

29 Dec 2020: PIB Summary & Analysis

1. Eye cancer therapy

Context:

BARC develops eye cancer therapy.

Details:

- Bhabha Atomic Research Centre (BARC), Mumbai develops eye cancer therapy in the form of the first indigenous **Ruthenium 106 Plaque** for the treatment of Ocular Tumours.

What are ocular tumours?

- Ocular tumours are tumours inside the eye.
- They are collections of cells that grow and multiply abnormally and form masses.
- Radiation and chemotherapy are two common types of treatment for ocular tumours.
 - Radiation can be in the form of proton beam radiation or placement of radiation plaque on the eye.

Ruthenium 106 (Ru-106) plaque brachytherapy:

- Ruthenium 106 (Ru-106) plaque brachytherapy is used in the management of many types of tumours.
- Brachytherapy is a procedure that involves placing radioactive material inside the body.
 - It is a type of radiation therapy used in the treatment of cancer.
 - It is also known as internal radiation.
 - It allows doctors to deliver higher doses of radiation to more specific areas of the body.

What's in news?

- BARC has developed the first indigenous Ru-106 plaque.
- This is expected to reduce the cost of treatment of ocular tumour in the country.
- The newly developed plaque is said to be on par with international standards.

About BARC:

- BARC is India's chief nuclear research facility founded in 1954.
- Headquartered in Mumbai, it is a multi-disciplinary research centre with extensive infrastructure for advanced research and development covering the entire spectrum of nuclear science, engineering and related areas.
- It comes under the Department of Atomic Energy.
- BARC's core mandate is to sustain peaceful applications of nuclear energy, primarily for power generation.
- It manages all facets of nuclear power generation, from the theoretical design of reactors to, computerized modeling and simulation, risk analysis, development and testing of new reactor fuel materials, etc.
- It also researches spent fuel processing and safe disposal of nuclear waste.
- Its other research focus areas are applications for isotopes in industries, medicine, agriculture, etc.
- BARC operates a number of research reactors across the country.

2. Year-end review of the Department of Posts (DoP)

Background:

- The Department has been functioning for more than 150 years and is engaged in delivering mails, accepting deposits under Small Savings Schemes, providing life insurance cover under Postal Life Insurance (PLI) and Rural Postal Life Insurance (RPLI) and providing retail services like bill collection, sale of forms, etc.
- The DoP also acts as an agent for the Government of India in discharging other services for citizens such as the MGNREGS wage disbursement and old age pension payments.
- During the COVID-19 lockdown, the department also performed door-to-door delivery of financial services and medicines.

Sukanya Samriddhi Account (SSA) scheme

- The SSA scheme was launched by the Prime Minister in 2015. It is also known as ‘girl child prosperity scheme’.
- The account is designed to provide a bright future for the girl child.
- It offers a high interest rate of 7.6% and tax benefits under 80C.

PM Jan Suraksha Schemes

- These include various insurance schemes such as [Pradhan Mantri Suraksha Bima Yojana \(PMSBY\)](#), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) & Atal Pension Yojana (APY).
 - APY provides pension to unorganised workers who are not covered under any social security scheme. Read more about [Atal Pension Yojana](#) in the linked article.
 - PMJJBY provides life insurance security to the poor and low-income section of society. Read more about this insurance scheme [here](#).

Bima Gram Yojana

- The Bima Gram Yojana or Sampoorna Bima Gram Yojana offers affordable life insurance services to people living in rural areas of the country through the postal network.

Read more about the [Bima Gram Yojana](#) in the linked article.

3. DRDO Young Scientist Laboratory for Quantum Technologies (DYSL-QT)

Context:

DRDO Young Scientists Laboratory Develops Quantum based technology for Random Number Generation.

Random Numbers:

- Random numbers have essential roles in many fields, such as quantum communication, cryptography (key generation, key wrapping, authentication, etc.), scientific simulations, lotteries and fundamental physics experiments.
- The generation of genuine randomness is generally considered impossible with classical means.
- Quantum Mechanics has the inherent potential of providing true random numbers and thus has become the preferred option for the scientific applications requiring randomness.

What's in news?

- DYSL-QT has developed a Quantum Random Number Generator (QRNG) which detects random quantum events and converts those into a stream of binary digits.
- The Laboratory has developed a fibre-optic branch path based QRNG.
- Branch path based QRNG is based on the principle that if a single photon is incident on a balanced beam splitter, it will take either of the beam-splitter output paths randomly.
- As the path chosen by the photon is random, the randomness is translated to a sequence of bits.

DRDO Young Scientists Laboratory:

- DRDO Young Scientist Laboratories (DYSLs) are five specialised research laboratories located in five different cities of India, inaugurated by the Prime Minister in January 2020.
- They are located in Bengaluru, Chennai, Mumbai, Kolkata and Hyderabad.
- Each laboratory deals with a focused area of science - artificial intelligence, quantum technologies, cognitive technologies, asymmetric technologies and smart materials.
- The five labs are:
 - Artificial Intelligence – Bengaluru
 - Quantum Technologies – IIT Mumbai
 - Cognitive Technologies – IIT Chennai
 - Asymmetric Technologies – Kolkata (IIT Kharagpur's Kolkata campus)
 - Smart Materials – Hyderabad

4. Mission Sagar

Context:

As part of Mission Sagar III, INS Kiltan arrives at Sihanoukville, Cambodia.

