतकेच नव्हे तर महाराजांनी ग्रंथालयशास्त्राचे शिक्षण घेणाऱ्यांसाठी मासिक शिष्यावृत्ती जाहीर करून भारतातील इतर ग्रंथपालांसाठी हे द्वार खुले ठेवले. या त्यांच्या कार्याला शिक्षणखात्यातील पुस्तकप्रेमी आणि मित्रमंडळ पुस्तकालय योजनेचे पुरस्कर्ते श्री. मोतीभई आमीन यांची साथ मिळाली. अमेरिकन तज्ज्ञ डॉ. बोर्डन आणि अमीन यांनी राज्यातील ग्रंथालयांचा अभ्यास करून गावोगावी सार्वजनिक ग्रंथालये स्थापन केली. पुढे बडोदा संस्थानात लायब्ररी मिसेलीनी हे त्रिभाषीक मासिक प्रकाशित करून सामान्य जनतेत ग्रंथालयाविषयी आवड व आस्था निर्माण केली.

अनुक्रमे सन 1920 व 1929 मध्ये आंध्र आणि मद्रास ग्रंथालयसंघाने ग्रंथालय प्रशिक्षणाचे वर्ग सुरु केले. विद्यापीठ स्तरावर पहिला शिक्षणक्रम पंजाबमध्ये लाहोर विद्यापीठात सुरु झाला. या विद्यापीठात अमेरिकन ग्रंथपाल व मेलविल ड्युईचे विद्यार्थी डॉन डिकिन्सन यांची नेमणूक करण्यात आली. डिकिन्सन यांनी पंजाब विद्यापीठाची तालिका तयार करून तसेच संपूर्ण ग्रंथालय प्रशासनाची व्यवस्था पाहून विद्यापीठापातळीवरचा ग्रंथालयशास्त्राचा पहिला अभ्यासक्रम भारतात सुरु केला. विद्यापीठांतर्गत ग्रंथालयशास्त्राचे शिक्षणक्रम मद्रास विद्यापीठ (1931), आंध्र (1937), बनारस (1941) आणि मुंबई विद्यापीठात 1944 रोजी सुरु झाले. हे अभ्यासक्रम प्रमाणपत्र स्वरूपाचे होते. मद्रास विद्यापीठाने 1937 मध्ये प्रमाणपत्र अभ्यासक्रमाचे रुपांतर 1 वर्षाच्या पदविका अभ्यासक्रमात केले. मद्रास नंतर मुंबई आणि बनारस विद्यापीठाने पदविका शिक्षणक्रम सुरु केला. मुंबई विद्यापीठाचा शिक्षणक्रम अर्धवेळ असल्याने सेवेत कार्यरत असलेल्या कर्मचाऱ्यांना या अभ्यासक्रमाच्या प्रवेशास प्राधान्य देण्यात आले होते. सन 1946 रोजी कलकत्ता विद्यापीठाने आणि सन 1947 रोजी दिल्ली विद्यापीठाने पदविका शिक्षणक्रम सुरु केला. या अभ्यासक्रमात वर्गीकरण, तालिकीकरण, ग्रंथसूची, ग्रंथनिवड, संदर्भसेवा, संघटन आणि सामान्यज्ञान या तात्विक भागांचा आणि प्रात्याक्षिक भागांचा समावेश करण्यात आला. या शिक्षणक्रमास मॅट्रीक परिक्षा उत्तीर्ण अशी प्रवेश पातत्रा निश्चित करण्यात आली होती.

स्वातंत्र्योत्तर काळातील ग्रंथालय शिक्षण:

स्वातंत्र्योत्तर काळात दिल्ली विद्यापीठाने सन 1949 मध्ये एम.लिब. आणि पीएच.डी. अभ्यासक्रम सुरु केला. सन 1951 मध्ये अलीगड मुस्लीम विद्यापीठ, 1956 मध्ये बडोदा आणि नागपूर विद्यापीठ, विक्रम विद्यापीठ उज्जैन यांनी ग्रंथालयशास्त्राचे अभ्यासक्रम सुरु केले. आज बहुतांशी विद्यापीठातून ग्रंथालयशास्त्राचे प्रमाणपत्र, पदवी, पदव्युत्तर तसेच पीएच.डी.चे शिक्षक्रम देण्याची व्यवस्था झाली आहे. स्वातंत्र मिळाल्यानंतर विद्यापीठांच्या विकासासाठी भारत सरकारने वेळोवेळी विविध समित्या व आयोग गठीत करून ग्रंथालयशास्त्राच्या प्रगतीस चालना दिली.

1. डॉ. राधाकृष्णन कमिटी :

भारतामध्ये सन 1948 रोजी डॉ. राधाकृष्णन यांच्या अध्याक्षतेखाली भारतीय शिक्षण आयोग नेमला. या आयोगाचे अध्याक्ष डॉ. राधाकृष्णन असल्याने या आयोगास राधाकृष्णन आयोग नावाने प्रसिद्ध आहे. स्वातंत्र्यानंतर शैक्षणिक विकास साधण्यासाठी या आयोगाची स्थापना करण्यात आली होती. डॉ. राधाकृष्णन यांनी भारतभर दौरा करून विविध शैक्षणिक संस्था व विशेष ग्रंथालयांचे निरीक्षण करून तेथील कामकाजाचा आढावा घेतला. आणि अहवाल करून त्यामध्ये पुढील शिफारशी केल्या आहेत.

1. विद्यापीठ ग्रंथालय हे विद्यापीठीय शिक्षणक्रमाचे हृदय मानावे.
2. उच्च शिक्षण, व्यवस्थापन व संघटन यात ग्रंथालयांना महत्वाचे स्थान द्यावे.
3. वाचकांच्या गरजा लक्षात घेवून शैक्षणिक ग्रंथालयांनी वाचनसाहित्य संग्रह करावा.
4. शैक्षणिक ग्रंथालयात काम करण्यासाठी शिक्षित व प्रशिक्षित कर्मचारी असावेत.

2. विद्यापीठ अनुदान आयोग:

सन 1956 मध्ये विद्यापीठ अनुदान आयोगाची स्थापना करण्यात आली. या आयोगामुळे उच्च शिक्षणाच्या विकासाला चालना मिळाली.सुरुवातीपासून या आयोगाने उच्चशिक्षणात ग्रंथालयांचे महत्त्व

ओळखून पंचवार्षिक योजनेत ग्रंथालयाच्या उपक्रमांना प्राधान्य दिले. या आयोगाचे पहिले अध्याक्ष डॉ. सी.डी.देशमुख यांनी सन 1957 मध्ये विद्यापीठ आणि महाविद्यालयांना ग्रंथालयाच्या सुव्यवस्थेबाबत मार्गदर्शन करण्यासाठी डॉ. रंगनाथन् यांच्या मार्गदर्शनाखाली ग्रंथालय समिती स्थापन केली. या समितीने आपला अहवाल सन 1965 मध्ये प्रसिद्ध केला. या अहवालात डॉ. रंगनाथन् यांनी ग्रंथालयीन कामकाजासाठी काही प्रमाणके तयार केली. ग्रंथालयीन कर्मचाऱ्यांच्या नेमणुकीसाठी स्टाफिंग पॅटर्न तयार करून व्यावसायिक कर्मचाऱ्यांसाठी शैक्षणिक पात्रता नमुद केली. डॉ. रंगनाथन् यांनी केलेल्या शिफारशी आजच्या संगणक युगात ग्रंथालय सेवांचे स्वरूप बदलले तरी धोरणे निश्चित करण्यासाठी वापरण्यात येतात.

3. कोठारी कमिशन:

सन 1964 मध्ये भारत सरकारने डॉ. डी.एस. कोठारी यांच्या मार्गदर्शनाखाली शिक्षण विषयक धोरणांसाठी या समितीची स्थापना केली. या समितीला एज्युकेशन कमिशन रिपोर्ट असे म्हणतात. या समितीने ग्रंथालयासंदर्भात पुढील शिफारशी नोंदविलेल्या आहेत.

1. शिक्षणसंस्थेच्या एकूण अंदाजपत्रकानुसार 6.5 टक्के ते 10 टक्के खर्च ग्रंथालयावर करावा.
2. ग्रंथालयासाठी वार्षिक वित्त निर्धारित करताना प्रत्येक विद्यार्थ्यामागे रु.25 आणि शिक्षकामागे रु. 300 या प्रमाणे आकारणी करावी.
3. ग्रंथालयीन कर्मचाऱ्याला प्रशिक्षण देण्याची व्यवस्था करावी.

4. रंगनाथन कमिटी:

सन 1957 मध्ये विद्यापीठ अनुदान आयोगाचे अध्याक्ष डॉ.सी.डी. देशमुख यांनी विद्यापीठ आणि महाविद्यालयीन ग्रंथालयांच्या सुव्यवस्था निश्चित करण्यासाठी डॉ. एस.आर.रंगनाथन् यांच्या मार्गदर्शनाखाली ग्रंथालय समिती स्थापन केली. या समितीने Library Science in Indian Universities या नावाने यु.जी.सी. ला आपला अहवाल सन 1965 मध्ये सादर केला. या अहवालात ग्रंथालयशास्त्र शिक्षणक्रमाची उद्दिष्टे, अभ्यासक्रम प्रवेश पातत्रा तसेच बी.लिब., एम.लिब. आणि पीएच.डी. या शिक्षणक्रमासंदर्भात विचार करण्यात आला होता. या समितीने पुढील सूचना केल्या आहेत.

1. व्यावसायिक ग्रंथपालांना प्रशिक्षण द्यावे.
2. व्यावसायिक ग्रंथपालांना पदवी व पदव्युत्तर शिक्षणाची संधी उपलब्ध करून द्यावी.
3. व्यावसायिक ग्रंथपालांना संशोधन करण्यासाठी प्रशिक्षण द्यावे.

