

# My Notes....

## NATIONAL

### CREATION OF PMSSN APPROVED

The **Union Cabinet** has approved the **Pradhan Mantri Swasthya Suraksha Nidhi (PMSSN)** as a **single non-lapsable reserve fund** for share of health from the proceeds of **health and education cess** levied under **Finance Act, 2007**, an official statement said. The **salient feature of PMSSN** is that it is a **non-lapsable reserve fund for health in the public account** and proceeds of share of health in the health and education cess will be credited into PMSSN.

#### What

- The accruals into the PMSSN will be utilised for the **flagship schemes of the health ministry** such as **Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**, **Ayushman Bharat - Health and Wellness Centres (AB-HWCs)**, **National Health Mission**, **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)**, **Emergency and disaster preparedness and responses during health emergencies and any future programme/scheme that targets to achieve progress towards SDGs and the targets set out in the National Health Policy (NHP) 2017.**
- The administration and maintenance of the PMSSN are **entrusted to health ministry** and in any financial year, the expenditure on such schemes of the **MoHFW would be initially incurred from the PMSSN** and thereafter, from gross budgetary support (GBS).
- The major benefit will be **enhanced access to universal and affordable health care** through availability of earmarked resources, while ensuring that the **amount does not lapse at the end of financial year.**



**Cabinet approves PRADHAN MANTRI SWASTHYA SURAKSHA NIDHI (PMSSN)**

**Salient Features:**

- Non-lapsable reserve fund for health in public account
- Proceeds of share of health in the Health and Education Cess will be credited into PMSSN

Accruals into the PMSSN will be utilized for flagship schemes:

- Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana
- Ayushman Bharat - Health and Wellness Centres
- National Health Mission
- Pradhan Mantri Swasthya Suraksha Yojana
- Emergency & disaster preparedness and responses during health emergencies
- Any future programme/scheme that targets to achieve progress towards SDGs

Administration and maintenance of PMSSN is entrusted to Ministry of Health & Family Welfare

In any financial year, the expenditure on such schemes would be initially incurred from the PMSSN and thereafter, from Gross Budgetary Support

- In the **budget speech 2018**, the finance minister while announcing **Ayushman Bharat Scheme**, also told about replacement of **existing 3 per cent education cess by 4 per cent health and education cess**.

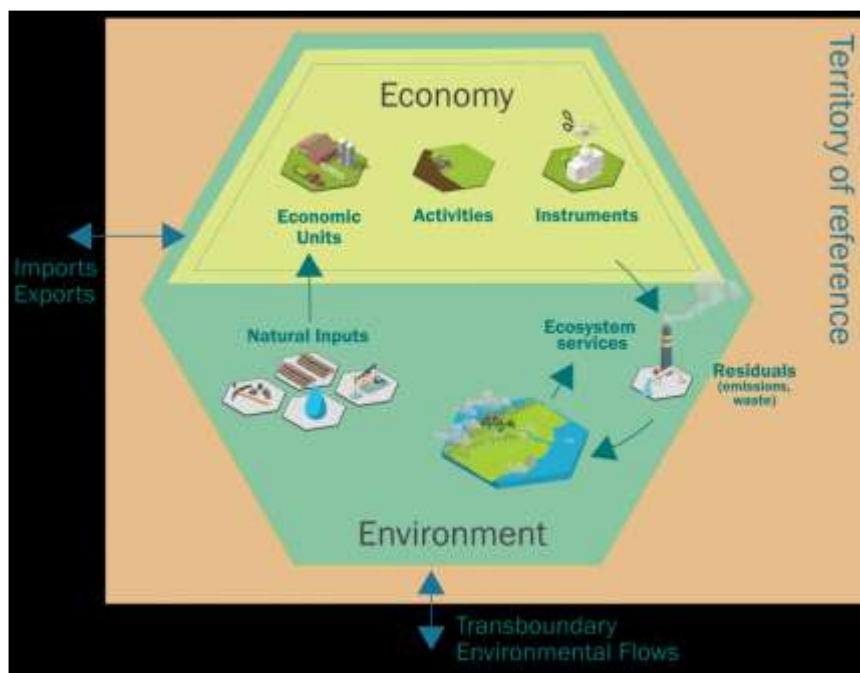
## INDIA IN FAVOUR OF SEEA-EA

**UN Statistical Commission** on 2 March 2021 initiated a **new accounting framework** which, if adopted, will push nations to incorporate **sustainable development in their economic planning** and policy decision-making. The Commission will discuss the **new framework** and **move towards the process of adoption**, provided there are no objections within a 72-hour period starting on 5 March 2021.

