My Notes....

NATIONAL

INDIA GETS IMO NOD FOR IRNSS

India has become the fourth country in the world to **have its independent regional navigation satellite system** recognised by the **International Maritime Organisation (IMO)** as a part of the **World Wide Radio Navigation System (WWRNS)**. The **other three countries** that have its navigation systems recognised by the IMO are the **US, Russia and China**. The **Indian Regional Navigation Satellite System (IRNSS)** was designed **to provide accurate position information services** to assist in the **navigation of ships in Indian Ocean waters**.

What

1. The **Director General of Shipping (DGS)** had approached the IMO for granting recognition to the **IRNSS as a component of the WWRNS**, similar to the **US-owned Global Position System (GPS)** or **Russia's Global Navigation Satellite System (GLONASS)** – a process that **took two years**.

2. The IMO has encouraged various countries to design their own satellite navigation systems. The **IMO has now accepted IRNSS as an alternative navigation module**.

3. **It was in use only on a pilot basis earlier** but now all merchant vessels are authorised to use it, even small fishing vessels.

4. The **IRNSS was a modern and more accurate navigation system** and at any given time, there are at **least 2,500 merchant vessels in Indian waters** that will now be able to use the system.

5. The IRNSS will be used to assist in the navigation of ships in ocean waters **within the area of approximately 1,500 km from the Indian boundary**.

INDIA SET UP AIPA

A month ahead of the **Paris Agreement on Climate Change becoming operational**, India has set up an **Apex Committee for Implementation of Paris Agreement (AIPA)**, comprising **members from its 13 key ministries**, to coordinate actions for **achieving its goals under the global deal**. The agreement **will officially come into force from 1**

January 2021. The apex body will also **function as a national authority to regulate carbon markets in India** under the Paris Agreement in the post-2020 period. Its roles will include issuing guidelines for **carbon pricing and market mechanisms** to offset carbon footprints of emitters.

What

1. A gazette notification, issued by the environment ministry on 27 November 2020, enlists as many as **16 functions for this body** which will have power **to issue directions under Section 5 of the Environment (Protection) Act, 1986** to industries or any entities for compliance on cleaner practices in sync with India's goals.

2. **Headed by environment secretary, R P Gupta**, the **17-member Committee** will define responsibilities of concerned ministries for fulfilling **India's 'nationally determined contribution' (NDC) pledges** and receive periodic information updates to monitor, review and revisit climate goals to meet the requirements of the Paris Agreement.

3. The Committee, **comprising India's key climate negotiator** and additional secretary in environment ministry **Ravi Shankar Prasad as its vice-chairperson**, will also develop programmes and policies, if required, to make **India's domestic climate actions compliant with its international obligations**.

4. The ministries whose representatives have given **place as ex-officio members in the Committee** include **environment**, **finance**, **external affairs**, **agriculture**, **water** resources (Jal Shakti), power, new and renewable energy, earth sciences, health, rural development, commerce & industry, science & technology and urban affairs. Besides, a senior official from Niti Aayog is also one of the members.

5. The AIPA will have to submit a report about its activity at least **once in six months to the central government**.

INDIA'S FIRST MOSS GARDEN

India's first moss garden has been developed at **Khurpatal in Nainital district**, officials said on 21 November 2020. It was **approved in July last year under the CAMPA scheme** by the **Research Advisory Committee of Uttarakhand Forest Department**.

What

1. The **main aim behind developing the garden** was **to conserve the various species of moss** and **other bryophytes** and to make people aware of its significance in the environment besides creating a recreation centre for tourists.

2. **Moss Garden**, Khurpatal houses **around 30 different species of moss** and **certain other bryophyte species**.

3. Two of the moss species found here i.e. **Hyophila involuta (Cement Moss)** and **Brachythecium Buchanani figure in the International Union for Conservation of Nature's (IUCN) red list**.

4. It has a **moss trail of 1.2 km** on which different moss species and scientific information about them is displayed.

5. It has an interpretation centre in which different aspects of moss are displayed through models including a **First World War** painting showing **use of Sphagnum moss** as a dressing for wounds as it absorbs liquids about three times more quickly

than cotton, is cooler, softer, and less irritating than cotton, besides **having antiseptic properties**.

6. It also produces a **sterile environment** by keeping the pH level around wounds low and thus inhibiting the growth of bacteria.

7. The **garden also boasts of a dinosaur model** showing existence of moss since the **Jurassic era**, ornaments made of live moss which are very popular in Japan, **moss terrarium depicting live moss ecosystem** and nest of birds using moss for temperature regulation and antibacterial purposes.

GEURS 2020

The Indian Institute of Technology (IIT) Delhi has been **ranked as the best institute in India** and **27th globally**, in **terms of employability of its students**, in the **Global Employability Ranking and Survey (GEURS) 2020 results**. Globally, **India has been ranked among the 15 best-performing countries** in employability, **improving from its 23rd rank in 2010**.