हा अहवाल प्रसिद्ध झाला तेव्हा भारतात पाच विद्यापीठात ग्रंथालयशास्त्राचा पदव्युत्तर अभ्यासक्रम, अकरा विद्यापीठांमध्ये पदव्युत्तर पदविका अभ्यासक्रम आणि दिल्ली विद्यापीठात पदव्युत्तर पातळीवरचा अभ्यासक्रम सुरू होता. पण या अभ्यासक्रमात सुसुत्रता नव्हती. पीएच.डी. स्तरावरील अभ्यासक्रम सुरू करावेत अशी शिफारस अहवालात केली होती. त्याचबरोबर अभ्यासक्रमासाठी विद्यार्थी शिक्षक यांचे प्रमाण निश्चित केले होते. पदवीसाठी हे प्रमाण 10:1 आणि पदव्युत्तर शिक्षणासाठी 5:1 असावे असे नमुद केले होते.

5. ग्रंथालय शिक्षणक्रम पुनर्रचना:

दिल्ली विद्यापीठाने सन 1973 आणि 1977 मध्ये ग्रंथालयशास्त्र शिक्षणक्रमावर आधारित कार्यशाळा आयोजित केली होती. या कार्यशाळेत सुचविलेल्या शिफारशीवर चर्चा करण्यासाठी विद्यापीठ अनुदान

आयोगाच्या ग्रंथालय समितीने सन 1979 मध्ये दोन दिवसांचे चर्चासत्र आयोजित केले होते. या चर्चासत्रात ग्रंथालयशास्त्राच्या शिक्षणक्रमाच्या पुर्नरचनेच्या संदर्भात पुढील महत्त्वपूर्ण शिफारशी सुचविलेल्या आहेत.

1. बी.लिब. व एम.लिब. हे एक एक वर्षाचे अभ्यासक्रम असावेत.
2. ग्रंथालयशास्त्राच्या अभ्यासक्रमासाठी स्वतंत्र विभाग असावा व तो अन्य विभागांशी समकक्ष असावा.
3. ग्रंथालयशास्त्र शिक्षणक्रमाचे नाव ग्रंथालय आणि माहितीशास्त्र शिक्षणक्रम असावे.
4. ग्रंथालयशास्त्र विभागात संशोधनाची सुविधा असावी.
5. ग्रंथालयात संगणकाचा वापर, माहिती संग्रह आणि प्रतिप्राप्ती अशा विषयांचा समावेश असावा.

याच दरम्यान विद्यापीठ अनुदान आयोगाच्या सहकार्याने नागपुर विद्यापीठात सप्टेंबर 1983 मध्ये ग्रंथालय आणि माहितीशास्त्राचे राष्ट्रीय धोरण या विषयावर राष्ट्रीय चर्चासत्राचे आयोजन केले होते. या चर्चासत्रात ग्रंथालय आणि माहितीशास्त्र शिक्षणक्रमावर सविस्तर विचार करून योग्य त्या शिफारशी विद्यापीठ अनुदान आयोगाला पाठविण्यात आल्या. सन 1985 मध्ये भारत सरकारने प्रा. पी.टी.चटोपाध्याय अध्याक्ष आणि डॉ. बी.पी. बरूआ सचिव असलेली समिती ग्रंथालय आणि माहितीशास्त्राचे धोरण ठरविण्यासाठी नेमली. यानंतर याच समितीच्या अध्याक्षतेखाली आणखीन एक समिती नेमली आणि या समितीने सन 1988 मध्ये केंद्र शासनाला ग्रंथालय आणि माहितीशास्त्र संदर्भात आपल्या शिफारशी केल्या.

6. ग्रंथालय आणि माहितीशास्त्र पाठ्यक्रम विकसन समिती (कौला कमिटी):

सन 1990 मध्ये विद्यापीठ अनुदान आयोगाने प्रा. पी.एन. कौला यांच्या अध्याक्षतेखाली ग्रंथालय आणि माहितीशास्त्र विषयासाठी पाठ्यक्रम विकसन समिती (Curriculum Development Committee) ची स्थापना केली. या समितीने आपला अहवाल सन 1992 मध्ये Report of The Curriculum Development Committee on Library & Information Science या नावाने प्रसिद्ध केला. या अहवालामुळे ग्रंथालयशास्त्राचा दोन वर्षांच्या पदवी अभ्यासक्रमाचा आराखडा ठरविण्यात आला. तसेच संशोधनासाठी अभ्यासक्रमाची उद्दिष्टे, गुणविशेष आणि कार्यपद्धती सुचविली. तसेच उजळणी वर्गाची (Refresher Course) ची उद्दिष्टे व कार्यप्रणाली ठरविण्यात आली. या अहवालात पदवी अभ्यासक्रमासाठी आठ विषय, पदव्युत्तर अभ्यासक्रमासाठी सहा विषय निश्चित करण्यात आले. या समितीने राष्ट्रीय स्तरावरील अभ्यासक्रमात सर्व महत्त्वाच्या बाबींचा विचार केला. प्रत्येक अभ्यासक्रमासाठी स्वतंत्र उद्दिष्टे आणि संदर्भपुस्तकांची शिफारस केली. राष्ट्रीय स्तरावरील अभ्यासक्रमात सुसुत्रता आणण्याचा कौला समितीचा हा पहिलाच आणि महत्त्वपूर्ण प्रयत्न होता.

7. करिसिद्दप्पा कमिटी:

विद्यापीठ अनुदान आयोगाने ग्रंथालय आणि माहितीशास्त्र विषयाच्या अभ्यासक्रम विकसनासाठी सन 1997 मध्ये डॉ.सी.आर.करिसिद्दप्पा यांच्या अध्याक्षतेखाली समिती नेमली. या समितीने विभगवार बैठका, शिक्षणक्रम चालविणाऱ्या संस्थांना प्रश्नावली वितरीत करून आणि माहिती तंत्रज्ञानाचा प्रभाव लक्षात घेवून अहवाल तयार केला. या अहवालात पदवी आणि पदव्युत्तर शिक्षणक्रमाएवजी दोन वर्षांचा एकत्रित पदव्युत्तर (Integrated M.Lib & I.Sc.) शिक्षणक्रम असावा अशी शिफारस करण्यात आली. या अहवालात शिक्षणक्रमासाठी स्थानिक परिस्थितीनुसार 20 टक्के बदल करण्याची मुभा देण्यात आली होती. साधनसुविधांच्या संदर्भात प्रात्याक्षिकांसाठी वर्गीकरणाच्या सारणी, विषयशिर्षकांच्या यादी, शब्दकुलकोश हे

दोन विद्यार्थ्यांमध्ये 1 संच या प्रमाणात असावेत. ग्रंथालयात मुद्रीत व अमुद्रीत साहित्याचा संग्रह असावा. संगणक प्रात्याक्षिकांसाठी माहिती तंत्रज्ञानाची सुसज्ज कार्यशाळा आणि पाच विद्यार्थ्यांसाठी 1 संगणक असाचवा असे सुचविण्यात आले.

कौला कमिटी आणि डॉ. रंगनाथन कमिटीचा आधारभूम पाया धरून शिक्षक संख्या आणि माहिती तंत्रज्ञानाच्या अनुषंगाने वाढीव मनुष्यबळाची गरज नमुद केली. माहिती तंत्रज्ञानातील बदल विद्यार्थ्यांपर्यंत पोचण्यासाठी उजळणी वर्गाची उद्दिष्टे निश्चित केली.

प्रस्तुतच्या अहवालात नमुद केलेला अभ्यासक्रम हा दूरशिक्षण देणाऱ्या संस्थांसाठी स्विकृत करण्यात आला होता. या समितीने सन 1996 मध्ये दूरशिक्षण परिषदेने ग्रंथालय आणि माहितीशास्त्र शिक्षणक्रमासाठी तयार केलेली नियमावली थोड्याफार फरकाने स्विकारली होती.

करसिद्धप्पा कमिटीचा अहवाल सन 2001 मध्ये UGC Model Curriculum : Library & Information Science या नावाने प्रसिद्ध झाला. तो CDC अहवाल म्हणून ओळखला जातो. या अहवालात अभ्यासक्रमाची ग्रंथालय आणि माहितीशास्त्र अधिष्ठान अभ्यासक्रम, ज्ञान व्यवस्थापन, माहिती तंत्रज्ञान, संशोधन पद्धती अपाणि सांख्यिकीय तंत्रे, माहिती प्रणाली अशा सात विभागात मांडणी केली आहे.

समारोप:

वाचनसाहित्याचा विकास हा सामाजिक, शास्त्रीय, शैक्षणिक इत्यादी विकासाबरोबर होत गेला. पॅपिरसपासून सीडी, पेनड्राव, ई साहित्यापर्यंत वाचनसाहित्याचे स्वरूप बदलत गेले. हे वाचनसाहित्याचे बदलेले स्वरूप आणि वाचकांच्या बदलत्या गरजा लक्षात घेवून ग्रंथालय व्यवस्थापनात बदल होत आहेत. बदलत्या ग्रंथालयाचे व्यवस्थापन अधिक चांगल्या प्रकारे करता यावे यासाठी चांगल्या प्रशिक्षणाची आवश्यकता निर्माण झाली आहे. ही आवश्यकता पूर्ण करण्यासाठी वेळोवेळी ग्रंथालयशास्त्राच्या अभ्यासक्रमात बदल करण्यात आलेला आहे हे वरील आढाव्यावरून दिसून येत आहे.