Details:

- The ship will deliver 15 tons of Humanitarian Assistance and Disaster Relief (HADR) Stores for the flood-affected people of Cambodia, which will be handed over to Cambodia's National Disaster Management Committee (NDMC).

For more on Mission Sagar, check [PIB dated May 10, 2020](#).

5. Meteorological (Met) Centre at Leh

Context:

Union Minister for Science & Technology inaugurates Meteorological (Met) Centre at Leh.

Meteorological Centre at Leh:

- The Government has established the Meteorological Centre at Leh, Ladakh to strengthen weather-related Early Warning System in Ladakh.
- At 3500m, Meteorological Centre, Leh will be the highest meteorological centre in India.
- The centre has been established with a view to averting adverse weather events to which the region is witness to such as cloud bursts, flash floods, glacial lake outbursts (GLOFs), avalanches, droughts, etc.
 - Ladakh has a complex mountain terrain with annual precipitation of only 10 cm/year, thus it is a cold desert.
 - However, being a mountainous region, the place has a very harsh and extreme climate and experiences various kinds of disastrous weather events.
- With the availability of quality data from Ladakh, the India Meteorological Department ([IMD](#)) will generate city-specific forecasts based on numerical models.
- To help the administration and the people of Ladakh, IMD will provide a range of weather forecast services, ranging from short (3 days) and medium (12 days) to extended (1 month) period to all the stakeholders on a daily basis for both the districts (Leh and Kargil).
- It will provide forecasts for important tourist places like Nubra, Changthang, Pangong Lake, Zaskar, Kargil, Drass, Dha-Baima (Aryan valley), Khalsi among others.

6. Digital Ocean

Context:

Union Minister launches ‘Digital Ocean’.

Details:

- ‘Digital Ocean’ is a web-based application developed by INCOIS of the Ministry of Earth Sciences.
- It is the first of its kind digital platform for Ocean Data Management.
- The platform will help share knowledge about the ocean with a wide range of users including research institutions, operational agencies, strategic users, academic community, maritime industry and policymakers.
- It is expected to play a central role in the sustainable management of oceans and expanding ‘Blue Economy’ initiatives.
- Further, the Digital Ocean will be promoted as a platform for capacity building on Ocean Data Management for all Indian Ocean Rim countries.
- The platform includes a set of applications developed to organize and present heterogeneous oceanographic data by adopting rapid advancements in geospatial technology.
- It facilitates an online interactive web-based environment for data integration, 3D and 4D (3D in-space with time animation) data visualization, data analysis to assess the evolution of oceanographic features, data fusion and multi-format download of disparate data from multiple sources viz., in-situ, remote sensing and model data, all of which is rendered on a georeferenced 3D Ocean.

7. TiHAN-IIT Hyderabad

Context:

Union Minister of Education virtually lays foundation stone of 'TiHAN-IIT Hyderabad'.

What is TiHAN-IIT Hyderabad?

- It is India's first test bed for Autonomous Navigation Systems (Terrestrial and Aerial).
- TiHAN Foundation, established at IIT Hyderabad, is a multi-departmental initiative, including researchers from Electrical, Computer Science, Mechanical and Aerospace, Civil, Mathematics, and Design at IIT Hyderabad with collaboration and support from reputed institutions and industry.
- The test bed will be a fully functional and exemplary facility dedicated to Connected Autonomous Vehicles – CAVs. The hub's focus sectors include Intelligent, Autonomous Transportation and Systems, Agriculture, Surveillance, and Environmental & Infrastructure Monitoring.

Background:

- The Department of Science and Technology (DST), Government of India, has sanctioned Rs. 135 crores to IIT Hyderabad under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to set up a Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs, etc.).
- The Technology Innovation Hub on Autonomous Navigation Systems for Unmanned Aerial Vehicles and Remotely Operated Vehicles at IIT Hyderabad, known as 'TiHAN Foundation' has been incorporated as a Section-8 company by the institute in June 2020.
- Several organizations worldwide have developed test beds or proving grounds to investigate the functioning of unmanned and connected vehicles in a controlled environment by replicating different scenarios, ranging from frequently occurring to extreme cases that may ensue in real-life traffic operations.
- At present, there is no such test bed facility in India to evaluate the autonomous navigation of vehicles.
- Hence, the need to fill this gap was felt.

8. GAVI, The Vaccine Alliance

Context:

Union Health Minister Dr. Harsh Vardhan nominated to the Board of GAVI, The Vaccine Alliance.

Details:

- The Minister has been nominated by the Global Alliance for Vaccines and Immunisation (GAVI) as a member on the GAVI Board.
- He will be representing the South East Area Regional Office(SEARO)/Western Pacific Regional Office (WPRO) constituency on the GAVI Board.
- He will hold the post from 1st January 2021 until 31st December 2023.

About GAVI:

- GAVI, the Vaccine Alliance, as part of its mission to save lives, reduce poverty and protect the world against the threat of epidemics, has helped vaccinate more than 822 million children in the world's poorest countries, preventing more than 14 million future deaths.

- GAVI was formed in 2000 as the 'Global Alliance for Vaccines and Immunisation'.
 - It was initiated by the Bill and Melinda Gates Foundation.
 - It partners with the Foundation, the WHO, the UNICEF, the World Bank and governments all over the world.
 - GAVI chiefly works in the area of improving access to vaccines for the most vulnerable children.
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