### What

- India** is, in fact, **one of the 90 countries** that have been **in favour of** adopting the **System of Environmental Economic Accounting-Ecosystem Accounting (SEEA-EA)** after incorporating it in its domestic statistical framework **to combat environmental degradation**.

- The move to adopt ecosystem accounting as statistical standard by the UN body comes at a time when countries are gearing up for two crucial conferences - **COP15 on biodiversity in Kunming, China** and the **UN climate change conference (COP26)** in **Glasgow, UK** - later this year.



- Urging nations to reflect **“nature’s true value”** in their policies, plans and economic systems, the UN Secretary-General António Guterres said the global economy has grown nearly fivefold in the past five decades, but at massive cost to the global environment.
- The new framework would go beyond the commonly used **statistic of gross domestic product (GDP)** and would ensure that natural capital—the contributions of forests, oceans and other ecosystems—are recognized in economic reporting.
- At present, the **country’s wealth does not reflect the dependency of the economy on nature**, nor its impacts on nature, such as the deterioration of air quality or the loss of a forest.

6. Noting that **more than half of global GDP depends on nature**, but globally, the natural capital has declined 40% in just over two decades, globally, countries now spend some US\$ 4-6 trillion dollars a year on subsidies that damage the environment.

## EASE OF LIVING INDEX 2020

The **ministry of housing and urban affairs** on 4 March 2021 released the **rankings of cities with a population of more than a million** and a **separate ranking for cities with population of less than a million**. In the **million plus cities, Bengaluru, Pune and Ahmedabad emerged** as the **most liveable cities of India**. These were followed by **Chennai, Surat, Navi Mumbai, Coimbatore, Vadodara, Indore** and **Greater Mumbai**.

### What

1. **Shimla is the most liveable city** on the **Ease of Living Index of cities** with less than 1 million populations.
2. **Shimla is followed by Bhubaneswar, Silvassa, Kakinada, Salem, Vellore, Gandhinagar, Gurugram, Davangere and Tiruchirapalli.**
3. **111 cities participated in the assessment exercise** that was conducted in year 2020.
4. The **Ease of Living Index (EoLI) is an assessment tool** that **evaluates the quality of life** and the **impact of various initiatives for urban development**.
5. It provides a comprehensive understanding of participating cities across India based on **quality of life, economic-ability of a city, and its sustainability and resilience**.
6. One of the biggest highlights of this exercise has been the **citizen perception survey**, which was included as a **parameter in Ease of Living Index**.

## FIRST EVER MUNICIPAL PERFORMANCE INDEX REPORT

**India's cleanest city Indore** has also **emerged as the best performing municipality** among all **million-plus municipalities** in the **first-ever such ranking** by the Centre. **New Delhi Municipal Council (NDMC) has been ranked as the best** among municipalities that have **less than one million populations**. The **Municipal Performance Index report ranking 114 civic bodies** was released by the Union housing and urban affairs minister on 4 March 2021. The ranking has been done on **parameters of service delivery, planning, financial systems, and governance practices**.

### According to the report

1. **Besides Indore, the other nine best performing municipalities** having more than **one million populations** are **Surat, Bhopal, Pimpri Chinchwad, Pune, Ahmedabad, Raipur, Greater Mumbai, Visakhapatnam and Vadodara**.
2. The South Delhi, East Delhi and North Delhi Municipal Corporations have been ranked at 28, 42 and 48 respectively among the 51 big civic bodies that were assessed.
3. But Ghaziabad, Meerut and Faridabad municipal corporations fared better occupying the 20th, 29th and 40th rank respectively.

- Among the small municipal bodies, besides NDMC the other 9 top performers are Tirupati, Gandhinagar, Karnal, Salem, Tiruppur, Bilaspur, Udaipur, Jhansi and Tirunelveli.

## SC ISSUES NOTICE FOR BEYOND 50% RESERVATION

The **Supreme Court** on 8 March 2021 **issued a notice** to all the states **asking them to respond** on whether **reservation could be allowed beyond 50 percent**. The apex court was **hearing a plea on validity of Maratha reservation** and said that its verdict **would have wider ramifications** and this is why other states need to be heard. The court will recommence the day-to-day hearing in this matter on 15 March.