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प्रस्तावना :-

आज जगभरात कोरोनाने कहर केला असून आजच्या तारखेपर्यंत जगात 19,28,04,978 लोकांना कोरोनाची लागण झाली आहे. यापैकी 41,46,745 रुग्ण मृत्यूमुखी पडले असून 17,11,68,637 सुधारणा झाली असून 1,77,25,076 रुग्ण उपचाराधीन आहेत. कोरोना या जागतिक महामारीला जवळपास 18 महिने पूर्ण झालेले असूनसुद्धा ही साथ नियंत्रणात आलेली दिसून येत नाही. या महामारीने संपूर्ण जगामध्ये धुमाकूट घातला आहे हे आपण पाहतोच आहोत. लाखो लोक मृत्यूमुखी पडत आहेत. काही देशांची अर्थव्यवस्था खिळखिळ करून टाकणारी ही प्रचंड मोठी महामारी आहे. आंतरराष्ट्रीय नाणेनिधीने व्यक्त केलेला नुकसानीचा प्राथमिक स्वरूपातील अंदाज ९ लाख कोटी डॉलर्स म्हणजेच जपान आणि जर्मनीच्या एकत्रित राष्ट्रीय उत्पन्नांच्या किंवा भारताच्या राष्ट्रीय उत्पादनाच्या ३ पट इतका आहे. या आर्थिक नुकसानीबरोबरच रोजगारात होणारी घट व त्यामुळे दारिद्र्यात होणारी वाढ संयुक्त राष्ट्र संघटनेच्या अहवालात नमूद केली असून यामध्ये केवळ भारतातच ४० कोटी लोक दारिद्र्यरेषेखाली ढकलेले जातील असे नोंदविले आहे. कोरोना या महामारीचे जगावर दुरगामी परिणाम झाले आहेत. मार्च २०२० पासून पूर्ण जग थांबले आहे. जवळपास या १८ महिन्यांच्या काळामध्ये उद्योग, कंपन्या, कारखाने बंद पडल्यामुळे अब्ज लोकांना रोजगार गमवावा लागला आहे. यामुळे जगात भयानक बेरोजगारीचा भडका उडाला आहे. तसेच या महामारीच्या भित्तिने १८ महिने स्वतःला चार भिंतीच्या आत कोंडून घेतल्यामुळे मनो रुग्णाचे मोठ्या प्रमाणात प्रमाण वाढीस लागले आहे. याविषयी रिझर्व्ह बँक ऑफ इंडियाचे गव्हर्नर शक्तिकांत दास म्हणतात की, कोरोना व्हायरस हे गेल्या १०० वर्षांतील सर्वात मोठे आर्थिक आणि आरोग्य संकट आहे. यामुळे उत्पादन, रोजगार, शिक्षण, बेरोजगारी आणि लोकांच्या आरोग्यावर अभूतपूर्व नकारात्मक परिणाम झालेला आहे. अनेक घरातील कर्त्याव्यक्तीचे निधन झाल्यामुळे अनेकांवर उपासमारीची वेळ आली आहे.

प्रस्तुत शोध पेपरमध्ये कोरोना महामारीमुळे जगातील सर्वात जास्त दहा प्रभावित देशातील पिडीत रुग्ण संख्या, मृत्यू पडलेली संख्या, उपचारादरम्यान सुधारणा झालेली संख्या, उपचार घेत असलेल्या संख्येची आकडेवारी आणि मृत्यू दर यांचा आढावा घेतला आहे. तसेच भारतातील राज्य निहाय पिडीत रुग्ण संख्या, मृत्यू पडलेली संख्या, उपचारादरम्यान सुधारणा झालेली संख्या आणि उपचार घेत असलेल्या रुग्ण संख्येच्या आकडेवारी यांचा अभ्यास करण्यात आला आहे.

संशोधन समस्या :-

संशोधन समस्या ही संशोधनाची प्रथम पायरी आहे. त्यामुळे कोणतेही संशोधन कार्य हाती घेत असताना संशोधकाला संशोधनाची समस्या निश्चित करावी लागते. त्यामुळे प्रस्तुत संशोधनात जागतिक कोरोना महामारी एक अभ्यास ही संशोधनाची समस्या निवडली आहे.

संशोधनाची उद्दिष्टे :-

कोरोना ही जागतिक महामारी समजून घेणे.

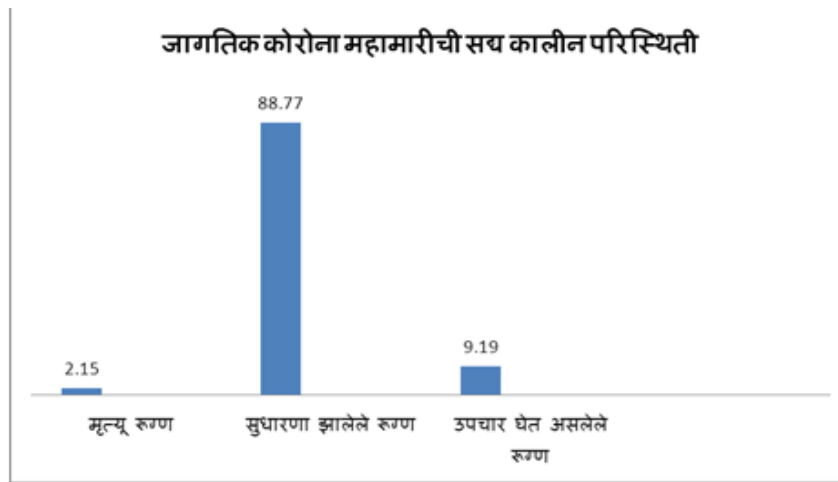
कोरोना महामारीने प्रभावित देशाचा अभ्यास करणे.

कोरोना महामारीची वास्तव परिस्थिती समजून घेणे.
कोरोना महामारीवरील उपाय योजनेचा अभ्यास करणे.

संशोधन पद्धती :-

तथ्य संकलणाच्या अनेक पद्धती आहेत. परंतु मानव्यविद्या शाखेशी संबंधित असणारी ऐतिहासिक व विश्लेषणात्मक संशोधन पद्धतीचा प्रस्तुत संशोधनासाठी उपयोग करण्यात आला आहे.

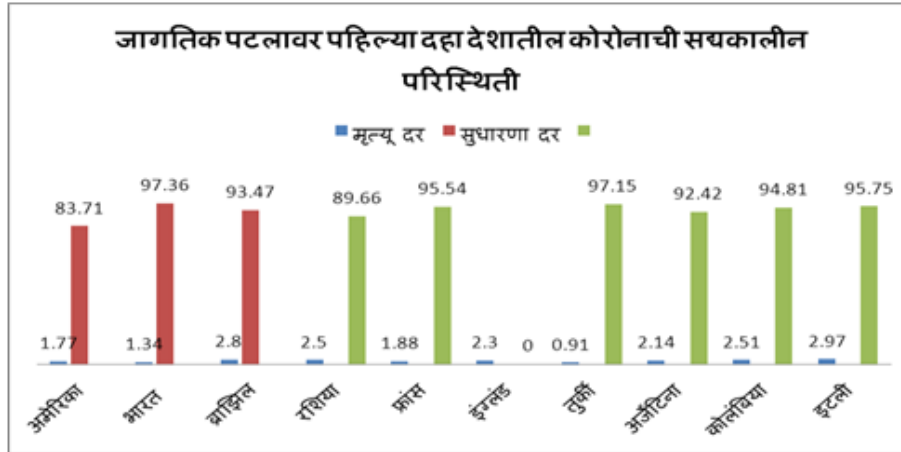
जागतिक कोरोना महामारीची सद्य कालीन परिस्थिती			
एकूण रूग्ण	मृत्यू रूग्ण	सुधारणा झालेले रूग्ण	उपचार घेत असलेले रूग्ण
19,28,04,978	41,,46,745	17,11,68,637	1,77,25,076



वरील तक्ता आणि स्तंभालेखावरून असे स्पष्ट होते की, जगातील ७.६ अब्ज लोकसंख्येपैकी 19,28,04,978 नागरिकांना कोरोनाची लागण झाली. लागण झालेले प्रमाण जगातील एकूण लोकसंख्येच्या ०.०१३ एवढे आहे. 41,,46,745 नागरिक मृत्यूमुखी पडले असून यांचे शेकडा प्रमाण 2.15 टक्के एवढे आहे. एकूण लागण झालेल्यापैकी 17,11,68,637 रूग्णामध्ये सुधारणा झाली असून त्यांचे शेकडा प्रमाण 88.77 टक्के आहे. तर सद्या जगातील विविध दवाखान्यात उपचार घेत असलेल्या रूग्णांची संख्या 1,77,25,076 एवढी असून त्यांचे शेकडा प्रमाण 9.19 टक्के आहे.

जागतिक पटलावर पहिल्या दहा देशातील कोरोनाची सद्यकालीन परिस्थिती						
अ.क्र.	देश	एकूण रूग्ण	मृत्यू रूग्ण	सुधारणा झालेले रूग्ण	मृत्यू दर	सुधारणा दर
	अमेरिका	35,213,554	626,172	29,478,173	1.77	83.71
	भारत	31,293,062	419,502	30,468,079	1.34	97.36
	ब्राझिल	19,524,002	547,235	18,250,711	2.80	93.47
	रशिया	6,078,522	152,296	5,450,004	2.50	89.66
	फ्रांस	5,933,510	111,565	5,669,033	1.88	95.54
	इंग्लंड	5,602,321	128,980	-	2.30	-
	तुर्की	5,563,903	50,761	5,405,339	0.91	97.15
	अर्जेन्टिना	4,812,351	103,074	4,447,953	2.14	92.42
	कोलंबिया	4,692,570	117,836	4,449,027	2.51	94.81
	इटली	4,302,383	127,920	4,119,607	2.97	95.75

वरील तक्त्या वरून असे स्पष्ट होते की, जगात सर्वात जास्त अमेरिकेमध्ये 626,172 एवढे लोक कोरोनामुळे मृत्यू पावले असून त्यांचे शेकडा प्रमाण 1.77 टक्के आहे. त्याखालोखाल अनुक्रमे ब्राझिलमध्ये 547,235 नागरिक मृत्यूमुखीपडले असून त्यांचे शेकडा प्रमाण 2.80 टक्के आहे. तर भारतामध्ये 419,502 नागरिक मृत्यूमुखी पडले असून त्यांचे शेकडा प्रमाण 1.34 टक्के आहे. त्यानंतर अनुक्रमे रशिया, इंग्लंड, इटली, कोलंबिया, फ्रांस, अर्जेन्टिना आणि तुर्की इत्यादी देशांमध्ये मोठ्या प्रमाणात नागरिक मृत्यूमुखी पडले आहेत.



वरील स्तंभालेखावरून असे स्पष्ट होते की, जगातील एकूण मृत्यू झालेल्या नागरिकांचे प्रमाण दर्शविले असून सर्वात जास्त मृत्यू दर सर्वात जास्त इटलीचा 2.97 टक्के आहे तर सर्वात कमी तुर्कीचा 0.91 टक्के आहे. रूग्ण सुधारणेचा सर्वात जास्त दर भारताचा 97.36 असून त्यानंतर अमेरिका 83.71 टक्के आहे.

