IAS PARLIAMENT
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A Shankar IAS Academy Initiative

GIST OF YOJANA

JANUARY 2019

I N D E X

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1. SCIENTIFIC INNOVATIONS IN THE SERVICE OF SOCIETY

What is the evolution of technological developments?

- The **first industrial revolution – 1765** : Following a slow period of proto-industrialization, this first revolution spans from the end of the 18th century to the beginning of the 19th century.

- It witnessed the emergence of mechanization, a process that replaced agriculture with industry as the foundations of the economic structure of society.

- The **second industrial revolution – 1870** : Nearly a century later at the end of the 19th century, new technological advancements initiated the emergence of a new source of energy: electricity, gas and oil.

- As a result, the development of the combustion engine set out to use these new resources to their full potential.

- The **third industrial revolution – 1969** : Nearly a century later, in the second half of the 20th century, a third industrial revolution appeared with the emergence of a new type of energy whose potential surpassed its predecessors: nuclear energy.

- This revolution witnessed the rise of electronics—with the transistor and microprocessor—but also the rise of telecommunications and computers.

- The **fourth industrial revolution** : Its genesis is situated at the dawn of the third millennium with the emergence of the Internet.

- This is the first industrial revolution rooted in a new technological phenomenon—digitalization—rather than in the emergence of a new type of energy.

- This digitalization enables us to build a new virtual world from which we can steer the physical world.

What is Internet of Things?

- At the heart of various technological innovations over the years, lies the Internet.

- This is the single most technology which has helped to change the face of the world within a few years.

- This one innovation has actually led to various other innovations.

- The idea of using internet differently and by using diverse effects (normally "thing" or "object" are viewed as any possible items in the real world that could join the communication chain) is expected to upswing to the model of Internet of Things (IoT).

- Generally, IoT is considered to be simply a means of connecting different sensors to a network.

- It is important to look at IoT over a broader canvass of numerous IT related and futuristic IT technologies.

- Ambient Intelligence and Cognitive Technologies are anticipated to have a major impact on the future of IT.

- Technologies like Fog computing, Distributed computing, Cloud computing, Big Data and Block-chain are expected to impact the future of IoT.

What is Artificial Intelligence

- Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems.

- These processes include learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction.

- There are various viewpoints about the exact applicability of AI.

- No final verdict has yet been announced whether AI is a saviour or destroyer.

- Issues of ethics do get raised in regard to the applicability of Al.

- However, globally it has been observed that Al could bring in various advantages in very many fields associated with human growth and progress.

- Robotics is one area, which is associated both directly and indirectly with the AI and has already made many inroads in various human activities over the years.

- Broadly, it could be argued that AI and Internet 2.0 could decide on the future of the world.

2. CAPITALIZING ON TECHNOLOGY FOR FARMERS WELFARE

Why the intervention is needed in Agriculture?

- Farming is both a way of life and means to livelihood for nearly 60 percent of our population majority of whom are women and youth.

- Compounding the difficulties of today, farmers are facing serious problems from climate change.

- New innovations are need of the hour to bring the farmers from rural distress and poverty net.

What are the recommendations for sustainable agriculture?

- Distribute ceiling-surplus and waste lands;

- Prevent diversion of prime agricultural land and forest to corporate sector for non-agricultural purposes.

- Ensure grazing rights and seasonal access to forests to tribals and pastoralists, and access to common property resources.

- Establish a National Land Use Advisory Service, which would have the capacity to link land use decisions with ecological meteorological and marketing factors on a location and season specific basis.

- Set up a mechanism to regulate the sale of agricultural land, based on quantum of land, nature of proposed use and category of buyer.

- A comprehensive set of reforms to enable farmers to have sustained and equitable access to water.

- Increase water supply through rainwater harvesting and recharge of the aquifer should become mandatory.

- "Million Wells Recharge" programme, specifically targeted at private wells should be launched.

- Substantial increase in public investment in agriculture related infrastructure particularly in irrigation, drainage, land development, water conservation, research development and road connectivity etc.

- Promotion of conservation farming, which will help farm families to conserve and improve soil health, water quantity and quality and biodiversity.

- Promote sustainable livelihoods for the poor by improving (i) Financial services (ii) Infrastructure (iii) Investments in human development, agriculture and business development services (including productivity enhancement, local value addition, and alternate market linkages) and (iv) Institutional development services (forming and strengthening producers' organisations such as self-help groups and water user associations).

- Develop an integrated credit-cum-crop-livestock-human health insurance package.

