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1. Voyager - 2

News

- Nasa Fixed a glitch in this probe in February.

About

- Like Voyager 1, Voyager 2 is also was designed to find and study the edge of our solar system.
- It is the only spacecraft to study all four of the solar system's giant planets- Jupiter, Saturn, Uranus and Neptune at close range.
- It officially entered 'interstellar space' in November 2018. It joined its twin—Voyager 1—as the only human-made objects to enter the space between the stars.
 - ✓ This space between the stars, is dominated by the plasma that was ejected by the death of nearby giant stars millions of years ago.
 - ✓ The sun sends out a constant flow of charged particles called the solar wind, which ultimately travels past all the planets to some three times the distance to Pluto before being impeded by the interstellar medium.
- This forms a giant bubble around the sun and its planets, known as the heliosphere. It was the first human-made object to fly past Uranus in 1986 and Neptune in 1989, making it the only spacecraft to have had a close look of the icy planets.

2. National Commission for Indian Systems of Medicine Bill, 2019

News

- Recently this bill was passed by Rajya Sabha in the month of march.

About

- It repeals Indian Medicine Central Council Act, 1970 and provides for a medical education system which ensures:
 - ✓ Availability of adequate and high quality medical professionals of Indian System of Medicine.
 - ✓ Adoption of the latest medical research by medical professionals of Indian System of Medicine.
 - ✓ Periodic assessment of medical institutions
 - ✓ An effective grievance redressal mechanism

Key features of the Bill

- Constitution of the NCISM: for development and regulation of all aspects relating to education, medical profession and medical institutions of Indian System of Medicine.
- Functions of the NCISM include:
 - ✓ Framing policies for regulating medical institutions and medical professionals of Indian System of Medicine.



- ✓ Ensuring compliance by the State Medical Councils of Indian System of Medicine of the regulations made under the Bill Ensuring coordination among the autonomous boards set up under the Bill, Autonomous boards:
- ✓ The Bill sets up certain autonomous boards under the supervision of the NCISM. These boards are:
 1. Board of Ayurveda
 2. Board of Unani, Siddha, and Sowa-Rigpa
 3. Medical Assessment and Rating Board for Indian System of Medicine
 4. Ethics and Medical Registration Board
- Advisory Council for Indian System of Medicine: It will be the primary platform through which the states/union territories can put forth their views and concerns before the NCISM. Further, the Council will advise the NCISM on measures to determine and maintain the minimum standards of medical education.
- Entrance examinations: There will be a uniform National Eligibility-cum-Entrance Test for admission to under-graduate education. The Bill also proposes a National Teachers' Eligibility Test for postgraduates of each discipline of Indian System of Medicine who wish to take up teaching that particular discipline as a profession.

3. Empowered Technology Group

- It is 12-Member group including the chairmen of the Atomic Energy Commission, the Space Commission and the Defence Research and Development Organisation and the secretaries of the IT, telecommunications and science & technology ministries.
- It is mandated to render timely policy advice on latest technologies; mapping of technology and technology products; commercialisation of dual use technologies; developing an indigenisation road map for selected key technologies; facilitate cross-sector collaboration and selection of appropriate R&D programs leading to technology development.

4. Insights Mission

News

- It has detected Quakes and magnetic pulses on the planet Mars.

About

- Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight), is the first mission dedicated to looking deep beneath the Martian surface.
- It is part of NASA's Discovery Program and is supported by a number of European partners including France's Centre National d'Études Spatiales (CNES), the German Aerospace Centre (DLR) and the United Kingdom Space Agency (UKSA).

5. International Intellectual Property (IP) Index

News

- This report was published in February by US Chamber of Commerce's Global Innovation Policy Centre (GIPC).

Important Facts

- India's ranked 40th among 53 countries, while in 2019 India was ranked at 36th position out of 50 countries. However, India's score increased from 36.04 per cent in 2019 to 38.46 per cent in 2020, a 2.42 per cent jump in an absolute score.
- The US, the UK, Sweden, France and Germany remained the top five economies on the index.