### What

- On 9 December last year**, the apex court had said that **issues pertaining to the 2018 Maharashtra law**, granting reservation to Marathas in education and jobs, requires **“urgent hearing”** as the legislation has been stayed and the **“fruits accrued”** are not reaching to the people.
- The top court had also issued notice to the attorney general seeking his assistance in the matter.
- The apex court on 9 September last year, while **referring to a larger bench** the batch of pleas **challenging the validity of law**, had stayed the implementation of the legislation but made it clear that status of those who have availed of the benefits would not be disturbed.
- The **Socially and Educationally Backward Classes (SEBC) Act, 2018** was enacted to grant reservation to people of Maratha community in Maharashtra in jobs and admissions.
- The Bombay high court, while **upholding the law in June 2019**, had held that **16 per cent reservation was not justifiable** and said that **quota should not exceed 12 per cent in employment and 13 per cent in admissions**.
- According to the **102nd amendment to the Constitution**, reservation can be granted only if a **particular community** is named in the list prepared by the President.
- On 27 July last year, the **Maharashtra government had assured the top court** that it would not precede with the recruitment process to fill up the vacancies on the basis of 12 per cent Maratha reservation till September 15, except for departments, Public Health and Medical Education and Research.

## INDIA NOTIFIES USE OF E20

India 8 March 2021 **notified the use of E20**, a **blend of 20 per cent ethanol and 80 per cent petrol**, as fuel for compatible vehicles. The Ministry of Road Transport and Highways notified the **use of E20** and issued mass emission standards for the same. The draft rules were put up for objections and comments in December. The final notification was issued after considering the comments and suggestions, said the ministry.

### What

- During studies, it has been observed that **E20 decreases the Carbon Monoxide and Hydrocarbons emissions significantly**, compared with normal gasoline in two-wheelers and four-wheelers, a ministry said.

2. The compatibility of a **vehicle with E20 will be defined by the manufacturer** and will have to be displayed on the vehicle by putting a clearly visible sticker.
3. As per a report, **oil marketing companies are set to procure 283 crore litres of ethanol** from mills for **blending up to 10% with petrol** in 2020-21 (December-November).
4. This is against 167 crore, 179 crore and 150.5 crore litres in the preceding three supply years and a mere 38 crore litres in 2013-14.
5. The balance supply would be **ethanol from fermentation of whole sugarcane juice** (42.2 crore litres) and the intermediate **'B-heavy' stage molasses** (181 crore litres).

## INDIA IN ECONOMIC FREEDOM INDEX 2021

**Singapore topped the global ranking for the second year** in a row in the latest **Economic Freedom Index** published by **US conservative think-tank, The Heritage Foundation**. Singapore increased its overall score by 0.3 points to 89.7 primarily due to an **improvement in the score for government spending**. Singapore's score is well-above the regional and world averages.

### What

1. This is the **first time the index has been published since the COVID-19 pandemic** overturned lives as well as global economies and the scoring reflects to a small extent **how governments have responded to the health crisis**.
2. **184 countries were covered in the study** this time and the period of study is **July 2019 to June 2020**.
3. The **index ranks 12 indicators** from **property rights to financial freedom** under **four categories: rule of law, size of government, regulatory efficiency** and **open markets**.
4. The **small island nation of Singapore** made **improvements** or maintained its score for all 12 indicators except monetary freedom and judicial effectiveness which declined marginally, but its scores in these two indicators are still exceptionally high when compared with most other countries.

### India in Index

1. In the **2021 Index, India came in around the middle of the pack** among Asia-Pacific countries **ranking 26th out of 40 countries**, scoring 56.5 points.
2. Globally, the Foundation rates **India's economy as the 121st freest**. Although its overall score is unchanged, improvements were made in business freedom. This was offset by declines in judicial effectiveness and other scores.
3. The report commented that: "**The Indian economy remains in the mid-range of the mostly unfree category**."
4. A move toward greater economic freedom would require **substantial and broad-based reforms**.
5. In addition to taking steps to **improve fiscal health and strengthen the rule of law**, the government would need to increase financial freedom and reform the tax code, the investment regime, and the labour code.

5. The **Heritage Foundation's Index of Economic Freedom** is an annual guide published to measure the progress made in advancing economic freedom which it claims brings greater prosperity.
6. The Foundation also believes that "the ideals of economic freedom are strongly associated with healthier societies, cleaner environments, greater per capita wealth, human development, democracy, and poverty elimination."
7. Overall, **Asia-Pacific nations generally scored lower than the world average** in seven of 12 indicators: **property rights, judicial effectiveness, government integrity, monetary freedom, trade freedom, investment freedom** and financial freedom.