- Expand crop insurance cover to cover the entire country and all crops, with reduced premiums and create a Rural Insurance Development Fund to take up

- development work for spreading rural insurance.

- Expand the outreach of the formal credit system to reach the really poor and needy.

- Reduce rate of interest for crop loans to 4 per cent simple, with government support.

- Moratorium on debt recovery, including loans from non-institutional sources, and waiver of interest on loans in distress hotspots and during calamities, till capability is restored.

- Help small and marginal farmers to improve the productivity, quality and profitability of farm enterprises and organize a Rural Non-Farm Livelihood Initiative.

- Promotion of commodity-based farmers' organisations such as Small Cotton Farmers' Estates to combine decentralised production with centralised services such as post-harvest management, value addition and marketing, for leveraging institutional support and facilitating direct farmer-consumer linkage.

- Preserving traditional rights of access to biodiversity, which include access to non-timber forest products including medicinal plants, gums and resins, oil yielding plants and beneficial micro-organisms;

- Conserving, enhancing and improving crops and farm animals as well as fish stocks through breeding;

- Encouraging community-based breed conservation (i.e. conservation through use);

- Allowing export of indigenous breeds and import of suitable breeds to increase productivity of nondescript animals.

3. CONTRIBUTING TO KNOWLEDGE BASED REVOLUTION

What is Atal innovation Mission?

- The Atal Innovation Mission (AIM) is a flagship initiative set up by the NITI Aayog to promote innovation and entrepreneurship across the length and breadth of the country, based on a detailed study and deliberations on innovation and entrepreneurial needs of India in the years ahead.

- AIM is also envisaged as an umbrella innovation organization that would play an instrumental role in alignment of innovation policies between central, state and sectoral innovation schemes incentivizing the establishment and promotion of an ecosystem of innovation and entrepreneurship at various levels - higher secondary schools, science, engineering and higher academic institutions, and SME/MSME industry, corporate and NGO levels.

- Long term goals of AIM include establishment and promotion of Small Business Innovation Research and Development at a national scale (AIM SBIR) for the SME/MSME/startups, and in rejuvenating Science and Technology innovations in major research institutions of the country like CSIR

(Council of Scientific Industrial Research), Agri Research (ICAR) and Medical Research (ICMR) aligned to national socio-economic needs.

How it is being implemented?

- **Atal Tinkering Labs** : At the school level, AIM is setting up state of the art Atal Tinkering Labs (ATL) in schools across all districts across the country.

- These ATLs are dedicated innovation workspaces of 1200-1500 square feet where do-it-yourself (DIY) kits on latest technologies like 3D Printers, Robotics, Internet of Things (IOT), Miniaturized electronics are installed using a grant of Rs 20 Lakhs from the government so that students from Grade VI to Grade XII can tinker with these technologies and learn to create innovative solutions using these technologies.

- This will enable create a problem solving, innovative mind set within millions of students across the country.

- To date, 2441 schools have already been selected for ATL Grants and by the end of 2018 over 5000 schools are expected to be operational with Atal Tinkering Labs, covering all the districts of the country.

- **Atal Incubators :** At the university, NGO, SME and Corporate industry levels, AIM is setting up world-class Atal Incubators (AICs) that would trigger and enable successful growth of sustainable startups in every sector /state of the country, thereby promoting entrepreneurs and job creators in the country addressing both commercial and social entrepreneurship

opportunities in India and applicable globally.

- AIM is also providing scale up support to existing incubators for scaling up their operations.

- AIM is providing a grant of upto Rs 10 crores to successful applicants for setting up greenfield incubators or scaling up existing ones.

- The idea is that every one of the 110 named smart cities and the top 5-10 educational / industrial institutions of every state should aspire to have a world class incubator that will provide the youth / startup communities in the universities / industries opportunity to create new start ups .

- **Atal New India Challenges and Atal Grand Challenges**: To promote specific product innovations with social / economic impact, AIM will be launching Atal New India Challenges / Atal Grand Challenges in specific areas and sectors of national importance - such as Renewable Energies, Energy Storage, Climate-smart precision agriculture, Universal drinking water, Swaach Bharat, Transportation, Education, Healthcare using Robotic, IOT technologies, Artificial Intelligence, Block-chain, Augmented and Virtual reality, Battery Technologies etc.

- The successful applicants will get a grant of upto Rs 1 crore for Atal New India Challenges and larger grants of upto Rs 30 crores for Atal Grand Challenges.

- AIM is also partnering with corporates and other institutions to launch such challenges to stimulate new product and service development in various sectors.