6. National Commission for Homeopathy Bill, 2019

Recently this bill was passed by Rajya Sabha, which seeks to repeal the Homoeopathy Central Council Act, 1973 and provide for a medical education system which ensures:

- Availability of adequate and high quality homeopathic medical professionals
 - Adoption of the latest medical research by homeopathic medical professionals
 - Periodic assessment of medical institutions o An effective grievance redressal mechanism.
- Key features of the bill are -
- Constitution of the National Commission for Homoeopathy (NCH): for development and regulation of all aspects relating to education, medical profession and medical institutions of Homoeopathy.

Functions of the NCH include:

- Framing policies for regulating medical institutions and homeopathic medical professionals Assessing the requirements of healthcare related human resources and infrastructure. Ensuring compliance by the State Medical Councils of Homoeopathy of the regulations made under the Bill. Ensuring coordination among the autonomous boards set up under the Bill.
- Constitution of three Autonomous Boards: Homeopathy Education Board, Medical Assessment and Rating Board and the Board of Ethics and Registration.
- Advisory Council for Homoeopathy: Under the Bill, the central government will constitute an Advisory Council for Homoeopathy. The Council will be the primary platform through which the states/union territories can put forth their views and concerns before the NCH. Further, the Council will advise the NCH on measures to determine and maintain minimum standards of medical education.
- Entrance examinations: There will be a uniform National Eligibility-cum-Entrance Test for admission to under-graduate homoeopathy education. The Bill proposes a common final year National Exit Test for the students graduating from medical institutions to obtain the license for practice.

7. Medical Devices notified as Drugs

News

- Starting from April 1, 2020, all medical equipment would qualify as “drugs” under the Drugs and Cosmetics Act, 1940.
- All devices, including instruments and implants, whether used alone or in combination for various purposes like diagnosis, prevention, monitoring, among others, will be regulated under the legislation.
- The manufacture, import and sale of all medical devices will now need to be certified by the Central Drugs Standard Control Organisation which is under the Ministry of Health and Family welfare. It will make medical device companies accountable for quality and safety of their products.

8. Water Purifiers - RO systems Banned

News

- The Union Ministry of Environment, Forest and Climate Change (MoEFCC) has issued a draft notification that seeks to ban membrane-based water purification systems (MWPS), primarily reverse osmosis (RO), in areas where the amount of dissolved solids was less than 500 milligram/ litre.
 - ✓ At present according to the BIS standards, drinking water is considered below par if the TDS is below 500 mg/L. (It does not have any minimum level for TDS) BIS standards also state that RO system is not recommended for treatment of raw water having Arsenic level above 0.1 mg/l and Fluoride level above 8.0 mg/l. Ban was ordered on the grounds that RO wastes water and that, in the process of removing salts, they often deprive drinking water of essential salts.
 - ✓ It also asked the ministry to lay down a requirement for RO systems manufacturers that the recovery of treated water should be at least 60 per cent as against 20 per cent prescribed by the Bureau of Industry Standards (BIS) in 2015. Gradually, the recovery rate should be enhanced to 75 per cent.

About

- Reverse Osmosis - it is a process by which pressure is used to force water through a tight membrane that blocks passage of solute, particulate matter, bacteria, and endotoxins, among other things, to produce pure water.
- Osmosis - it is the movement of water that occurs when two compartments are separated by a semi-permeable membrane whereby water moves from an area of low solute concentration to an area of high solute concentration.

Concerns related to RO system

- Demineralisation of water after RO.
- Limitation in removing other toxic impurities.
- Wastage of water
- Misleading advertisement by RO manufacturer

9. Scientific Utilisation Through Research Augmentation - Prime Products From Indigenous Cows (SUTRA-PIC)

News

It is program for research on indigenous cows, this initiative is led by Department of Science and Technology.

About

- This research will deal with 5 thematic areas.
 1. Uniqueness of Indigenous cows.
 2. Prime products from Indigenous cows for medicines and health
 3. Prime Products from Indigenous cows for Agriculture Applications.
 4. Prime products from Indigenous cows for Food and Nutrition.
 5. Prime Products from Indigenous cows- based utility items.