15 मार्च 2021 नुसार भारतातील राज्यानुसार कोरोनाची स्थिती दर्शविणारा तक्ता						
अ.क.	राज्य	एकूण रूग्ण	मृत्यू झालेले रूग्ण	बरे झालेले रूग्ण	उपचाराधिन रूग्ण	मृत्यू दर
	उ्महाराष्ट्र	2028347	51109	1932294	43701	2.51
	कर्नाटक	939775	12220	921592	5944	1.30
	केरळ	932638	3761	859421	69216	0.44
	आंध्र प्रदेश	887900	7154	879504	1242	0.80
	तमिळ नाडू	838842	12363	821947	4532	1.47
	दिल्ली	635217	10856	623096	1265	1.70
	उत्तर प्रदेश	600470	8662	586505	5303	1.44
	पश्चिम बंगाल	570177	10179	554578	5420	1.78
	ओरिसा	335151	1959	332239	953	0.58
	राजस्थान	317587	2766	312873	1948	0.87
	छत्तिसगढ	305689	3706	297859	4124	1.21
	तैलगणा	294587	1601	290894	2092	0.54
	हरियाना	267989	3022	263886	1081	1.12
	गुजरात	261838	4388	254209	3241	1.67

	बिहार	260794	1503	258136	1154	0.57
	मध्य प्रदेश	255263	3812	248897	2554	1.49
	आसाम	217154	1083	214248	476	0.49
	पंजाब	173470	5616	165753	2101	3.23
	जम्मू कश्मिर	124550	1936	121905	709	1.55
	झारखंड	118734	1073	117148	513	0.90
	उत्तराखंड	96180	1648	92105	1081	1.71
	हिमाचल प्रदेश	57561	967	56200	378	1.67
	गोवा	53469	768	51977	724	1.43
	पांडेचेरी	33348	388	32918	19	1.16
	मणिपूर	29072	371	28562	139	1.27
	चंडीगढ़	20957	334	20447	176	1.59
	अरुणाचल प्रदेश	16828	56	16762	10	0.33
	मेघालय	13764	146	13556	62	1.06
	नागलैंड	12099	88	11810	54	0.72
	लडाख	9724	130	9526	68	1.33
	सिक्किम	6091	133	5779	84	2.18
	अंदमान निकोबार	4994	62	4932	-	1.24
	मिझोराम	4372	09	4333	30	0.20
	दादरा नगर हवेली	3380	02	3334	06	0.05
	लक्षद्वीप	99	00	56	43	00
	एकूण					1.43

वरील तक्त्यांचा अभ्यास केल्यानंतर एक बाब स्पष्ट होते की, भारतात सर्वात जास्त मृत्यूदर पंजाब राज्याचा शेकडा ३.२३ टक्के एवढा आहे. त्याखालोखाल अनुक्रमे महाराष्ट्र २.५१, सिक्किम, २.१८, उत्तराखंड १.७० दिल्ली १.७० यांचा क्रमांक येतो. तर सर्वात कमी मृत्यू दर अरुणाचल प्रदेश ०.३३ टक्के असून त्याखालोखाल केरळ ०.४४, आसाम ०.४९, तेलंगाणा ०.५४, आंध्र प्रदेश ०.८० आणि राजस्थान ०.८१ यांचा क्रम लागतो. कोरोना व्हायरसपासून (COVID-19) कशी काळजी घ्यायची स्वच्छ हात धुणे.

पाणी आणि साबणाने ४० सेकंद हात धुणे. जर एखादा अल्कोहोल असणारे हॅंड वॉश वापरत असेल तर २० सेकंद पुरेसे आहेत. जर त्याचा हात अस्वच्छ असेल किंवा मातीमुळे खराब झाला असेल तर साबण आणि पाण्याचाच वापर केला पाहिजे. हातरुमाल किंवा टिशू पेपरचा वापर करणे. खोकताना किंवा शिंकताना नाकावर आणि तोंडावर रुमाल ठेवणे. रुमाल नसेल तर टिशू पेपरचा वापर करावा, अन्यथा हाताच्या कोपरांना तोंड झाकावे. टिशू पेपरचा वापर केल्यावर तो तात्काळ बंद कचरापेटीत फेकून देणे. तोंड, नाक चेहरा, डोळे यांना स्पर्श करू नका.

कोरोना वायरस लोकांच्या थुंकीतून एखाद्या पृष्ठभागावर पडू शकतो. नकळत एखाद्याचा हात त्या पृष्ठभागाला लागू शकतो. त्यामुळे तोंड, नाक चेहरा, डोळे यांना स्पर्श करणे अनुचित. कमीत कमी तीन फुटाचे अंतर व मुखपट्टीचा (मास्कचा) वापर. समोरच्या व्यक्ती सोबत बोलत असताना त्याच्यापासून कमीत कमी तीन फुटाचे अंतर ठेवा. (या अंतराला सोशल डिस्टन्सिंग म्हणतात.) आंबट चवीच्या फळांचा आहारात समावेश. कोरोना व्हायरसच्या विरोधात लढा द्यायचा असेल तर आपली रोगप्रतिकारक क्षमता चांगली असणं अत्यंत गरजेचे आहे. यासाठी आंबट चवीच्या फळांचा आहारात समावेश करणे आवश्यक आहे. यामध्ये व्हिटॅमिन सीचे प्रमाण जास्त असते.

सारांश :-

एकंदरीत भारत आणि जगातील एकूण कोरोना महामारीच्या आकडेवारीचा तुलनात्मक अभ्यास करण्यात आला आहे. यावरून एक बाब स्पष्ट होते की, कोरोनावर कोणत्याही प्रकारची औषधी उपलब्ध नसतानासुद्धा जगातील या महामारीचा मृत्यू दर जेमतेम 2.14 च्या दरम्यान आहे. त्यामुळे ही महामारी फार गंभीर स्वरूपाची आहे, असे दिसून येत नाही. जगात कोरोनापेक्षा एड्स, डेंगू, कावीळ, कॅसर, रक्तदाब, मधुमेह, सुगर, बीपी या आजावर अनेक प्रकारची औषधी व उपचार उपलब्ध असतानासुद्धा दररोज लाखो लोक मृत्यूमुखी पडतात. याकडे कोणत्याही देशाचे शासन गांभीर्याने लक्ष देत नाही. कोरोनात जे काही लोक मृत्यूमुखी पडले आहेत यामध्ये रेमसेडिवरचे अतिरिक्त डोस, विविध आजार आणि भिती हेच एकमेव कारण असू शकते. कोरोना या महामारीची जागतिक पातळीवर पदतशीरपणे जाहिरात करून काही देशांनी यांचा योग्य तो फायदा करून घेतला आहे. दुसरी बाब म्हणजे या आजारांचे जास्तीत जास्त प्रमाण उच्चभ्रू लोकांमध्ये असल्यामुळेच त्यांनी लाकडाऊन ही संकल्पना शोधून काढली. कारण झोपडपट्टीमध्ये अनेक साथीचे रोग असून सुद्धा कोणत्याही देशाने या रोगाचे निदान करण्यासाठी लाकडाऊन केल्याचे उदा. इतिहासात सापडत नाहीत.

संदर्भ ग्रंथ :-

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- 3) www.wikipedia.org
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भारतीय डिजिटल लायब्ररी

नितेश गुलाब चामाटे

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प्रस्तावना :

कोरोनासारख्या कठीण काळात मुले घरातून शिक्षण घेत आहेत. सध्या मुलांच्या हातात मोबाईल, लॅपटॉप, आयपॅडसारखे महागडे गॅजेट उपलब्ध आहेत. मात्र, या महागड्या गॅजेटमध्ये पुस्तकांची ऑनलाइन गंगाजळी उपलब्ध नाही. सध्या ई-लर्निंगचा जमाना असून, देखील कोणत्याही टॉपच्या शाळा-महाविद्यालयांमधून विद्यार्थ्यांना ई-लायब्ररी घरबसल्या उपलब्ध झालेल्या नाहीत. म्हणूनच शिक्षक, विद्यार्थी, संशोधक, संगणक तज्ञ, वैज्ञानिक सांख्यिकीतज्ञ, अर्थशास्त्री यांना ग्रंथालयाचा वापर आवश्यक झाला आहे. इतिहासातील नोंदीनुसार अश्वयुगातील काळापासून आतापर्यंत संदेश, लेख इत्यादी साहित्य निर्मितीसाठी माती, दगड, भुजपत्र, ताम्रपत्र, कापड, कागद व आजकाल डिजिटल माध्यमांचा वापर करण्यात आला आहे व संदेशवहनासाठी पशु, पक्षी, मानव यांचा भू-मार्ग, जलमार्ग, आकाशमार्ग याद्वारे वापर करण्यात आला आहे. आज त्यासाठी इलेक्ट्रॉनिक्स व डिजिटल तंत्रज्ञान यांच्याद्वारे इंटरनेट या प्रकारच्या माध्यमांचा वापर करण्यात येत आहे. नवीन तंत्रज्ञानाने ग्रंथालयांसाठी अनेक संधी, अनेक आव्हाने निर्माण केली आहेत. त्याचबरोबर ग्रंथालयांची कार्यप्रणाली आणि परिणामकारकता यामध्ये अमुलाग्र बदल घडून आला आहे. व ग्रंथालयातील माहितीचे स्रोत, माहितीची साठवण, त्याचे वर्गीकरण ग्रंथालयीन सेवा या सर्वांच्या परिभाषाच बदलवून टाकल्या आहेत.

डिजिटल ग्रंथालय म्हणजेच इलेक्ट्रॉनिक लायब्ररी म्हणजेच अंकीय ग्रंथालय यामध्ये विविध प्रकारची माहिती, ज्ञान साहित्य हे डिजिटल प्रकारामध्ये म्हणजेच इलेक्ट्रॉनिक प्रकारामध्ये म्हणजेच (0,1) अशाप्रकारच्या Bits च्या सांकेतिक संगणकीय भाषेमध्ये संग्रहीत केले जाते. अशाप्रकारे साठविलेली माहिती इलेक्ट्रॉनिक डिस्प्लेद्वारे वाचनीय असते. म्हणून डिजिटल ग्रंथालयामध्ये संगणके व स्कॅनर, इलेक्ट्रॉनिक प्रिंटर, इंटरनेट व इतर आवश्यक आधुनिक उपकरणे व सॉफ्टवेअर यांची उपलब्धता असणे आवश्यक आहे.