- For example the recently held AIM-Yes Bank Transformation series 2017 Smart Agri Nation challenge had 27000 students from B Schools of India participating in the same with high quality presentations on the same.

- **Industry, Academia, Government, Global Collaborations**: To enable a vibrant ecosystem of innovation, AIM is promoting active collaboration between Government, Academia, Industry, Individuals and Societal focused NGOs.

- AIM has set up one of the largest Mentoring networks in India called Mentor India from the professional and industry community who can help mentor students at Atal Tinkering Labs and AIC Incubators / startups.

- Over 5000+ mentors have already registered and every operational ATL has already been allocated a mentor. Qualified mentors will be assigned to various AICs.

- A number of industry leaders and corporate organizations have volunteered to adopt ATLs/AICs in their vicinities to ensure close mentoring and success of these initiatives.

- AIM is also actively working on establishing collaborations with innovation systems and entities in other countries in APAC, Europe, UK, USA, Africa and Latin American Countries.

4. INNOVATION ORIENTED INITIATIVES IN HIGHER EDUCATION

What are the GOI initiatives on promotion of innovation?

- **Global Initiative of Academic Networks (GIAN)** : Govt. of India approved a new program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

- In order to garner the best international experience into our systems of education, enable interaction of students and faculty with the best academic and industry experts from all over the world and also share their experiences and expertise to motivate people to work on Indian problems, there is a need for a Scheme of International Summer and Winter Term.

- So it was decided that a system of Guest Lectures by internationally and nationally renowned experts would be evolved along with a comprehensive Faculty Development Programme not only for new IITs, IIMs, IISERs but also other institutions in the country.

- **Scheme for Promotion of Academic and Research Collaboration (SPARC)**: The Scheme aims at improving the research ecosystem of India's Higher Educational Institutions by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world from 28 selected nations to jointly solve problems of national and/or international relevance.

- The expected outcomes include tangible results in terms of large quantity of high quality research publications, solution to key national and international problems, development of niche courses, high quality text books and research monographs, imbibing of best practices from top international academicians and researchers, strong bilateral cooperation, and improved world reputation and ranking of Indian Institutions.

- **Impacting Research Innovation and Technology (IMPRINT) India**: IMPRINT INDIA is a Pan-IIT and IISc joint initiative to develop a roadmap for research to solve major engineering and technology challenges in ten technology domains relevant to India.

- IMPRINT INDIA aims at direct research in the premier institutions into areas of social relevance.

- Under this, 10 domains have been identified which could substantially impact the living standards of the rural areas: (1) Health care technology, (2) Energy security, (3) Rural urban housing design, (4) Nano technology, (5) Water/river system, (6) Advanced materials, (7) Computer science and ICT, (8) Manufacturing technology, (9) Advanced security and (10) Environment/climate change.

- **Uchchtar Aavishkar Abhiyaan**: The Uchhatar Avishkar Yojana (UAY) was

launched to promote industry-specific need-based research so as to keep up the competitiveness of the Indian industry in the global market.

- All the IITs have been encouraged to work with the industry to identify areas where innovation is required and come up with solutions that could be brought up to the commercialization level.

- Under the UAY, it is proposed to invest Rs. 250 crores every year on identified projects proposed by IITs, provided the Industry contributes 25% of the project cost.

- **IMPRINT II**: It has been approved by Government of India (GoI) with a revised strategy under which, this national initiative will be jointly funded and steered by MHRD and Department of Science and Technology (DST).

- While any faculty member from an MHRD funded Higher Education Institute (HEI) including Centrally Funded Technical Institution (CFTI) may lead as the Principal Investigator (PI), single or multiple partners from stake holder ministry, institutions, PSUs, strategic agencies and industry are welcome as Co-PI, partner or collaborator.

- Proposals under IMPRINT II Projects should (a) address any declared theme (thrust area) under one of the 10 domains of IMPRINT, and (b) connect either with already identified or new research topics defined by the PI under the same 10 domains.

5. IMPROVING COMPETITIVENESS IN SMEs

What are the initiatives taken by GOI to promote competitiveness in SME sector?

- **Prime Minister's Employment Generation Programme (PMEGP)** is a major credit-linked subsidy programme being implemented by the Ministry of MSME.

- The Scheme is aimed at generating self-employment opportunities through establishment of micro-enterprises in the non-farm sector by helping traditional artisans and unemployed youth in rural as well as urban areas.

- **Solar Charkha Mission** cover 50 clusters across the country with a budget of Rs.550 crore for the year 2018-19 and 2019-20.