10. Project on Mapping the Indian Genome

News

- Union government has given clearance to an ambitious gene mapping project known as the Genome India Project

About

- It has been cleared by the Department of Biotechnology under the ministry of Science and technology.
- it involves 20 leading institutions including the Indian Institute of Science in Bengaluru and a few IITs.
- A genome is the entire DNA, or sequence of genes, in a cell. Simply put, the genome is divided into chromosomes, chromosomes contain genes, and genes are made of DNA.
 - ✓ Each genome has approximately 3.2 billion DNA base pairs.
 - ✓ Sequencing a genome means deciphering the exact order of base pairs in an individual. The way these base pairs are arranged, or variations and mutations in their pattern, can provide clues about the individual's health or ill health, inherited or acquired.

11. National Mission On Quantum Technologies and Applications

News

- It has been announced in the Budget 2020.

About

- Implemented by Department of Science and Technology, Ministry of Science and Technology.
- It will have a budget of 5000 crore over the next 5 years.

- The areas of focus for the Mission will be in fundamental science, translation, technology development, human and infrastructural resource generation, innovation and start-ups to address issues concerning national priorities.
- Quantum Technology is based on the principles of quantum theory which revolves around wave-particle duality of matter. Sub-atomic matters like electrons may act as wave and there is some uncertainty involved in determining characteristics like their speed or location. This uncertainty or probability (0 to 1) is used in quantum computing.

12.Dark Net

- Also known as Dark Web, Dark Net is that part of the Internet that cannot be accessed through traditional search engines like Google nor is it accessible by normal browsers like Chrome or Safari.
- It generally uses non-standard communication protocols which makes it inaccessible by internet service providers (ISPs) or government authorities.
- The content on Dark Net is encrypted and requires specific browser such as TOR (The Onion Ring) browser to access those pages.
- Dark Net itself is only a part of the Deep Web that is a broader concept, which includes sites that are protected by passwords. For e.g.- A person's bank statements which are available online but will not be pulled up in generalised Internet searches. Only difference is that while the Deep Web is accessible, the Dark Net is deliberately hidden. The part of internet that is readily available to general public and searchable on standard search engines is called as Surface Web.
- Concerns
 - ✓ Anonymity
 - ✓ Haven for illicit activity
 - ✓ Technical challenges to establish digital evidence in courts.
 - ✓ Privacy and ethical concerns
 - ✓ Use of Crypto Currencies.

13.COVID- 19

- Coronaviruses are a large family of viruses that circulate among a range of animals, such as bats, cats, and birds. Sometimes these viruses make a jump over from animals to humans (known as Spill over) causing diseases known as Zoonotic diseases.
- While the SARS coronavirus is thought to have evolved from infecting bats to civet cats to humans in the Guangdong province of southern China in 2002, the MERS evolved from bats to camels to humans in Saudi Arabia in 2012.
- This virus was first identified in Wuhan (Hubei province), China in 2019.
- Coronaviruses are spherical shaped and consist of a core of genetic material (RNA) surrounded by an envelope with mushroom shaped protein spikes. These spikes binds and fuses to human cells allowing the virus to gain entry and replicate itself inside the body.