संगणकाच्या वापराने इलेक्ट्रॉनिक माध्यमांचा प्रभाव ग्रंथालयांच्या विकासावर खूप परिणाम झाला. त्याचा परिपाक म्हणून इलेक्ट्रॉनिक ग्रंथालय (E-Library). क्षितीजाविना ग्रंथालय (Library Without Boundaries). आभासी ग्रंथालय (Virtual Library) या नवनवीन संकल्पना उदयास आल्या व त्यानंतर डिजिटल लायब्ररी या नवीन संकल्पनेचा उदय झाला. ग्रंथालयात ऐतिहासिक दृष्टीने महत्वपूर्ण माहिती असते त्यांचा उपयोग संशोधनासाठी केला जाऊ शकतो परंतु अशी साधने दुर्मिळ आणि अत्यल्प स्वरूपात असल्याने ती संशोधकांना ग्रंथालयाबाहेर देता येत नसल्याने वाचकांना त्यांचा उपयोग घेता येत नाही. अशा जुन्या पुस्तकांचा कागद ठिसूळ बनल्याने त्याची प्रतिलिपी सुद्धा काढता येत नाही तेव्हा या साधनांचा वापर करण्यासाठी ते वाचन साहित्य भविष्यात इतरांसाठी संग्रहित करण्यासाठी त्या साधनांचे डिजीटायझेशन करणे योग्य असते. डिजीटायझेशनमुळे भाषा, वेळ, श्रम व पैसा या स्वरूपातील अडथळे दूर झाले आहेत. डिजिटल लायब्ररी, ई-लायब्ररी आणि व्हर्चुअल लायब्ररी या तिन्ही संकल्पनेमध्ये फारसा फरक आढळत नाही. यामधील साम्य म्हणजे वाचन साहित्य हे इलेक्ट्रॉनिक स्वरूपात साठवून ठेवले जाते. डिजिटल ग्रंथालय हे एक विशेष ग्रंथालय होय. ज्यामध्ये डिजिटल स्वरूपातील संग्रहावर लक्ष केंद्रित केले जाते यामध्ये Text, Visual Material, Audio Material यांना इलेक्ट्रॉनिक स्वरूपात संग्रहित केली जाते.

डिजिटल ग्रंथालयाची परिभाषा :

डिजिटल ग्रंथालय ही संज्ञा ग्रंथालय क्षेत्रातील व्यावसायिकांनी केली नसून ती संगणक आणि माहिती तंत्रज्ञानातील व्यावसायिकांनी Digital Library हा शब्द रूढ केला. पारंपरिक ग्रंथालये करीत असलेली ग्रंथ आणि तत्सम माहिती संग्रहण, तालीकीकरण, माहितीचा शोध आणि वितरण इ. कार्य डिजिटल गणनप्रक्रिया, डिजिटल माहितीसंग्रहण संप्रेषण तंत्रज्ञान आज्ञावली (Software) यांच्या साहाय्याने केलेली यंत्रणा म्हणजे डिजिटल लायब्ररी होय.

Deegan, Marlyan & Simmon, Tanner : यांनी डिजिटल ग्रंथालयांची व्याख्या पुढीलप्रमाणे केली आहे. त्यांनी या व्याख्येची चार विभागात विभागणी केली असून ती पुढीलप्रमाणे -

डिजिटल ग्रंथालय हे शास्त्रीय पद्धतीने व्यवस्थापित केलेले डिजिटल साहित्य संग्रह होय, डिजिटल साहित्य संग्रह निर्माण करताना तांत्रिक तसेच शास्त्रीय तत्त्वे वापरली जातात. ग्रंथालयातील इतर साहित्याप्रमाणेच डिजिटल ग्रंथसंग्रह सुलभतेने वापरण्यासाठी योग्य ती तांत्रिक व्यवस्था सोय उपलब्ध असेल. डिजिटल ग्रंथालयातील साहित्य हे ग्रंथालयात सतत टिकेल याकडे लक्ष दिले जाईल त्यातील माहिती दर्जेदार सतत शिल्लक राहील यासाठी तांत्रिक व्यवस्था केलेली असते.

Ternce R. Smith :

यांचे मते, शास्त्रशुद्ध पद्धतीने तयार केलेले व डिजिटल तंत्रज्ञानाचा वापर करून त्यांची व्यवस्थित मांडणी करून ते वापरण्याच्या विविध पद्धतीने व विविध अंगानी वापरण्याजोग्या मार्गासहीत उपलब्ध डिजिटल साहित्यसंग्रह होय. भारताचे माजी राष्ट्रपति मा.ए.पी.जे. अब्दुल कलाम यांनी डिजिटल लायब्ररी ऑफ इंडिया या प्रोजेक्टचे उद्घाटन करताना अगदी मोजक्या शब्दात व अर्थपूर्ण शब्दात डिजिटल ग्रंथालयाची व्याख्या कथन केली ते म्हणतात.- Digital Library is where the past meets presents and creates Future. पारंपरिक ग्रंथालयातील सर्व प्रकारच्या सेवा संगणकाद्वारे आधुनिक तंत्रज्ञानाचा वापर करून कार्यक्षमतेने व प्रभावीपणे दिल्या जातात. ग्रंथ स्वरूपातील माहिती मल्टिमिडिया स्वरूपात रूपांतरित करून ज्ञानाच्या विशाल संग्रहातून माहिती कमी वेळात पुरविणारी प्रणाली म्हणजे डिजिटल ग्रंथालय होय.

डिजिटल ग्रंथालयाची उद्दिष्टे :

माहिती प्राप्त करणे, संग्रहीत करणे व वितरित करणे.

डिजिटायझेशन माहितीचे जतन करणे.

सीडी व डीव्हीडी, रोम स्वरूपात अधिकाधिक डेटाबेसचा संग्रह करणे.

ग्रंथालयास लागणारी जागेची समस्या दूर करणे.

वाचक व कर्मचारी यांचा वेळ वाचवणे.

परिणामकारक व प्रभावी स्वरूपातील माहिती देणे.

विविध इलेक्ट्रॉनिक साधनाद्वारे तसेच इंटरनेटद्वारे ऑनलाईन माहिती अशा विविध माहितीचे स्रोत वाचकांपर्यंत पोहचविणे. पारंपरिक ग्रंथालयातील अनावश्यक कार्य टाळून ती कमीत-कमी वेळात व उत्तम तऱ्हेने करणे.

डिजिटल ग्रंथालयाची वैशिष्ट्ये :

पारंपरिक ग्रंथालयापेक्षा डिजिटल ग्रंथालयातील सेवा अचूक, स्पष्ट व प्रभावी असतात. माहितीचा वेग जास्त असतो. डिजिटल ग्रंथालयात विविध प्रकारचे डिजिटल माहितीचे स्रोत उपलब्ध असतात, त्यात टेक्स्ट, इमेज आणि दृक्श्राव्य प्रकारच्या स्रोतांचा समावेश असतो. विविध प्रकारचे उपभोक्ते एकाच प्रकारच्या माहितीच्या स्रोताचा उपयोग एकाच वेळी करू शकतात. डिजिटल ग्रंथालयामुळे एकमेकांशी जोडलेल्या

माहितीच्या स्रोतांशी तत्परतेने व प्रभावीपणे संपर्क साधने सुलभ होते. डिजिटल स्वरूपातील माहितीचा वापर उपभोक्ता त्याच्या गरजेनुसार कधीही करू शकतो.

डिजिटल ग्रंथालयाद्वारे देण्यात येणाऱ्या सेवा :

शेयर्ड कॅटलॉगिंग सेवा : या सेवेमुळे विविध ग्रंथपालांना वेगवेगळ्या डिजिटल ग्रंथालयामध्ये उपलब्ध तालिकांची माहिती वापरणे शक्य होते. तालीकीकरण एकाच वेळी करून त्या विषयी माहिती नेटवर्कचा उपयोग घेउन डाउनलोड करता येऊ शकते.

संघ तालिका सेवा : या सेवेमुळे विविध ग्रंथालयातील ग्रंथाची, नियतकालिकांची संघतालिका तयार केली जाते. त्यामुळे विविध ग्रंथातील माहिती प्राप्त करता येते.

वेब ओपक : या सेवेचा उपयोग करून विविध ग्रंथालयांची यंत्ररूप तालिका इंटरनेटच्या वेबच्या माध्यमातून उपलब्ध केली जाऊ शकते.

आंतर ग्रंथालयीन देवघेव सेवा : या सेवेद्वारे एक ग्रंथालय दुसऱ्या ग्रंथालयांना नेटवर्कचा उपयोग करून आंतर ग्रंथालयीन देवघेवीच्या स्वरूपात ग्रंथ पुरविते.

रेफरल सेवा : ग्रंथालयामध्ये उपलब्ध नसलेले साहित्य वाचकांना कोठून प्राप्त करता येईल याचा संदर्भ दिला जातो. या सेवेमध्ये वाचकांना माहितीबद्दल प्रशिक्षित केले जाते.

प्रचलित जागरूकता सेवा : या सेवेमुळे ग्रंथालयीन नवीन ग्रंथाची, नियतकालिकांची पेंटर्सची, दृक्श्राव्य साधनांची यादी वाचकांच्या निदर्शनासाठी अंतर्गत वेबवर प्रदर्शित केली जाते.

माहितीचे निवडक प्रसारण सेवा : या सेवेमध्ये माहितीचे एकत्रीकरण करून त्याचे पृथक्करण करून वाचकापर्यंत पोहचविले जाते. शिवाय गरजू वाचकांना ई-मेलच्या माध्यमातून संपर्कही केला जाऊ शकतो.

बुलेटीन बोर्ड सेवा : या सेवेनुसार विविध प्रकारच्या बातम्यांची प्रसिद्धी केली जाते. या इलेक्ट्रॉनिक बुलेटिन बोर्ड मधील माहिती अद्ययावत केली जाते.