What

1. **IIT Delhi climbed 27 ranks from 54 in 2019 to 27**. Indian Institute of Science (IISc), however, has dropped to 71 from 43 in 2019.

2. The other Indian institutes that made it to the list are **IIT Bombay (128)**, **Indian Institute of Management (IIM) Ahmedabad (184)**, **IIT Kharagpur (195)**, and **Amity University (236)**.

3. The **Indian Institute of Technology (IIT-Kharagpur) ranks 195** in the latest Employability ranking by THE.

4. **Amity University secured rank 1 among the private universities in India** in terms of employability ranking. The institute secured **236th spot** in the world.

5. **GEURS 2020**, **released by the Times Higher Education and French HR Consultancy group 'Emerging'**, is based on 1,08 225 votes from 9,000 operational and international managers in **22 countries**. They voted to rate the **employability performance** of 6,000 international institutions.

6. Education Minister Ramesh Pokhriyal 'Nishank' congratulated institutions, faculty, and students for the "outstanding achievement."

7. Universities from the USA -- **California Institute of Technology**, the **Massachusetts Institute of Technology**, and **Harvard University** -- made it to the podium, followed by two universities from the UK -- **University of Cambridge and the University of Oxford** -- in top five.

INDIA IN GLOBAL BRIBERY RISK 2020

India is at 77th position with a score of 45 **in a global list** that **measures business bribery risks of 2020**. The **list by TRACE**, an **anti-bribery standard setting organisation**, measures business bribery risk in **194 countries, territories, and autonomous and semi-autonomous regions**. According to this year's data, North Korea, Turkmenistan, South Sudan, Venezuela and Eritrea present the highest commercial bribery risk, while **Denmark, Norway, Finland, Sweden and New Zealand present the lowest**.

What

1. **In 2019**, India's rank stood 78 positions with a score of 48 while **in 2020 the**

country was ranked 77 with a score of 45.

2. The score is based on **four factors - - business interactions with government**, **anti-bribery deterrence and enforcement**, **government and civil service transparency**, and **capacity for civil society oversight**, **including the role of the media**.

3. **India fared better than its neighbours** - Pakistan, China, Nepal and Bangladesh. Bhutan, meanwhile, secured 48th rank with a score of 37.

4. China has potentially helped to reduce opportunities for bribe demands by public officials by continuing to streamline its bureaucracy, TRACE Bribery Risk Matrix said.

5. Apart from India, Peru, Jordan, North Macedonia, Colombia and Montenegro also have a score of 45 in the matrix.

6. **Somalia moved out of the bottom ranking**, which it held from 2017 to 2019, and is now ranked 187th out of 194.

7. The **TRACE Bribery Risk Matrix** said it measures the likelihood of bribe demands in **194 jurisdictions**.

Flashback

1. **It was originally published in 2014** to meet a need in the business community for more reliable, nuanced information about the risks of commercial bribery worldwide.

2. The matrix aggregates relevant data obtained from leading public interest and international organisations, including the **United Nations**, **World Bank**, **V-Dem Institute at the University of Gothenburg** and **World Economic Forum**.

3. This data helps companies to assess the likely risk of bribe demands in each country and to design compliance and due diligence programs tailored to that risk.

ANCIENT HINDU TEMPLE DISCOVERED

A Hindu temple, believed to have been **constructed 1,300 years ago**, has been discovered by Pakistani and Italian archaeological experts at a **mountain in Swat district of northwest Pakistan**. The discovery was made during an **excavation at Barikot Ghundai**. Announcing the discovery on 19 November 2020, **Fazle Khaliq of Khyber Pakhtunkhwa Department of Archaeology** said that the temple discovered is of **God Vishnu**. It was built by the Hindus 1,300 years ago during the **Hindu Shahi period**.

ANCIENT TEMPLE GETS BACK STOLEN IDOLS

The ancient **Rajagopalaswamy temple at Ananthamangalam in Nagapattinam district** got back **three of its idols stolen 42 years ago**. The idols, which were **recovered in London**, reached the temple on 21 November 2020 from Chennai. **In 1978**, **four bronze idols** - that of **Lord Rama**, **Sita**, **Lakshmana**, and **Hanuman belonging to this 15th-century temple** were stolen. Prayer police had registered a case and even arrested three people, but the idols couldn't be traced.

INTERNATIONAL

NEW GLOBAL INDEX AT G20 SUMMIT

The Prime Minister on 21 November 2020 virtually attended the **15th G20 Summit chaired by Saudi Arabia**. The **theme** of this Summit is -- "**Realising the opportunities of the 21st Century for all**".

What

1. The Prime Minister called for a **new Global Index for the post-Covid World** that comprises **four key elements** – **creation of a vast talent pool**; **ensuring that technology reaches all segments of the society**; **transparency in systems of governance**; and **dealing with the planet with a spirit of trusteeship**.