- So basically it is a RNA virus, with each Virus particle between 50-200 nanometers in diameter. Unlike in the case of SARS, the spike protein of the novel coronavirus binds to the cell receptor with much higher affinity – 10-to 20-fold higher. The RBD's bonding affinity is increased due to mutation within the virus.
- R0 - Reproductive number or R naught ((the number of additional cases that likely result from an initial case), the rate at which the virus is spread, R0 for covid is expected to be between 2 and 2.5.
- It is being declared as a pandemic disease, According to the World Health Organization, a pandemic is declared when a new disease for which people do not have immunity spreads around the world and between people sustainably beyond expectations.
- Vertically transmitted Infection -Emerging evidences suggests of vertical transmission is probable in CoVID-19.
 - ✓ Vertical transmission refers to the transmission of an infection from a pregnant woman to her child. It can be antenatal (before birth), perinatal (weeks immediately prior to or after birth) or postnatal (after birth).
 - ✓ Transmission might occur across the placenta, in the breast milk, or through direct contact during or after birth.
 - ✓ Among infections of which vertical transmission has been known to happen are HIV, Zika, rubella and the herpes virus.
- Patent Pools
 - ✓ According to World Intellectual Property Organisation (WIPO), patent pools are defined as an agreement made between two or more patent holders for licensing their patents to one another or any third party for the purpose of sharing their intellectual property rights.
 - ✓ Generally, patents pools are made for complex technologies which necessitate complementary patents for providing productive technical solutions such as vaccines in the present Covid-19 crisis.
 - ✓ Sewing Machine Combination" of 1856 is considered as the first modern patent pool in the United States.
 - ✓ Patent pooling structures were actively discussed and considered in response to the SARS outbreak of 2002- 03, the H5N1 influenza outbreak of 2005, and the H1N1 influenza pandemic of 2009

Medical tests for COVID 19

1. Serological Tests/Rapid Antibody Detection Tests
 - ✓ Blood/serum/plasma test carried out to determine whether an individual's body has IgM and IgG antibodies developed against the SARS-CoV-2.
2. Molecular Test/ ReverseTranscription Polymerase Chain Reaction (RTPCR) test:
 - ✓ Identifies the presence of virus itself based on its genetic fingerprint.
3. Pool Testing Method



- ✓ It involves simultaneously testing a combined sample from multiple people from a household or a local cluster to widen reach and speed up results. Suitable for expanded testing in larger population groups.

4. Feluda Test

- ✓ It is a paper-based test strip developed by CSIR scientists to detect the new coronavirus within an hour.
- ✓ The test uses the cutting-edge gene-editing tool- Crispr-Cas9 to target and identify the genomic sequences of the novel coronavirus in the samples of suspected individuals.

5. Chitra GeneLAMP-N

- ✓ It is a diagnostic test kit that can confirm COVID-19 in 2 hours at low cost.
- ✓ It has been developed by Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum under the Department of Science and Technology (DST).
- ✓ It detects the N Gene of SARS- COV2 using reverse transcriptase loop-mediated amplification of viral nucleic acid (RT-LAMP) technology, and can detect two regions of the gene, which will ensure that the test does not fail even if one region of the viral gene undergoes mutation during its current spread.

14. Tele Medicine

- World Health Organization defines telemedicine as the delivery of health-care services by health-care professionals using information and communications technologies for diagnosis, treatment and prevention of disease and injuries, with the aim of advancing the health of individuals and communities.
- Telemedicine comprises remote diagnosis and treatment of patients by means of telecommunications such as video, phone, chatting apps, etc.
- Advantages
 - ✓ Increased access to healthcare.
 - ✓ Reduced healthcare costs
 - ✓ Enhances traditional face to face medicine
 - ✓ Improved patient engagement and satisfaction
- Challenges
 - ✓ Accessibility to technology
 - ✓ Privacy Concerns
 - ✓ Patient preference

15. Schemes for Pharmaceutical and Medical Devices Industry in India

Promotion of Medical Device Parks

- To promote medical device parks in the country in partnership with the states. A maximum grant-in-aid of Rs. 100 crore per park will be provided to the states.
- Implementation by State Implementing Agency.
- It is to provide financial assistance for Common Infrastructure Facilities for 4 Medical Device park.

Production Linked Incentive scheme:

- Incentive @ 5% of incremental sales over base year 2019-20 will be provided on the segments of medical devices identified under the Scheme.
- Implementation by Project Management Agency to be nominated by the Department of Pharmaceuticals.
- The target is to aid about 25-30 manufacturers under the following categories of medical devices.
 1. Cancer care/Radiotherapy medical devices,
 2. Radiology & Imaging medical devices and Nuclear Imaging Devices,
 3. Anaesthetics & Cardio-Respiratory medical devices .
 4. All Implants including implantable electronic devices like Cochlear Implants and Pacemakers.