- The scheme will generate direct employment to nearly one lakh persons in rural areas and will also contribute to the green economy.

- Solar Charkha Units have been classified as village industries.

- The scheme of Solar Charkha Mission was proposed in the Union Budget 2018-19 to harness non-conventional solar energy to further employment generation.

- Ministry of MSME is implementing **Technology Centre Systems Programme (TCSP)** at an estimated cost of Rs. 2200 crore, including World Bank Loan assistance of USD 200 million, to establish 15 new Tool Rooms and Technology Development Centres (TCs)

and upgrade the existing 18 TCs across the country.

- **A Scheme for Promotion of Innovation, Rural Industry and Entrepreneurship (ASPIRE)** has been launched with an objective to set up a network of technology centers, incubation centres to accelerate entrepreneurship and also to promote start-ups for innovation and entrepreneurship in rural and agriculture based industry with a fund of Rs.210 crores.

- The planned outcomes of ASPIRE are setting up Technology Business Incubators (TBI), Livelihood Business Incubators (LBI) and creation of a Fund of Funds for such initiatives with SIDBI.

- The objectives **Scheme of Fund for Regeneration of Traditional Industries (SFURTI)** is to organize the traditional industries and artisans into clusters to make them competitive and provide support for their long term sustainability by way of enhancing the marketability of products, improving the skills of artisans, making provision for common facilities and strengthening the cluster governance systems.

- **Credit Guarantee Trust Fust for Micro and CGTMSE Scheme** was set up to strengthen credit delivery system and facilitate flow of credit to the MSE sector.

- The Credit Guarantee under CGTMSE seeks to reassure the lender that, in the event of a MSE unit, which availed collateral free credit facilities, fails to discharge its liabilities to the lender; the CGMSE would make good the loss incurred by the lender up to 85 per cent of the credit facility.

- **Credit Linked Capital Subsidy Scheme** (CLCSS) for Technology Upgradation aims at facilitating technology upgradation of Micro and Small Enterprises (MSEs) by providing 15% capital subsidy (limited to maximum Rs.15 lakhs) for purchase of Plant & Machinery.

- Maximum limit of eligible loan for calculation of subsidy under the scheme is Rs.100 lakhs. Presently, more than 1500 well established/improved technologies under 51 sub-sectors have been approved under the Scheme.

What are the recent 12 key initiatives which will help in the growth, expansion and facilitation of MSMEs across the country?

- Loans upto 1 crore within 59 minutes through an online portal.

- Interest subvention of 2% for all GST registered MSMEs on fresh or incremental loans.

- All companies with a turnover of more than 500 crores to be mandatorily on TReDS platform to enable entrepreneurs to access credit from banks, based on their upcoming receivables, thus, solving the problems of cash cycle.

- All PSUs to compulsorily procure 25 percent from MSMEs instead of 20 percent of their total purchases.

- Out of the 25 percent procurement mandated from MSMEs, 3 percent reserved for women entrepreneurs.

- All CPSUs to compulsorily procure through GeM portal.

- 100 Technology Centres to be established at the cost of Rs 6000 crore.

- Govt. of India to bear 70 percent of the cost for establishing Pharma clusters.

- Returns under 8 labour laws and 10 Union regulations to be filed once in a year.

- Establishments to be visited by an Inspector will be decided through a computerised random allotment.

- Single consent under air and water pollution laws. Returns will be accepted through self-certification and only 10 percent MSME units to be inspected.

- For minor violations under the Companies Act, entrepreneurs no longer have to approach court but can correct them through simple procedures.

6. IMPROVING GOVERNANCE IN PUBLIC SYSTEMS

What is meant by innovation in public system?

- Public systems tend to adopt innovations which enhance service delivery, increase efficiency and ensure cost reduction.

- An innovation in public systems can be defined as a process/policy intervention that

  - Improves the public service delivery

  - Enhances the efficiency of governance structure i.e. simplifying procedures etc.

- Improves citizen satisfaction

- Promotes transparency and accountability

- Reduces the time taken for service delivery

- Reduces the cost without affecting the efficacy and efficiency

- Leverages the use of technology

What are the types of innovations?

- Innovations which exist in the public domain are often overlapping and are not restricted to a particular category.

- However, for a better understanding, innovations in public systems may be broadly categorised under the following heads:

- **Service Innovations** intend to introduce a new service, product or improvement in the quality of an existing service or product.

- Bharat Interface for Money (BHIM) is a mobile application developed by the National Payments Corporation of India (NPCI) which enables e-payments directly through banks.