2. Noting that '**Work from Anywhere**' is a new normal in the post-Covid world, the Prime Minister also suggested creation of a G20 Virtual Secretariat as a follow up and documentation repository.

3. The agenda of the Summit is spread out over two days with two sessions focused on overcoming the pandemic, economic recovery and restoring jobs, and building an inclusive, sustainable and resilient future.

4. The PM also offered "**India's IT prowess to develop digital facilities for the efficient functioning of G20**".

5. The G20 Summit this year is being **hosted by Saudi Arabia on November 21-22**, on the theme '**Realizing Opportunities of 21st Century for All**', where leaders of the 20 biggest world economies (G20) are discussing how to deal with COVID-19's economic fallout and chart a recovery course.

6. Also on the agenda are purchases and **global distribution of vaccines, drugs, and tests for low-income countries** that cannot afford such expenses themselves.

OECD MAP 2019 AWARD

Indo-Japan cooperation has **won** the **Organisation for Economic Co-operation and Development (OECD) Mutual Agreement Procedure 2019 Award** for highest agreement ratio for a **pair of jurisdictions for transfer pricing cases**, said finance ministry sources. The **Award to India-Japan Mutual Agreement Procedure (MAP)** cooperation demonstrates **India's commitment to provide tax certainty** and **efficacious dispute resolution mechanism** for the Japanese companies doing business in India.

CHINA'S MOON-SAMPLE MISSION

China on 24 November 2020 successfully launched **its maiden unmanned spacecraft to collect samples from the lunar surface and return to earth**. It is China's first attempt **to retrieve materials from an extra-terrestrial body** which is expected to **last more than 20 days**. The **Chang'e-5 lunar probe** was successfully launched from the **Wenchang Spacecraft Launch Site in the southern island province of Hainan**. The spacecraft was launched by a Long March-5 rocket.

What

1. **Chang'e-5 is one of the most complicated and challenging missions** in China's aerospace history, as well as the **world's first moon-sample mission in more than**

40 years.

2. The **8-tonne spacecraft has four independent** but interactive components. This includes **one to stay in lunar orbit as a docking station**, one to go down to the moon's surface and drill for samples, **one to take the material back to the dock station** and **another to bring the samples back to Earth**.

3. The **landing site is chosen because the region has a young geological age**, younger than the sampling areas of the United States and the Soviet Union 40 years ago.

EXERCISE SIMBEX-20

The **Indian Navy host the 27th edition** of the **India-Singapore bilateral maritime exercise SIMBEX-20** from 23 November 2020 to 25 November 2020 in the **Andaman sea**. The **2020 edition of SIMBEX** witnessed participation by Indian Navy ships including **destroyer Rana with integral Chetak helicopter** and indigenously built **corvettes Kamorta and Karmuk**, the Navy said.

What

1. The **SIMBEX series of exercises between the Indian Navy and the RSN** have been **conducted annually since 1994** and they are aimed at enhancing mutual interoperability and imbibing best practices from each other.

2. The 2020 exercise is being conducted as a '**non-contact**, at sea only' exercise in view of the Covid-19 pandemic.

3. **SIMBEX-20** witnessed the two friendly navies participate in an advanced surface, **anti-air warfare and anti-submarine warfare exercises** including weapon firings, over three days of intensive joint operations at sea.

4. SIMBEX series of exercises exemplify the **high level of coordination and convergence of views between India and Singapore**, particularly in the maritime domain, towards enhancing the overall maritime security in the region and highlight their commitment to a rules-based international order.

OPEN SKIES TRANSPARENCY PACT WITHDRAWAL

Six months after US President Donald Trump announced his administration's **decision to withdraw from the Open Skies accord**, the United States on 22 November 2020 officially pulled out of the agreement. The **treaty provides for inspection flights over member countries' territories** to monitor military activities. US officials claim that **Russia violated the Open Skies treaty** by blocking surveillance flights around certain areas, including the Russian enclave of Kaliningrad and the border with Georgia.

What

1. On May 22, US Secretary of State Mike Pompeo said in a written statement that **his country's decision to exit the agreement would enter into force in six months** — on November 22.

2. The **Treaty on Open Skies was signed in March 1992 in Helsinki** by **23 member** nations of the **Organization for Security and Cooperation in Europe (OSCE)**.

3. It now has 33 members, with Russia ratifying it on May 26, 2001.

4.   After coming to power, President Trump pulled out the US from several international treaties, including the **2016 Trans-Pacific Partnership agreement**, and the **2015 Paris Climate Change deal**.

ECONOMY

RBI SETS UP RBIH

The **Reserve Bank of India (RBI)** has set up an **Innovation Hub for the financial sector** and appointed **Senapathy (Kris) Gopalakrishnan**, co-founder and former co-chairman of Infosys, as the **chairperson of the governing council** for the entity. The central bank had said in its August monetary policy that it was going to set up a **Reserve Bank Innovation Hub (RBIH)** to promote **innovation across the financial sector** by leveraging on technology and creating an environment which would facilitate and foster innovation.