मटेरियलचे डिजिटलायझेशन ही एनालॉग माहिती डिजिटल स्वरूपात रूपांतरित करण्याची प्रक्रिया आहे. माहिती आणि दळणवळण तंत्रज्ञान आणि इंटरनेट सुविधांच्या उदयामुळे ग्रंथालयाचे पारंपारिक कार्य नाटकीयरित्या बदलले आहे. हे पुस्तके, ध्वनी रेकॉर्डिंग, चित्र किंवा व्हिडिओ यासारख्या माहितीचा तुकडा बिटमध्ये अनुवादित करण्याच्या प्रक्रियेस संदर्भित करते. बऱ्याच स्वरूपात आणि बऱ्याच स्रोतांकडून माहितीवर अमर्यादित प्रवेश मिळण्यासाठी ठिकाणे म्हणून आधुनिक लायब्ररीची वाढत्या प्रमाणात व्याख्या केली जात आहेत. ई-स्रोत खरेदी व देखरेखीचा कल आहे लायब्ररी वेगाने वाढवते. हे विद्यार्थी, संशोधक आणि शिक्षकांच्या सदस्यांच्या वर्तन शोधणाऱ्या माहितीतील बदलांमुळे आहे.

डिजिटल ग्रंथालयाची आवश्यकता :

भविष्य काळात पारंपरिक ग्रंथालयाचे डिजिटल ग्रंथालयात रूपांतर होण्यासाठी फार आवश्यकता आहे आणि त्याचा कल ही डिजीटायझेशन कडे जास्तीत जास्त राहणार आहे. पारंपरिक ग्रंथालयाचे डिजिटल ग्रंथालयात रूपांतर होण्यासाठी काही महत्वाची कारणे आहेत ती पुढीलप्रमाणे -

ग्रंथालय तालीकेची व्याप्ती :

ग्रंथालयात तालिकांचा उपयोग ग्रंथाचे स्थान शोधण्यासाठी केल्या जातो. त्यामध्ये ग्रंथाचे नाव, लेखकाचे व प्रकाशकाचे नाव या व्यतिरिक्त माहिती प्राप्त करता येत नाही. जर डिजीटायझेशन केले गेले तर त्यामध्ये ग्रंथाचे प्रत्यक्ष चित्र समोर येऊ शकते. त्याची अनुक्रमणिका पाहून वाचक त्याला आवश्यक असणारी माहिती मिळवू शकतो. त्याची प्रस्तावना, विषयसूची यांचा समावेश केला तर तालीकेची व्याप्ती निश्चित रूपात होईल.

पुस्तके, नियतकालिके यांचे जतन :

ग्रंथालयात छापील साहित्याचे जतन करण्यासाठी त्यांना स्थितीत ठेवण्यासाठी उपाययोजना करावी लागते. त्यामुळे त्यांचे आयुष्य वाढविता येते. परंतु त्याला काही मर्यादा असतात. कारण कागद जास्त दिवस टिकू शकणार नाही. अशा संग्रहामध्ये अमूल्य स्वरूपाचे दुर्मिळ ग्रंथ असतात. असे छापील साहित्य नष्ट होण्यापूर्वी त्याचे डिजिटल स्वरूपात रूपांतर करणे आवश्यक आहे. त्यामुळे ते कायमस्वरूपाने प्राप्त करता येते.

वेगवेगळ्या स्वरूपातील साहित्याचे जतन :

ग्रंथालयामध्ये मुद्रित, अमुद्रित वाचनसाहित्य असते. मुद्रित साहित्यामध्ये ग्रंथ, संदर्भ ग्रंथ नियतकालिके अनेक साहित्यप्रकार पेंटींग्स, वस्तुसंग्रहालयातील वस्तू, दफतरखान्यातील दस्तावेज, छायाचित्र ई. असतात तर अमुद्रित साहित्यामध्ये, ध्वनिमुद्रिका, चलचित्र व्हिडीओ चित्रफिती ई गोष्टी असतात. ही माहिती कायमस्वरूपी टिकविण्यासाठी डिजिटल स्वरूपात करणे काळाची गरज बनली आहे.

इंटरनेट माध्यमातील प्रसारित माहिती वापरण्यात तांत्रिक अडचणी :

विविध डिजिटल माहिती मिळविता येते. उदा. ई-बूक्स, ई-जर्नल्स, ई-डेटाबेसेस इ. वरील सर्व प्रकार व्यापारी तत्त्वावर उपलब्ध होत असल्यामुळे त्यांच्या अनेक अटी असतात. त्याचप्रमाणे त्यांची सततची उपलब्धता अनेक तांत्रिक गोष्टींवर अवलंबून असते. नेटवर्किंग सारख्या तंत्रज्ञानातील छोट्याशा बिघाडामुळे या माहितीचे प्रसारण बंद होऊ शकते. त्यामुळे संशोधनात अडथळे निर्माण होऊ शकतात. ही अडचण लक्षात घेता डिजिटल माध्यमातून उपलब्ध होणाऱ्या माहितीचे स्थानिक पातळीवर जतन करण्याची, संरक्षण, प्रसार उपलब्धतेची सोय या सर्व बाबी डिजिटल ग्रंथालय निर्मितीत अंतर्गत येतात.

स्थानिक पातळीवर साहित्य निर्मिती :

प्रत्येक ग्रंथालयाला आर्थिक दृष्टीने मर्यादा पडतात. त्यात पुस्तके नियतकालिके, ई-जर्नल्स अशा विविध गोष्टी खरेदी कराव्या लागतात. ई-जर्नल्स साठी खूप खर्च करावा लागतो. अशा स्थितीत शैक्षणिक संस्थेकडे असलेल्या बौद्धिक संपदेचा चांगल्या प्रकारे वापर केला जाऊ शकतो, ज्यामध्ये Class Notes, Computer Programs, problems & Solution, Video Lecture विविध अभ्यासक्रम अशा विविध स्थानिक पातळीवर माहितीचे संकलन करून विद्यार्थ्यांसाठी उपलब्ध करण्यासाठी डिजिटल ग्रंथालयासारख्या तंत्रज्ञानाचा उपयोग घेता येतो.


डिजिटल ग्रंथालयाचे फायदे :

1. डिजिटल ग्रंथालय तालिकेचे अवलोकन करणे, इलेक्ट्रॉनिक स्वरूपात ग्रंथ प्राप्त करणे किंवा उसनवारीने मिळविणे, आपल्या जवळ संग्रहीत करणे इत्यादी प्रक्रिया सहजगत्या शक्य होतात.
2. इंटरनेट व वेब ब्राउजरचा उपयोग करून डिजिटल ग्रंथालय केव्हाही व कोठेही उपलब्ध होऊ शकते.
3. डिजिटल स्वरूपातील प्रलेखाची एकच प्रत अनेक उपभोक्त्यांना वापरता येते.
4. प्रलेखातील महत्त्वाचा आशय संघटीत व सुरक्षित स्वरूपात उपलब्ध करता येतो.
5. डिजिटल डेटाबेसमधील संग्रहातील कोणताही शब्द, वाक्यप्रचार, म्हणी यांचा त्वरीत शोध घेता येतो.
6. डिजिटल ग्रंथालयामुळे जागेची बचत होते. मनुष्यबळ कमी लागते व त्यामुळे खर्चात बचत होते. दुर्मिळ ऐतिहासिक ग्रंथ, साहित्य उपलब्ध होऊ शकते. तसेच वेगवेगळ्या स्वरूपातील साहित्य जतन करून ठेवता येते. उदा. ग्रंथ, नियतकालिके, संदर्भग्रंथ, छापील ग्रंथेतर साहित्य या व्यतिरिक्त अमुद्रित ग्रंथेतर साहित्य उदा. ध्वनिमुद्रिका, चलन चित्र व्हिडीओ चित्रफिती इत्यादी.

निष्कर्ष :

आजच्या आधुनिक युगामध्ये पारंपरिक ग्रंथालयाचे डिजिटल ग्रंथालयात रूपांतरण करण्याची प्रक्रिया सुरू झाली असून ग्रंथालयातील ग्रंथ, दुर्मिळ वाचनसाहित्याचे तसेच इतर छापील साहित्याचे डिजिटल स्वरूपात परिवर्तन करून त्याचे जतन व संरक्षण करणे आवश्यक ठरत आहे. डिजिटल ग्रंथालयाद्वारे दुर्मिळ ग्रंथ, हस्तलिखित आणि असे ग्रंथ कि ज्याचे पाने ठिसूळ झाली आहेत. त्याचे डिजिटायझेशन केल्याने ती संशोधकांना प्राप्त करता येऊ शकते. सर्व ग्रंथालये व ग्रंथालयोन सेवा यांचे संगणकीकरण होत आहे. ग्रंथालयीन सेवा पुरविण्यासाठी नवनवीन अद्यावत सॉफ्टवेअर वापरली जात आहेत. व त्यांचा मोठ्या प्रमाणात वापर होण्यासाठी ग्रंथालयात सर्व सोयी व सुविधांची व्यवस्था असणे आवश्यक आहे. त्यांच्या मदतीनेच योग्य त्या प्रमाणतेसह सेवा देता येणे शक्य होणार नाही. याकरिता ग्रंथालयातील साहित्याचे संगणकीकरण करून त्या संबंधीची माहिती अद्यावत सहितावलीनुसार तयार केल्यास सर्व सोयी सुविधा पुरविता येणे शक्य होणार आहे. त्यासाठी कर्मचारी वर्ग प्रशिक्षित असावा. सर्व ग्रंथालय प्रशासन सुध्दा स्वतःला अद्यावत ठेवण्याचा प्रयत्न करीत आहे. अर्थातच याची पूर्ण यशस्वीतता ग्रंथालय सेवांच्या सेवांवर अवलंबून आहे व त्यासाठी ग्रंथालय सेवक स्वतःला संगणक साक्षर बनवून वाचकांना सेवा देत असतांना डिजिटायझेशनचा पुरेपूर उपयोग होत असल्याचे दिसून येत आहे. दुर्मिळ वाचनसाहित्याचे कायमस्वरूपी संग्रह करून ठेवता येते. डिजिटल ग्रंथालयामुळे माहिती तंत्रज्ञाने जगात एक प्रकारे क्रांती झाली आहे. आजची ग्रंथालये ही ग्लोबल नॉलेज रिसोर्स सेंटर्स होत आहे.