Promotion of bulk drugs park

- Aim is to develop 3 mega Bulk Drug parks in India in partnership with States.
- Government of India will give Grants-in-Aid to States with a maximum limit of Rs. 1000 Crore per Bulk Drug Park.
- Parks will have common facilities such as solvent recovery plant, distillation plant, power & steam units, common effluent treatment plant etc.
- A sum of Rs. 3,000 crores have been approved for this scheme for next 5 years.
- It will be implemented by State Implementing Agencies (SIA) to be set up by the respective State Governments.

Production Linked Incentive Scheme for promotion of domestic manufacturing of critical KSMs/Drug Intermediates and APIs

- Financial incentive will be given only to eligible manufacturers of identified 53 critical bulk drugs on their incremental sales over the base year (2019-20) for a period of 6 years.
- A sum of Rs. 6,940 crores have been approved for next 8 years.

16. Bacillus Calmette Guerin Vaccine

News

- Researchers across the world are testing the Bacillus Calmette-Guerin (BCG) vaccine against the novel coronavirus disease (COVID-19).

About

- This vaccine was developed in 1921 to be used against Tuberculosis.
- It is composed of a live, weakened strain of the bacterium Mycobacterium bovis (causative agent of tuberculosis in cattle) which related to mycobacterium tuberculosis, the bacteria which causes tuberculosis in humans.
- In India, BCG vaccine was first introduced in 1948 and was then made a part of universal immunisation programme and administered to millions of children at birth or soon after it.
- BCG vaccine has proved quite effective against the SARS infection also.
- Recent studies showed that it is effective in controlling blood sugar in people with diabetes type 1 and maintained better sugar levels for the next five years. It has also been found effective as bladder cancer therapy and increasing survival of low birth weight children.

17. Indian Initiative on Earth BioGenome Sequencing (IIEBS)

- This project aims to decode the genetic information of all known species of plants and animals in the country.
- The National Institute of Plant Genome Research, New Delhi is the coordinating centre involving a total of 24 institutes.
- The whole genome sequencing of 1,000 species of plants and animals will be taken up in the initial phase of IIEBS to be completed over a period of five years at an estimated cost of ₹440 crore.
- The project is part of the Earth BioGenome Project.
 - ✓ It is a global effort launched in 2018, involving scientific partners and funders from around the globe.
 - ✓ It aims to sequence, catalogue and characterise genomes of all of Earth's eukaryotic biodiversity over a period of ten years.
 - ✓ Vision- Create a new foundation for biology to drive solutions for preserving biodiversity and sustaining human societies.
 - ✓ A genome is an organism's complete set of deoxyribonucleic acid (DNA).
 - ✓ Sequencing a genome means deciphering the exact order of base pairs in an organism.
 - ✓ The way these base pairs are arranged, or variations and mutations in their pattern, can provide clues about the individual's health or ill health, inherited or acquired.

Significance

- The project will enable collection and preservation of endangered and economically important species.
- The decoded genetic information will also be a useful tool to prevent biopiracy.
- Biopiracy is exploitative use of genetic code of plants or animals, without compensating the countries from which the material or relevant knowledge is obtained.
- India's participation in the EBP would provide a boost for the field of genomics and bioinformatics within the country.

18. Blockchain Technology

- Blockchain is a series of data linked together. Every single transaction is linked to the chain using cryptographic principles in batches, making blocks.
- The blocks are connected to each other and have unique identifier codes (called hashes) that connect them to the previous and the subsequent blocks.
- This forms a blockchain, usually in the form of a continuous ledger of transactions.

19. Indian Tuberculosis Report 2020

Cases

- 2.4 million cases of tuberculosis (TB) were reported in 2019 (14% higher than last year) and 79,000 deaths.
- Reduction in number of missing cases to 2.9 lakh cases as against more than 10 lakhs in 2017.
- Missing cases refer to the gap between the estimated and notified incident cases.
- Provision of HIV testing for all notified TB patients increased from 67% in 2018 to 81% in 2019.