Aims of RBIH

1.   The **aim of the RBIH** is **to create an eco-system** that would **focus on promoting access to financial services and products**. This will also **promote financial inclusion**.

2.   **RBIH will collaborate with financial sector institutions**, technology industry and academic institutions and coordinate efforts for exchange of ideas and development of prototypes related to financial innovations.

3.   It **would develop internal infrastructure** to promote fintech research and facilitate engagement with innovators and start-ups.

4.   The **RBIH would be guided and managed by the governing council led by Gopalakrishnan**. The CEO is yet to be appointed.

IFSCA NOTIFIES GIC REGULATIONS

The **International Financial Services Centres Authority (IFSCA)** has enabled the setting up and functioning of **global in-house centres (GIC)** in IFSCs by **notifying its GIC regulations** on 18 November 2020. The move will enable **multinational corporations to set up GICs**, service delivery operators or subsidiaries that are **usually located in low-cost geographies**, in the IFSC established in GIFT City in Gujarat.

Under the regulation

1.   Under the regulations, **GICs set up in an IFSC will only be allowed to serve non-resident entities** while only supervisory personnel may be relocated from within India to work in the GIC in an IFSC.

2.   Further, **these GICs will only be permitted to deal in freely convertible foreign currency** apart from maintaining an account in Indian currency for its administrative expenses.

3.   The subsidiaries will be permitted to function in branch mode to its parent firm, apart from any other mode specified by the authority.

4.   Earlier in October, **the government had notified GICs as financial services at IFSCs** in a move to incentivise banks, insurance firms, brokerages and financial intermediaries to set up subsidiaries there.

5. In order to be eligible for a GIC registration, **the entity shall have to exclusively cater to its financial services group** wherein the entities served must be located in **Financial Action Task Force compliant jurisdictions**.

6. The government envisages **GIFT City as a global financial hub** along the lines of established global financial centres like **London, Hong Kong, Dubai and Singapore**.

LVB BECAME DBS INDIA

Tamil Nadu-based **Lakshmi Vilas Bank (LVB)** with pre-independence lineage on 27 November 2020 **lost its identity after its merger with the Indian subsidiary of Singapore's DBS Bank**. The **debt-ridden 94-year old bank's fate was sealed** with the Union Cabinet headed by Prime Minister Narendra Modi approving the Scheme of Amalagamation on 25 November 2020.

What

1. The **RBI had superseded LVB's board on November 17** after the private sector lender was placed under a 30-day moratorium restricting cash withdrawals at Rs 25,000 per depositor.

2. The RBI simultaneously placed in public domain a draft scheme of amalgamation of LVB with DBIL.

3. **Started by a group of seven businessmen of Karur in Tamil Nadu** under the leadership of **V S N Ramalinga Chettiar in 1926**, LVB has 566 branches and 973 ATMs spread across 19 states and Union Territories.

4. With non-performing assets (NPAs) soaring, the bank was put under the **prompt corrective action framework of the RBI in September 2019**.

5. **LVB is the second private sector bank after Yes Bank** that has run into rough weather this year.

6. In March, capital-starved Yes Bank was placed under a moratorium.

7. The government rescued Yes Bank by asking State Bank of India (SBI) to infuse Rs 7,250 crore and take 45 per cent stake in the lender.

ATMANIRBHAR BHARAT 3.0

Prime Minister led Union Cabinet on 25 November 2020 approved equity infusion of Rs 6,000 crores in **Debt Platform of National Investment and Infrastructure Fund (NIIF)**. Finance Minister Nirmala Sitharaman had earlier proposed this investment while announcing the **Atmanirbhar Bharat 3.0 package**. The cabinet further said that NIIF will take all necessary steps to use the equity investments from **domestic and global pension funds**, and **sovereign wealth funds** expeditiously over two financial years — 2020-21 and 2021-22.

What

1. The **NIIF Strategic Opportunities Fund** has set up a **Debt Platform comprising** an **NBFC Infra Debt Fund and an NBFC Infra Finance Company**.

2. With the fresh infusion of equity by the government, besides the equity already infused by **NIIF Strategic Opportunities Fund** and the private sector, the debt platform is expected to raise enough resources to extend debt support of **Rs 1.1 lakh crore to projects by 2025**.

3. In another major announcement, the cabinet also approved the FDI proposal for acquisition of 12.32 per cent of the equity share capital of M/s ATC **Telecom Infrastructure Private Limited by M/s ATC Asia Pacific PTE Limited**, as a result of the exercise of a put option by **M/s Tata Tele Services Limited (TTSL)** and **Tata Sons Private Limited (TSPL)**.