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शैक्षणिक ग्रंथालयात RFID ची भूमिका

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परिचय:

रेडिओ-फ्रीक्वेंसी आयडेंटिफिकेशन (आरएफआयडी) एक स्वयंचलित ओळख पद्धत आहे जो आरएफआयडी टॅग किंवा ट्रान्सपॉन्डर नावाच्या डिव्हाइसचा वापर करून डेटा संग्रहित आणि दूरस्थपणे पुनर्प्राप्त करण्यावर अवलंबून असते. आरएफआयडी म्हणजे रेडिओ-फ्रीक्वेंसी आयडेंटिफिकेशन. एक्रोनिम लहान इलेक्ट्रॉनिक उपकरणांना सूचित करते ज्यात एक छोटी चिप आणि एन्टीना असते. चिप सहसा 2000 बाइट डेटा किंवा त्यापेक्षा कमी डेटा ठेवण्यास सक्षम असते. आरएफआयडी डिव्हाइस क्रेडिट कार्ड किंवा एटीएम कार्डच्या मागील बाजूस बार कोड किंवा चुंबकीय पट्टी सारखाच उद्देश ठेवतो हे त्या ऑब्जेक्टसाठी एक अद्वितीय अभिज्ञापक प्रदान करते. आणि माहिती मिळविण्यासाठी ज्याप्रमाणे बार कोड किंवा चुंबकीय स्ट्रीपस्ट स्कॅन केले जातात, तसेच ओळखणारी माहिती पुनर्प्राप्त करण्यासाठी आरएफआयडी डिव्हाइस स्कॅन करणे आवश्यक आहे. सामान्य शब्दांमध्ये रेडिओ फ्रीक्वेंसी आयडेंटिफिकेशन (आरएफआयडी) म्हणजे रेडिओ फ्रीक्वेंसी ट्रान्समिशनचा वापर करून एखादी व्यक्ती किंवा ऑब्जेक्ट ओळखण्याचे साधन म्हणजे सामान्यतः 125 केएचझेड (लो फ्रीक्वेंसी), 13.56 मेगाहर्ट्ज (उच्च वारंवारता) किंवा 800-900 मेगाहर्ट्ज (अल्ट्रा हाय फ्रीक्वेंसी) 20 वर्षांहून अधिक काळ आरएफआयडी अस्तित्वात आहे आणि टोल वसुली, प्रवेश, कंट्रोल, तिकीट, सुरक्षाविषयक चिंता वाढवणे, पुरवठा साखळी ऑटोमेशन आणि औद्योगिक यंत्रणेत खर्च नियंत्रणावर निरंतर भर यासारख्या अनुप्रयोगांमध्ये याचा मोठ्या प्रमाणात वापर केला जात आहे. आरएफआयडी ग्रंथालयात वापरली जाते विविध ग्रंथालयांनी हे तंत्रज्ञान राबविले आहे.

कीवर्ड: - आरएफआयडी, आरएफआयडी अनुप्रयोग, शैक्षणिक ग्रंथालय.

1. ग्रंथालयांमध्ये RFID का?

आरएफआयडी (रेडिओ फ्रीक्वेंसी आयडेंटिफिकेशन) खाली दिल्याप्रमाणे बऱ्याच ग्रंथालयांना सामोरे जाणारे अनेक की-प्रभावी उपाय देण्याचे मानले जाते.

वार्षिक साठा घेणे : - या तंत्रज्ञानाच्या माध्यमातून कोणत्याही स्तरावर घेत असलेला साठा अत्यंत सोपा होतो आणि कोणत्याही प्रकारच्या ग्रंथालयीन सेवांचा त्रास न घेता अल्पावधीत करता येतो.

पुस्तके अचूक क्षेत्रात ठेवली आहेत याची जलद तपासणी : - यादी वाचकाच्या माध्यमातून हे सहज व सोयीस्कर पद्धतीने तपासले जाऊ शकते.

स्कॅनर वापरून विशिष्ट वस्तू शोधणे : - विशिष्ट दस्तऐवज सोडल्यास चुकीच्या ठिकाणी ठेवल्यास इव्हेंटरी रीडर शोधू शकतो.

वस्तूची स्वतःची तपासणी : - ग्रंथालय वाचक स्वतः ग्रंथालयात स्टाफच्या हस्तक्षेपाशिवाय इच्छित कागदपत्रे घेऊ शकतात.

वस्तूची स्व परत परतावा : - ग्रंथालय कर्मचाऱ्यांना हस्तक्षेप न करता कागदपत्रे ग्रंथालयात वाचकांकडूनच परत करता येतील.

सुरक्षा : - हे तंत्रज्ञान लायब्ररीतल्या सुरक्षिततेच्या कारणास्तव सर्वात उपयुक्त आहे.

लायब्ररी सदस्यता कार्ड: - टॅगिंगद्वारे तयार केलेली लायब्ररी सदस्यता कार्ड बहुउद्देशीय कार्यासाठी वापरली जाऊ शकतात.

2. RFID चे घटक आणि ग्रंथालयातील RFID ची भूमिका: आरएफआयडी मध्ये पाच घटक असतात

2.1 स्मार्ट कार्ड

संपर्क कमी स्मार्ट कार्ड या शब्दाचा अर्थ अशा ओळखपत्रांचा संदर्भ आहे ज्यांना वाचण्यासाठी वाचकांशी संपर्क साधण्याची आवश्यकता नाही. ही क्षमता कार्डमध्ये एक लहान आरएफआयडी टॅग वापरून अंमलात आणली गेली आहे वेगवान तपासणी किंवा प्रमाणीकरण प्रक्रिया इत्यादीद्वारे वापरकर्त्यास अधिक सोयीची सुविधा प्रदान करण्याचा हेतू आहे.

ग्रंथालयात भूमिका:

अशा प्रकारच्या कार्डे वापरून चेक-इन आणि चेक-आउट कार्ये करणे लायब्ररीच्या वाचकांसाठी सोपे अचूक आणि सोयीस्कर होते.

i) **आरएफआयडी सक्षम सामग्रीच्या अभिसरण साठी स्मार्ट कार्ड :** - तपासणीसाठी आणि कागदपत्रांची तपासणी करण्यासाठी लायब्ररी वाचकांसाठी सोयीस्कर.

ii) **केंद्रीकृत डेटाबेस :** - ही सुविधा वापरण्यासाठी ग्रंथालयाच्या वाचकांचा केंद्रीकृत डेटाबेस तयार करणे आवश्यक आहे.

iii) **त्यांच्या स्मार्ट कार्डद्वारे वापरकर्त्याची ओळख :** - या कार्डांद्वारे लायब्ररी वाचकांना ओळखले जाऊ शकते.

iv) **चोरी शोधणे :** - अशा प्रकारच्या कार्डे वापरून चोरी शोधणे शक्य आहे.

v) **आकडेवारी आणि अहवाल :** - अशा प्रकारच्या तंत्रज्ञानाची अंमलबजावणी करून विविध प्रकारचे आकडेवारी आणि अहवाल प्राप्त केला जाऊ शकतो.

vi) **वेब आधारित मॉड्यूल :** - वेब आधारित मॉड्यूलचे विविध प्रकार मिळू शकतात.

2.2 RFID टॅग:

आरएफआयडी टॅग विशेषतः पुस्तके, सीडी, डीव्हीडी आणि टेपसह लायब्ररी माध्यमांमध्ये चिकटविण्यासाठी डिझाइन केले गेले आहेत. आरएफआयडी टॅगचे तीन विभाग आहेत 1) आयटम ओळखीसाठी लॉक करण्यायोग्य विभाग 2) ग्रंथालयाच्या विशिष्ट वापरासाठी पुनर्लेखन योग्य विभाग आणि 3) आयटम अँटीथेफ्ट म्हणजेच सक्रिय आणि निष्क्रिय केले जाऊ शकतात यासाठी सुरक्षितता कार्यासाठी चिपमध्ये मल्टी रीड फंक्शन्स देखील असतात ज्याचा अर्थ असा आहे की एकाच वेळी अनेक टॅग वाचले जाऊ शकतात.

2.3 लायब्ररी प्रोग्रामिंग स्टेशन:

याचा उपयोग प्रोग्राम केलेल्या नवीन कागदपत्रांकरिता केला जातो. प्रोग्रामिंग स्टेशन देखील विद्यमान बारकोड्सवरून आरएफआयडी टॅगमध्ये संकलनाचे कार्यक्षम रूपांतर करण्यास परवानगी देण्यासाठी डिझाइन केले आहे. हे टॅगच्या मेमरीमध्ये बारकोड डेटा प्रोग्राम करण्यासाठी आणि त्याच वेळी त्याचे अँटीथेफ्ट फंक्शन सक्रिय करण्यास सक्षम करते. आकारात लहान आणि एगोनोमिक, प्रोग्रामिंग स्टेशन कोणत्याही ग्रंथालयात डेस्कटॉप कॉन्फिगरेशनमध्ये वापरले जाऊ शकते. प्रोग्रामिंग स्टेशन कोणत्याही संगणकास सोपे कनेक्शन देते. प्रोग्रामिंग स्टेशन कोणत्याही बारकोड स्कॅनरच्या समांतर वापरले जाऊ शकते.

2.4 ग्रंथालय परिसंचरण स्टेशन:

हे ग्रंथालय रीडर एल-एल 100 चे बनलेले आहे आणि एलआय अँटेना म्हणजेच प्रक्रिया केलेल्या आयटमची संख्या वाढविण्यासाठी अतिरिक्त एन्टीना जोडली जाऊ शकते. टॅग वापरून परिसंचरण स्टेशन आयटम ओळखण्यास सक्षम करते आणि एकाचवेळी टॅग अँटीथेफ्ट फंक्शन सक्रिय / निष्क्रिय करते. परिसंचरण स्टेशन कोठेही ठेवले जाऊ शकते. परिसंचरण स्टेशन हे एक स्टाफ स्टेशन आहे जे एकाच ठिकाणी ग्रंथालयाच्या कर्मचाऱ्यांना एकाच वेळी अनेक वेळा तपासणी आणि तपासणी करण्यास सक्षम करते. एन्टीथेफ्ट फंक्शन सक्रिय/ निष्क्रिय करताना आयटम ओळखणे एकाच ऑपरेशनमध्ये शक्य आहे.