Treatment

- Due to easy availability of molecular diagnostics, proportion of children diagnosed with TB increased to 8% in 2019 compared to 6% in 2018.
- Improvement in treatment success rate is 81% in 2019 (69% in 2018).
- More than 4.5 lakh DOT Centers provide treatment covering almost every village across the country.
- Ranking of states: In 2020, Central TB Division (CTD) introduced a quarterly ranking on TB elimination efforts by all States and UTs.
 - ✓ In the categories of larger states with more than 50 lakh population, Gujarat, Andhra Pradesh and Himachal Pradesh were awarded as best performing States.
 - ✓ In the category of smaller states with less than 50 lakh population, Tripura and Nagaland were awarded.
 - ✓ In the category of Union Territory, Dadara and Nagar Haveli, and Daman & Diu were chosen as the best performers.

Key Initiative

- National Strategic Plan (2017-2025): It has completed 3 years of its implementation.
 - ✓ Under this, India is committed to eliminate TB by 2025, 5 years ahead of Sustainable Development Goal3, 2030.
- Revised National Tuberculosis Control Program (RNTCP): It has been renamed as “National Tuberculosis Elimination Program (NTEP)” to accelerate momentum towards eliminating Tuberculosis in the country by 2025.
 - ✓ NTEP receives funding from The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), The World Bank and other donors.
- Early accurate diagnosis being done.
 - ✓ Ziehl-Neelsen acid-fast staining /Fluorescence Microscopy are the primary tools for diagnosis of patients with Pulmonary Tuberculosis presumed to be drug sensitive.
 - ✓ Patients at risk of Multi-Drug Resistant TB (MDR-TB) are diagnosed using WHO endorsed rapid diagnostics (WRD) like Cartridge Based Nucleic Acid Amplification Test (CBNAAT) / Line Probe Assay (LPA)/ TrueNAT.
- 700 TB Forums have been established as part of community-based response for TB to reach the unreached and to support TB patients.
- On-line notification of TB patients through the NIKSHAY portfolio
 - ✓ NIKSHAY is the National TB information system which acts a one-stop solution to manage information of patients and monitor program activity throughout the country.
 - ✓ It acts as a Surveillance tool under NTEP.
 - ✓ It provides a National Data repository of TB information for advanced analytics.
 - ✓ It performs Direct Benefit Transfers to the patients through integration with Public Financial Management System (PFMS).

20. New Space Indian Limited

- It is the commercial arm of ISRO with the primary responsibility of enabling Indian industries to take up high technology space related activities.
- It is a wholly owned Government of India company, under the administrative control of Department of Space (DOS).
- NSIL does not replace ANTRIX which still exists and has similar functions.
 - ✓ Antrix was incorporated as a private limited company owned by Government of India 1992 in as a Marketing arm of ISRO for promotion and commercial exploitation of space products, technical consultancy services and transfer of technologies developed by ISRO.
- NSIL will work with IN-SPACE and enable industry consortia to take on some of the activities of ISRO.
- Major business areas of NSIL are Launch vehicle production, Production and marketing of space based services, Building satellites, Transfer of technology etc.

21. Indian National Space Promotion and Authorisation Centre (In Space)

- It is the new entity of the Department of Space which will have its own chairperson and board.
 - ✓ It will regulate and promote building of routine satellites, rockets and commercial launch services through Indian industry and startups.
 - ✓ It will have its own directorates for technical, legal, safety and security, monitoring and activities promotion.
- It will act as an interface between ISRO and private parties, and assess how best to utilise India's space resources and increase space-based activities.
 - ✓ It will function autonomously and parallel to ISRO.
 - ✓ Indian Space Research Organisation (ISRO) will remain the basic body that decides what missions are to be undertaken but IN-SPACe will help fill the gaps.
- It is the second space organisation created by the government in the last two years. The first one was New Space India Limited (NSIL) after it was announced in 2019 Budget.