4. The move is expected to lead to a **foreign direct investment inflow of Rs 2,480.92 crore** and therefore, the cumulative FDI of M/s ATC Asia Pacific PTE Limited into ATC Telecom Infrastructure Private Limited (ATC India) will be Rs 5,417.2 crore in financial years 2018-19 to 2020-21.

5. The company has existing **FDI approval up to 86.36 per cent**, and with this approval, it will rise to 98.68 per cent.

6. It is to be noted that FDI up to 100 per cent is allowed in telecom services sector, out of which, 49 per cent under automatic route and beyond 49 per cent through government route is allowed.

SCIENCE AND TECHNOLOGY

EVIN FOR COVID-19 VACCINES

Prime Minister, on 24 November 2020, held a video conference **with heads of all the states and Union territories** to discuss **their preparedness on Covid-19 vaccination programme in India**, expected to take place early next year, and also sought their suggestions on its priority beneficiaries. During the conference, it was informed that **the government is using eVIN – Electronic Vaccine Intelligence Network** in association with the **United Nations Development Program (UNDP)** to identify primary beneficiaries and vaccine distribution networks.

What is eVIN?

1. **Electronic Vaccine Intelligence Network** is an **indigenously developed technology** that **digitises vaccine stocks** and **monitors the temperature of the cold chain** through a smartphone application.

2. The **innovative eVIN was first launched across 12 states in 2015** to support better vaccine logistics management at cold chain points.

3. **eVIN supports the central government's Universal Immunization Programme** by providing real-time information on vaccine stocks and flows, and storage temperatures across all cold chain points across states and UTs.

4. The Centre has begun its preparations for introduction of **Covid-19 vaccine** and a **National Expert Group on Vaccine Administration for Covid-19 (NEGVAC)** has been formed as the highest group that will guide the strategies for vaccine introduction.

5. It is anticipated that initially the supply of the vaccine will be limited in view of huge demand.

6. Hence, **prioritization of population** will be done based on risk assessment for vaccination and subsequently other groups will be included for vaccination.

PARAM AMBAR

The **Indian Space Research Organisation (ISRO)** recently **strengthened its supercomputing capacity** after adding a 1.65-Petaflops **PARAM Ambar** to its network. **PARAM Ambar (Advanced Machine for Basic Atmospheric Research)** offers high throughput storage of **2 Petabytes and archival capacity of 1 Petabytes**. Inaugurated by ISRO chairman K Sivan recently, PARAM Ambar is one of the space agency's **largest operational computational facilities**.

About PARAM Ambar

1. Developed by Pune-headquartered **Centre for Development of Advanced Computing (C-DAC)**, the supercomputer **will serve disaster management agencies in a big way**.

2. It will also be used for **climate modelling**, carrying out research related to **atmospheric and oceanic processes**, and for **real-time weather forecasting**.

Ambar will also be used for:

1. ISRO's monitoring networks **dedicated for prediction of heavy rainfall evidences**

2. Air quality

3. Prediction of genesis

4. Occurrence and intensification of deep convections or cloud bursts

5. Assimilation of satellite radiances in atmospheric and oceanic models

6. **Centennial scale climate modelling**, among other functions.

SENTINEL-6 SATELLITE LAUNCHED

The **Copernicus Sentinel-6 Michael Freilich satellite**, designed **to monitor oceans**, was launched from the Vandenberg Air Force base in California aboard a **SpaceX Falcon 9 rocket** on 21 November 2020. This is a **part of the next mission dedicated to measuring changes in the global sea level**. Other satellites that have been launched since 1992 to track changes in the oceans on a global scale include the **TOPEX/Poseidon**, **Jason-1** and **OSTN/Jason-2**, among others. The **Sentinel-6 Michael Freilich satellite** has been **named after Dr. Michael Freilich**, who was the Director of NASA's Earth Science Division from 2006-2019 and passed away in August this year.

What is the mission?

1. The mission, called the **Jason Continuity of Service (Jason-CS) mission**, is designed to **measure the height of the ocean**, which is a key component in understanding how the Earth's climate is changing.

2. The **spacecraft consists of two satellites**, one of them launched on 21 November 2020, and the other, called **Sentinel-6B**, to be **launched in 2025**.

3. It has been **developed jointly by the European Space Agency (ESA)**, **NASA**, **European Organisation for the Exploitation of Meteorological Satellites (Eumetsat)**, the **USA's National Oceanic and Atmospheric Administration (NOAA)** and the EU, with contributions from **France's National Centre for Space Studies (CNES)**.

4. According to NASA, the satellite will ensure the continuity of sea-level observations into the fourth decade and **will provide measurements of global sea-level rise**.

5. **Since 1992**, **high-precision satellite altimeters** have helped scientists understand **how the ocean stores and distributes heat, water and carbon** in the

climate system.