2.5 ग्रंथालय यादी वाचक:

या हँडहेल्ड आरएफआयडी रीडरमध्ये लांब फिकट वजनाचे हँडल असते ज्यामध्ये लवचिक शेवटचा भाग अर्थात आरएफआयडी एन्टीना असतो ज्यामुळे सर्व शेल्फमध्ये आयटम ओळखण्यास सोयीस्करपणे फिरता येते. आयटमच्या बाजूने पास झाल्यावर वाचक इष्टतम वाचन कार्यक्षमता ऑफर करते. कागदपत्रे शेल्फच्या काठावर त्यांची जाडी आणि निकटतेकडे दुर्लक्ष करून ओळखली जातात. इन्व्हेंटरी रीडर त्याच्या आकारात आणि त्याच्या कार्यक्षमतेमध्ये वैशिष्ट्यपूर्ण आहे आणि ग्रंथालयाच्या कर्मचाऱ्यांना शेल्फ चे अव रुप सहजपणे ओळखण्यास सक्षम करते.

2.6 ग्रंथालय सुरक्षा गेट:

सुरक्षा गेटचा वापर आरएफआयडी आणि अँटीथेफ्ट फंक्शन्सना एकाच डिवाइसमध्ये विलीन करण्यासाठी नवीनतम डिझाइन नवकल्पनांचा फायदा सुरक्षा यंत्रणा घेतो. सुरक्षा गेट दोन पादचारी बनलेला आहे. वाढीव शोध पृष्ठभागासाठी अतिरिक्त पादचारी जोडले जाऊ शकतात. प्रत्येक पॅडस्टल स्टँडअलोन आणि प्लग आणि मुख्य सामर्थ्यासाठी प्ले आहे. गेट्स आणि नियंत्रक सीई आणि एफसीसी अनुपालन आहेत. नवीन जनरेशन पेडेस्टल्स सर्वात कार्यक्षम यांत्रिक डिझाइनवर आधारित आहेत. स्टँडअलोन सोल्यूशन असल्याने सुरक्षा दरवाजांना ग्रंथालयाच्या डेटाबेसशी दुवा साधण्याची आवश्यकता नाही आणि आयएलएस नेटवर्क खाली किंवा देखभाल अंतर्गत असतानाही ते ऑपरेट करू शकतात.

3. RFID कसे कार्य करते:

आरएफआयडी अनुकूल सर्व कागदपत्रांवर आरएफआयडी टॅग चिकटवले जातात. दस्तऐवजांचे दुसरे चरण प्रोग्रामिंग किंवा टॅग करणे ज्या कागदपत्रांवर आरएफआयडी टॅग चिकटवले गेले आहेत ते टॅगच्या प्रमाणीकरणासाठी वाचकांवर ठेवले आहेत प्रोग्रामिंग दस्तऐवजाच्या एक्सेशन नंबरचे खाद्य देऊन केले जाते प्रवेशद्वाराच्या मास्टरकडून संग्रहित डेटा परत मिळविला जातो डेटाबेस आणि टॅगचे प्रमाणीकरण संबंधित कागदपत्रातील सर्व डेटाचे सत्यापन करून केले जाते. सर्कुलेशन स्टेशनमध्ये चेक-इन आणि चेक-आउट कार्ये केली जातात, तपासणीच्या वेळी वाचक आरएफआयडी कार्ड आणि दिले जाणारे कागदपत्रांचा डेटा वाचतो आणि त्याचबरोबर पेस्ट केलेल्या आरएफआयडी टॅगचे डि-एक्टिव्हिटीवेशन पूर्ण करतो. सुरक्षेच्या कारणास्तव कागदपत्रे. अशाप्रकारे जेव्हा ग्रंथालयाचे वाचक सिक्युरिटी गेटमधून जात आहेत तेव्हा गेट निष्क्रिय आरएफआयडी टॅगबद्दल गजर देत नाही. जर कोणी कागदपत्रांवर पेस्ट केलेले आरएफआयडी टॅग निष्क्रिय केल्याशिवाय सुरक्षा गेटवरून गेला तर सुरक्षा गेट त्वरित गजर करते. आयटमच्या चेक-इनच्या वेळी वाचक आरएफआयडी कार्डाची माहिती वाचतात आणि कागदपत्रांवर पेस्ट केलेले आरएफआयडी टॅग एकाच वेळी सक्रिय करतात.

4. RFID चे फायदे

4.1 जलद यादी तपासणी:

जलद यादी तपासणी शेल्फ व्यवस्थापन आणि साहित्याचा शोध पोर्टेबल हाताने वाचकांद्वारे करता येतो. याचा वापर स्टॉक व्हेरीफिकेशन आणि चुकीच्या ठिकाणी ठेवलेल्या वस्तू शोधण्यासाठी देखील केला जाऊ शकतो.

4.2 वापरकर्त्यांची माहिती:

वापरकर्त्यांची माहिती स्मार्ट कार्डमध्ये संग्रहित केलेली आहे ज्यामध्ये वापरकर्ता आयडी, जारी केलेल्या पुस्तकांचा तपशील आणि काही असल्यास दंड आहे. समान स्मार्ट कार्डचा उपयोग ऑटो दंड डेबिट / संग्रहणासाठी देखील केला जाऊ शकतो सांख्यिकी आणि अहवाल प्रणाली विविध अहवाल प्रदान करते जे ग्रंथालय आणि वापरकर्त्यांसाठी उपयुक्त आहेत.

4.3 वेब इंटरफेस:

वेब इंटरफेस वापरकर्त्यांना इंटरनेट किंवा इंटरनेटद्वारे सिस्टममध्ये प्रवेश करण्यास अनुमती देते. पुस्तकांचा ऑनलाईन शोध :- हे कुठल्याही ठिकाणी कोणत्याही अंतर आणि स्थान विचारात न घेता करता येते.

वापरकर्ता लॉगिन :- एकल नोंदणीकृत वापरकर्ता ऑनलाईन ओपॅकचा उपयोग करू शकतो.

पुस्तकांचे ऑनलाईन आरक्षण :- अशा प्रकारच्या तंत्रज्ञानाचा वापर करून कागदपत्रांचे ऑनलाईन आरक्षण शक्य आहे.

ऑनलाईन वापरकर्ता आकडेवारी :- ऑनलाईन वापरकर्त्यांची आकडेवारी ओळखली जाऊ शकते.

4.4 ग्रंथालय व्यवस्थापनासाठी

भविष्यातील विस्तारासाठी हे खर्च प्रभावी आणि स्केलेबल आहे. ग्रंथालयांमध्ये आरएफआयडीचा वापर केल्याने लायब्ररीचे कर्मचारी आणि ग्रंथालय वाचकांचे ओव्हरहेड कमी होते आणि चेक-इन चेक-आऊट आणि यादी तपासणीमध्ये घालवला जातो.

4. ग्रंथालयातील निम्न मनुष्यबळ उपयोग

आरएफआयडीचा वापर चेक-इन, चेक-आऊट शेल्फ मॅनेजमेंट आणि ग्रंथालयाच्या इन्व्हेंटरी मॅनेजमेंटमध्ये मॅन पॉवर वापर कमी करते. सेल्फ सर्व्हिस किर्यांस्क आणि बुक ड्रॉपचा वापर केल्यामुळे ग्रंथालयाच्या वाचकांचे त्यांचे कार्य कमी होते कारण ते इतर कार्य करण्यास मोकळे असतात.

5. RFID चे सिस्टमचे तोटे

1. आरएफआयडी तंत्रज्ञानाचा मोठा तोटा म्हणजे त्याची किंमत. आवश्यक हार्डवेअर महाग आहेत जे लहान ग्रंथालयांसाठी अंमलात आणणे अवघड आहे.
2. तडजोड करण्याची असुरक्षितता आरएफआयडी प्रणालीशी तडजोड करणे देखील शक्य आहे ज्यामध्ये दोन वस्तू एकमेकांविरुद्ध ठेवल्या पाहिजेत जेणेकरून एक टॅग दुसऱ्या टॅगला आच्छादित करेल. ते सिग्नल रद्द करू शकतात. यासाठी तंत्रज्ञानाचे ज्ञान आणि काळजीपूर्वक संरेखन आवश्यक आहे.
3. उघडकीस असलेले टॅग काढणे कागदपत्रांवर चिकटविलेले टॅग सहजपणे काढता येतात ज्यामुळे ग्रंथालयाच्या कर्मचाऱ्यांना त्रास होतो.
4. सेन्सरच्या समस्यांमधून बाहेर पडा परिसंचरण शुल्क आणि डिस्चार्ज आणि इन्व्हेंटरीसाठी वापरल्या जाणाऱ्या शॉर्ट-रेंजचे वाचक 100 टक्के वेळ टॅग वाचताना दिसत आहेत परंतु एक्झिट सेन्सरची कार्यक्षमता अधिक समस्याप्रधान आहे. त्यांनी अन्य वाचकांच्या दुप्पट अंतरावर टॅग वाचले पाहिजेत.
5. संरक्षकांच्या गोपनीयतेवर आक्रमण झालेले काही लोकांमध्ये अशी समज आहे की आरएफआयडी ग्रंथालयाच्या वाचकांच्या गोपनीयतेसाठी धोका आहे. ती दोन गैरसमजांवर आधारित आहे (१) टॅगमध्ये संरक्षक माहिती आहे आणि (२) सामग्री कोणीतरी घरी नेल्यानंतर किंवा त्या वाचल्या जाऊ शकतात.

निष्कर्ष:-

शैक्षणिक ग्रंथालयांमध्ये आरएफआयडी तंत्रज्ञानाच्या भूमिकेबद्दल या पेपरमध्ये वर्णन केले आहे आणि शैक्षणिक ग्रंथालयांमध्ये अशा प्रकारच्या तंत्रज्ञानाची अंमलबजावणी करून मनुष्यबळ, ऊर्जा, वेळ, डुप्लिकेशन आणि प्रयत्नांचे जतन केले जाऊ शकते आणि या जतन केलेल्या संसाधनांचा परस्पर उपयोग ग्रंथालये सुधारण्यासाठी उपयोग केला जाऊ शकतो. हा लेख ग्रंथालये चेक-इन आणि चेक-आउट, सुरक्षा तपासणी, शेल्फ मॅनेजमेंट इत्यादी विविध प्रकारच्या कार्यांमध्ये आरएफआयडीच्या भूमिकेवर भर देतो.

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