- **Service Delivery Innovations** create a new or improved way of delivering speciflc public service to the citizens that aim at improving accessibility, targeting user needs more accurately, bringing in simplification of procedures etc.

- Common Service Centres (CSCs) are the access Points for delivery of essential public utility services, social welfare schemes, healthcare, financial, education

and agriculture services, apart from a host of Business to Citizen (B2C) services to citizens in rural and remote areas of the country.

- **Administrative/Organizational Innovations** target to change the hierarchical structures and administrative routines in the Government

- Electronic National Agriculture Market (e-NAM) is a Pan-India electronic trading portal launched in 2O16 completely funded by the Central Government and implemented by Small Farmers' Agribusiness Consortium (SFAC).

- **Policy Innovations** bring about the systemic culture of nurturing fresh ideas. Best practices that have a proven record of sustainability may be incorporated and be advocated as a policy.

- Drafting a policy for promotion of innovations itself is a policy innovation.

- The National Bio fuel Policy encourages the use of bio fuels by extending appropriate financial incentives under various categories which results in reduced import dependency, a cleaner environment, employment generation etc.,.

What are the potential challenges in innovation in public systems?

- Resource mobilization.

- Departmental silos and lack of convergence mechanism.

- Fading away of the innovations due to a change in the personnel.

- Lack of institutional memory.

- Transfer of ownership.

- Lack of domain expertise.

- Internal animosity between different wings of Government / Organization.

7. ADDING MORE MEANING TO MONEY

- **What are the recent innovations in financial and banking sectors which have impacted the economy and benefitted common man ?**

- The **Pradhan Mantri Jan Dhan Yojana (PMJDY)** the biggest financial inclusion initiative in the world, has been started with a target to provide 'universal access to banking facilities' starting with "Basic Saving Bank Account" with an overdraft upto Rs.5000 subject to satisfactory operation in the account for six months and RuPay Debit card.

- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)** offers a renewable one year term life cover of Rupees Two Lakh to all subscribing bank account holders in the age group of 18 to 50 years, covering death due to any reason, for a premium of Rs.330/- per annum per subscriber, to be auto debited from subscriber's bank account.

- **Pradhan Mantri Suraksha Bima Yojana (PMSBY)** offers a renewable oneyear accidental death cum disability cover to all subscribing bank account holders in the age group of 18 to 70 years for a premium of Rs.12/- per annum per subscriber to be auto debited from

subscriber's bank account. The scheme provides a cover of Rs.

- Two Lakh for accidental death or total permanent disability and Rs One Lakh in case of permanent partial disability.

- PMJJBY and PMSBY provide insurance cover to common people, especially poor and the under-privileged sections of the society.

- The Government as well as the Public Sector Insurance Companies such as Life Insurance Corporation of India (LIC) had organized massive campaign to create awareness amongst large sections of population and also carried outreach efforts to facilitate access to the schemes.

- An exclusive website www.jansuraksha.gov.in, which hosts all relevant material / information including forms, rules etc. related to this scheme in English, Hindi and regional languages, was created.

- Under the **Atal Pension Yojana**, the subscribers would receive the fixed pension of Rs. 1000 per month, Rs. 2000 per month, Rs. 3000 per month, Rs. 4000 per month, Rs. 5000 per month, at the age of 60 years, depending on their contributions, which itself would vary on the age of joining the APY.

- The minimum age of joining APY is 18 years and maximum age is 40 years. Therefore, minimum period of contribution by the subscriber under APY would be 20 years or more. The benefit of fixed pension would be guaranteed by the Government.

- The Central Government would also co-contribute 50% of the subscriber's contribution or Rs. 1000 per annum, whichever is lower, to each eligible subscriber account, for a period of 5 years.

- The government set up a **Micro Units Development and Refinance Agency (MUDRA) Bank** through a statutory enactment.

- This Bank would be responsible for regulating and refinancing all Micro-finance Institutions (MFI) which are in the business of lending to micro/small business entities engaged in manufacturing, trading and services activities.

- The Bank would partner with state level/regional level co-ordinators to provide finance to Last Mile Financer of small/micro business enterprises.

- The **Stand up India Scheme** is being launched now to promote entrepreneurship among Scheduled Caste/Schedule Tribe and Women for loans in the range of Rs. 10 Lakhs to Rs. 100 Lakhs.

- The Scheme is expected to benefit large number of such entrepreneurs, as it is intended to facilitate at least two such projects per bank branch (Scheduled Commercial Bank) on an average one for each category of entrepreneur.