6. Essentially, **the satellite will send pulses to the Earth's surface** and **measure how long they take to return to it**, which will help scientists measure the sea surface height.

7. It will also measure **water vapour** along this path and find its position using GPS and ground-based lasers.

FREE-SPACE OPTICAL COMMUNICATION SYSTEM

A research team led by **IIT Guwahati** has developed a **novel free-space optical communication system** for information transfer. In **free-space communication**, data in the form of **voice, text or image** is transmitted using light wirelessly rather than through **optical fibres** and it represents the next generation of communications technology. The past couple of decades have seen phenomenal developments in **free-space communication**.

What

1. **Most free-space communication systems** developed so far all over the world use a **type of light beam** called the **vortex beam to encode the data**.

2. The problem in the use of a **vortex beam** is that **it can be distorted by turbulence** that may occur in the medium of propagation.

3. In effect, data transmitted wirelessly using **light/laser beams**, can become corrupted when transmitted through atmospheric turbulence such as wind.

4. To overcome this problem, the IIT Guwahati researchers have, for the **first time, used orthogonal spatial light modes** called **Zernike modes** to encode the data and to transmit the same robustly in the form of the phase profile of a laser beam.

5. At the point of reception, the laser beam with encoded user information is sensed by a specially designed **wavefront sensor** that decodes the user information.

INDIAN SCIENTISTS JOINED TEAM HALO

Under an UN initiative, **over 100 scientists have joined** hands **to tackle the issue of misinformation around Covid-19 vaccines** and build confidence by busting myths and sharing information on the safety and effectiveness of vaccines **via social media**. The UN has collaborated with **The Vaccine Confidence Project** at the University of London to undertake **Team Halo**, an **initiative which aims to counter the misinformation around Covid-19 vaccines**. Globally, **the initiative is supported by scientists** who are involved in the race of coronavirus vaccine development across the **world's top institutes** like **Imperial College London**, **Harvard Medical School**, **University of Sao Paulo**, **University of Barcelona** and many others.

In India

1. **In India**, **over 22 scientists have joined Team Halo** from renowned institutes such as **Institute of Medical Sciences and Sum Hospital**; **PGIMER**, **Nizams Institute of Medical Sciences**, **IIT Indore**, **Christian Medical College**, **SRM Research Institute**, and **Deep Children's Hospital and Research Centre**.

2. **Team Halo India** will also **allow scientists to respond to questions from the public** and **directly counter vaccine misinformation** and rumours spreading in parts of the internet.

3. Besides India, **Team Halo aims to highlight the work undertaken by scientists** in the UK, the US, South Africa, Qatar, UAE, France, Spain, Peru, Canada and Brazil and create a platform for communication between the scientists working on Covid-19 vaccines and the citizens of these countries.

VENUS MISSION ATTRACTS INTERNATIONAL PROPOSALS

The **Indian Space Research Organisation (ISRO)** has **short-listed 20 space-based experiment proposals**, including from **France**, for its **proposed Venus orbiter mission 'Shukrayaan'** to study the planet for **more than four years**. These include "**collaborative contributions**" from **Russia, France, Sweden and Germany**, sources in the Bengaluru-headquartered space agency said. ISRO was earlier eyeing **June, 2023 for the country's first mission to Venus**.

What

1. It was noted that the **optimal launch window** (when Venus is closest to the Earth) comes about every **19 months**.

2. Of the Indian and international payload proposals it received in response to an announcement of opportunity for novel space-based experiments to study Venus, ISRO has short- listed 20.

3. These 20 payload (scientific instruments) proposals, including collaborative contributions from Russia, France, Sweden and Germany, are currently under review", the ISRO official said.

4. The one already selected, according to French space agency CNES, is France's **VIRAL instrument (Venus Infrared Atmospheric Gas Linker)** co-developed with the Russian space agency Roscosmos, and the **LATMOS atmospheres**, environments and **space observations laboratory** attached to the French national scientific research centre CNRS.

5. According to ISRO, scientific objectives of **ISRO's Venus mission are investigation of the surface processes** and shallow subsurface stratigraphy; and solar wind interaction with Venusian Ionosphere, and studying the structure, composition and dynamics of the atmosphere.

6. **Venus is often described as the "twin sister" of the Earth** because of the similarities in size, mass, density, bulk composition and gravity.

ANCIENT MEGAFLOODS ON MARS

Giant flash floods once washed through **Gale Crater on Mars' equator** around four billion years ago, according to a study which **hints at the possibility that life may have existed** on the Red Planet. The research, published recently in the journal Scientific Reports, assessed data collected by **NASA's Curiosity rover** -- **launched in November 2011** -- and found that "**gigantic flash floods**," likely touched off by the heat of a meteoritic impact, unleashed the ice stored on the Martian surface. Based on the analysis, scientists including those from Cornell University in the US said **these floods of "unimaginable magnitude"** set up gigantic ripples that are tell-tale geologic structures familiar to scientists on the Earth.