22. Fifth State of Matter

News

NASA Scientists recently observed the fifth state of matter in space for the first time as part of Bose Einstein Condensates (BEC) Experiments aboard the International Space Station (ISS).

Fifth State of Matter

- The existence of Bose Einstein Condensate, also known as the fifth state of matter was predicted by Albert Einstein and Indian mathematician Satyendra Nath Bose in early 1920s
 - ✓ Solids, liquids, gases and plasma are the other four states of matter.
- BEC is a supercooled gas that no longer behaves as individual atoms and particles, but rather an entity in a single quantum state. • BECs are formed when atoms of certain elements are cooled to near absolute zero (0 Kelvin, minus 273.15 Celsius).
- When they reach that temperature, the atoms become a single entity with quantum properties, wherein each particle also functions as a wave of matter.
- BECs are extremely fragile and the slightest interaction with the external world is enough to warm them past their condensation threshold.
- This makes it nearly impossible for scientists to study them on Earth, where gravity interferes with the magnetic fields required to hold them in place for observation.
- BEC experiments will help in
 - ✓ Tests of general relativity
 - ✓ Searches for dark energy and Gravitational waves
 - ✓ Spacecraft navigation Quantum mechanics on a macroscopic level

- ✓ Prospecting for subsurface minerals on moon and other planetary bodies.

23. Accelerate Vigyan

News

Science and Engineering Research Board (SERB) launched 'Accelerate Vigyan' scheme to push scientific research.

About

- The scheme is to boost high-end scientific research and prepare scientific manpower that can venture into research careers by identifying research potential, mentoring, training and giving hands-on workshops on a national scale.
- Components
 - ✓ ABHYAAS: To enable and groom potential PG/PhD students by developing their research skills in selected areas across different disciplines or fields.
 - ❖ It has two components: High-End Workshops (KARYASHALA) and Research Internships (VRITIKA).
 - ✓ SAMMOHAN programme: To encourage, aggregate and consolidate all scientific interactions in the country under one common roof.
 - ❖ It has two parts: 'SAYONJIKA' to catalogue capacity building activities in science and technology supported by all government funding agencies and 'SANGOSHTI' to facilitate the scientific community to establish an interaction with other individuals and research groups to enhance knowledge exchange.
- It will seek to garner the social responsibility of the scientific community in the country and is expected to promote R&D in India

24. Chunauti - Next generation Start-up challenge contest

- Ministry of Electronics and Information Technology has launched "Chunauti"- Next Generation Startup Challenge Contest.
- To further boost startups and software products with special focus on Tier-II towns of India. 2. Identify around 300 startups working in identified areas and provide them seed fund of upto Rs. 25 Lakh and other facilities.

25. Beidou Navigation Satellite System

- It is Chinese Satellite Navigation System. The system uses a network of satellites and can provide positional accuracies of under ten metres (GPS provides positioning accuracies of under 2.2 metres).
- China initiated BeiDou in 1994 with aims to integrate its application in different sectors, including fishery, agriculture, special care, mass-market applications, forestry and public security.
- BeiDou offers services including accurate positioning, navigation and timing as well as short message communication.

26.ASTROSAT

News

- India's multi-wavelength orbiting telescope, AstroSat, has detected light from a galaxy, called AUDFs01, in the extreme-ultraviolet (UV) light.

About

- It is India's first multi-wavelength space telescope, which has five telescopes seeing through different wavelengths simultaneously – visible, near UV, far UV, soft X-ray and hard X-ray.
- Onboard the AstroSat is a 38-cm wide UltraViolet Imaging Telescope (UVIT), which is capable of imaging in far and near-ultraviolet bands over a wide field of view.
- AstroSat was launched on 28 September 2015 by ISRO into a near-Earth equatorial orbit..
- It is a multi-institute collaborative project, involving IUCAA, ISRO, Tata Institute of Fundamental Research (Mumbai), Indian Institute of Astrophysics (Bengaluru), and Physical Research Laboratory (Ahmedabad), among others.