MISS COLLISION OF CARTOSAT-2F

India's 700 kg cartography satellite Cartosat-2F and **Russia's 450 kg Kanopus-V satellite** had a **near miss in outer space** on 27 November 2020 morning, said Roscosmos,

Russia's state space corporation. Both the satellites were as **close as 224 metres**. Roscosmos said that **as per the TsNIIMash main information and analytical centre** of the Warning Automated System of Hazardous Situations near the earth space-part of Roscosmos, **Cartosat-2F**, an **active Indian satellite**, dangerously approached **Russia's Kanopus-V satellite**. Both the spacecraft are **designed for Earth's remote sensing**.

MISCELLANEOUS

'BLUE TIDE' SPOTTED

Waves hitting Maharashtra's shoreline, including Juhu Beach, **have been a shimmering shade of blue over the past few nights**. The phenomenon called '**blue tide**', when **bioluminescent marine life makes the sea appear a deep shade of blue**, was observed across several coastal areas this year. The spectacle occurs when **phytoplankton (microscopic marine plants)**, commonly **known as dinoflagellates**, produce light through chemical reactions in proteins, said researchers. **Waves disturb these unicellular microorganisms** and **make them release blue light**.

What

1. The sight was observed at Juhu on 25 November 2020 night, and at **Devgad and Velas beaches in Ratnagiri**.

2. **Across India's coast**, the spectacle has been witnessed from November to January and, in some instances, even in March.

3. Recently, **the 'blue tide' was witnessed along Dakshina Kannada-Udupi coast**. The sight has been observed in many beaches across the world, such as **Maldives, Vietnam, Indonesia, USA, and Australia**.

4. **Bioluminescence was first reported from Mumbai in November 2016** when it was spotted for two weeks.

5. According to marine experts, **light pollution in Mumbai, especially around beaches, could be a major reason** for this phenomenon not being seen or reported as the glow is visible in the dark.

6. Experts point out that **high temperature**, **high quantity of organic material**, such as sewage and effluents and increased turbulence/wave action of the water, could be one of the reasons behind the blue tide.

MORE STARLINK SATELLITES LAUNCHED

Elon Musk-run SpaceX on 25 November 2020 launched another successful **mission carrying 60 more Starlink satellites** onboard a **Falcon 9 rocket into low-Earth orbit** that will join the rest in becoming affordable Internet. The **reusable Falcon 9 rocket** made a record-breaking seventh trip this time. This was **SpaceX's 16th Starlink mission** and the company has to date launched nearly 1,000 small satellites for its constellation.

What

1. SpaceX recently presented the **Federal Communications Commission (FCC) Starlink internet performance tests**, showing it was capable of download speeds of between 102Mbps to 103Mbps, upload speeds of **40.5Mbps to not quite 42Mbps**, and a **latency of 18 milliseconds to 19 milliseconds**.

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2. Once **these satellites reach their target position**, we will be able to roll out a fairly wide public beta in the northern US and hopefully southern Canada.

3. It is expected that there will be gigabit speeds on offer, meaning up to **1Gbps Internet speeds**, with a fairly low latency of up to 25ms.

4. **Starlink plans to offer these Internet services for around $80 per month**, which is priced at par if not lower than similar speed broadband plans in most countries, including India.

5. The company is geared up for a public beta of the affordable satellite broadband service.

'MISSION COVID SURAKSHA' LAUNCHED

The government has launched '**Mission Covid Suraksha**' to help **accelerate the development of approximately 5-6 vaccine candidates** and ensure that these are brought **closer to licensure** and **introduction in the market**, the **Department of Biotechnology** said. The **mission envisages Covid-19 vaccine development with end-to-end focus** from preclinical through clinical development and manufacturing and regulatory facilitation, the DBT said. Earlier this month, the government had announced a package of Rs 900 crore for vaccines.

What

1. **Government of India (GOI)** announced the **third stimulus package of Rs 900 crore for the Mission Covid Suraksha**- the **Indian Covid-19 Vaccine Development Mission**.

2. This grant will be provided to the Department of Biotechnology (DBT) for research and development of Indian Covid-19 vaccines.

3. This will **help accelerate development of approximately five-six vaccine candidates** and ensure that these are brought closer to licensure and introduction in the market for consideration of regulatory authorities for introduction in public health systems to combat further spread of Covid infection.

4. A **total of 10 vaccine candidates have been supported by the DBT so far** in both academia and industry.

5. As on date, **five vaccine candidates are in human trials**, including the **Russian Vaccine Sputnik-V**, with at least three more in advanced stages of pre-clinical to enter human trials shortly.

LILAVATI AWARD FOR WOMEN EMPOWERMENT

The **All India Council for Technical Education (AICTE)** on 17 November 2020 launched the **Lilavati Award** to acknowledge efforts undertaken to empower women in the country. The award was **launched by the Minister of Education**, **Ramesh Pokhriyal Nishank** via a virtual conference. AICTE said the **awards are aimed to award the efforts taken in the field of women's development** and create '**equality and fairness**' for women in all spheres of their lives.

What

1. The **award will be given to individuals and institutes affiliated with AICTE** on their contribution in the **area of women empowerment**.

2. The award will be **given in sub-themes**, namely, **women's health**, **literacy**, **self-**

defense, **legal awareness**, **self-defense**, and **sanitation and hygiene**.

3. The **aim of the new awards is to create awareness** and **promote efforts in the field of women empowerment**.

4. The applications can be sent in form of a short video clip explaining the work done in any sub-themes. The entries will be evaluated by a committee.

5. In each sub-category, the top three winners will be awarded with certificates as well as prize money.

INDIAN CITIES IN GLOBAL SMART CITIES ALLIANCE

Bengaluru, Faridabad, Indore and Hyderabad figure among the **36 cities** across the world, have agreed to pioneer a roadmap for safely **adopting new technology** as part of the **G20 Global Smart Cities Alliance**. The **World Economic Forum (WEF)** said **Covid-19 is accelerating adoption of new technologies** by cities as governments struggle to manage the growing pandemic with constrained resources.

What

1. The **WEF has selected 36 cities from 22 countries and six continents** to pioneer a **new global policy roadmap for smart cities** developed by the **G20 Global Smart Cities Alliance**.

2. Apart from **Bengaluru, Faridabad, Indore and Hyderabad**, cities such as **London, Moscow, Toronto, Brasilia, Dubai and Melbourne have also been selected**.

3. The "**pioneer cities**" launched their activities on 17 November 2020 at a global event broadcast by the Smart City Expo World Congress, the world's premier smart cities event.

4. The alliance has recruited a group of **36 "pioneer cities"** that will collaborate with global experts to enhance their city policies in areas ranging from privacy protection and cyber security to better services for differently-abled people and better broadband coverage.

5. The roadmap is designed to give cities the procedures, laws and regulations they need to use new technology responsibly.

6. The **initiative originated in Japan last year from WEF's Centre** for the **Fourth Industrial Revolution**.

7. The **cities will adopt policies for privacy protection**, better broadband coverage, accountability for cyber security, increased openness of city data, and better accessibility to digital city services for disabled and elderly people

VATAYAN LIFETIME ACHIEVEMENT AWARD

Education Minister **Ramesh Pokhriyal** on 21 November 2020 conferred with the **Vatayan Lifetime Achievement Award** for **his exemplary contribution in the field of literature**. The minister highlighted the role played by language in keeping the **unity in a diverse country India**. **Culture and language are linked with each other**, as the language becomes stronger, so does the culture and civilization. Similarly, the writing also strengthens the civilisation and culture of the country. Further, the minister said that literature is the cultural, spiritual, educational heritage which invisibly strengthens the country.

What

1. **Nishank has earlier received several awards** in the **field of literature** and administration including **Sahitya Bharati award** by the then Prime Minister Atal Bihari Vajpayee, **Sahitya Gaurav Samman** by former president APJ Abdul Kalam, **Bharat Gaurav Samman**, **Good Governance award** by Dubai government, **outstanding achievement award** by Global Organisation of Person of Indian Origin by Mauritius, awarded in Ukraine in the area of environmental protection, Himal Gaurav Samman by Nepal, among others.

2. **Vatayan International Award** is given to honour poets, writers and artists for their exemplary work in their respective fields.

3. Earlier many eminent personalities like **Prasoon Joshi, Javed Akhtar** have been awarded for their literary contribution.

RABINDRANATH TAGORE LITERARY PRIZE

Author **Amitav Ghosh's Gun Island** and **Raj Kamal Jha's The City and the Sea** are among the books contending for this year's **Rabindranath Tagore Literary prize**, founder of the award, Peter Bundalo announced on 27 November 2020. The **Rabindranath Tagore Literary Prize was founded in 2018** by US-based publisher Bundalo as a platform for world peace, literature, art, education and human rights.

NAFED'S FPOS PROGRAMME UNVEILED

Agriculture Minister Narendra Singh Tomar on 26 November 2020 **inaugurated cooperative Nafed's programme** for helping **set up farmer producers' organisations (FPOs)** for **beekeepers and honey collectors in five states**. **Nafed is one of the four implementing agencies** of the government for creation of 10,000 FPOs under a central scheme, which aims to make agriculture self-reliant. The other agencies are **Small Farmers' Agri-Business Consortium, NABARD** and **National Cooperative Development Corporation**. Under the programme, **Nafed will help in setting up FPOs** for beekeepers in **five states** -- **West Bengal**, **Bihar**, **Madhya Pradesh**, **Uttar Pradesh** and **Rajasthan**.