## INTERNATIONAL

### ‘MAITRI SETU’ BETWEEN INDIA AND BANGLADESH

Prime Minister inaugurated ‘**Maitri Setu**’ between **India and Bangladesh** on 9 March 2021 via video conferencing. The bridge ‘**Maitri Setu**’ has been **built over the Feni river** which **flows between the Indian boundary in Tripura** and Bangladesh. The name ‘**Maitri Setu**’ symbolizes **growing bilateral relations** and friendly ties between India and Bangladesh. The construction was taken up by the **National Highways and Infrastructure Development Corporation Ltd.**

#### What

1. The name ‘**Maitri Setu**’ symbolizes growing bilateral relations and **friendly ties between India and Bangladesh.**
2. The **1.9 Km long bridge joins Sabroom in India** with **Ramgarh in Bangladesh**
3. The bridge is poised to herald a **new chapter for trade** and **people-to-people movement between India and Bangladesh.**
4. With this inauguration, **Tripura is set to become the ‘Gateway of North East’** with access to Chittagong Port of Bangladesh, which is just 80 km from Sabroom.
5. PM Modi also laid the foundation stone for **setting up an Integrated Check Post at Sabroom.**
6. It will help **ease the movement of goods and passengers between the two countries** provide new market opportunities for products of North-East states and assist seamless movement of passengers to and from India and Bangladesh.

### FIRST QUAD SUMMIT

In their first summit under the **Quad framework** on 12 March 2021, **leaders of India, the US, Japan and Australia** will **deliberate on expanding cooperation** in the **Indo-Pacific region** and **focus on a coronavirus vaccine initiative** to effectively deal with the pandemic, people familiar with the matter said. They said the virtual summit is expected to **delve into pooling in individual strengths by the Quad countries** to **expedite global vaccine delivery** and explore concrete collaboration in supplying safe and affordable vaccines in the **Indo-Pacific region.**

### What

1. The **Quad vaccine initiative** will project and **reinforce India's credentials** as a reliable manufacturer and supplier of the vaccines, reaffirming the country's stature as the "**pharmacy of the world**".
2. The summit will be participated by Prime Minister Narendra Modi, US President Joe Biden, Australian PM Scott Morrison and Japanese PM Yoshihide Suga.
3. The summit is likely to **exchange views on contemporary issues** such as **post-pandemic recovery, resilient supply chains, emerging and critical technologies, maritime security, and climate change**.
4. The **four Quad member countries** have been resolving to uphold a **rules-based international order in the Indo-Pacific** amid growing Chinese assertiveness in the region.
5. **India's approach to the Indo-Pacific** was enunciated by PM in a speech at the **Shangri-La Dialogue in Singapore** in 2018.

### Flashback

1. The foreign ministers of the **Quad member nations met in Tokyo on 6 October** and reaffirmed their collective vision for a free, open and inclusive Indo-Pacific.
2. The foreign minister of the four countries held their first meeting under the **Quadrilateral or Quad framework in New York** in September 2019.
3. In November 2017, **India, Japan, the US and Australia** gave shape to the long-pending proposal of setting up the Quad to develop a **new strategy** to keep the critical sea routes in the **Indo-Pacific free of any influence**.

## BRITAIN APPROVES 'WORLD'S MOST EXPENSIVE DRUG'

The '**most expensive drug in the world**' has been **approved by the United Kingdom's National Health Service (NHS)** to **cure a rare genetic disorder**. The **one-off gene therapy Zolgensma**, manufactured by **Novartis Gene Therapies**, has a reported list price of **₹18 crore (£1.79 million) per dose**, NHS England said on 8 March 2021. It will be used for babies and young children suffering from SMA. Babies born with **severe type 1 SMA** – the most common form of the condition – have a **life expectancy of just two years**.

### What

1. **Zolgensma**, has **helped babies to reach milestones** such as breathe without a ventilator, sit up on their own and crawl and walk after a single infusion treatment, showed studies.
2. The treatment is given as a **single intravenous infusion** and **contains a replica of the missing gene SMN1**, NHS said.
3. The active **ingredient onasemnogene abeparvovec** **passes into the nerves** and restores the gene, which then produces proteins essential for nerve function and controlling muscle movement.
4. The latest data suggested that **Zolgensma can provide rapid and sustained improvement in motor function** for young children with **type 1 SMA** and prolong their lives.

5. **Spinal Muscular Atrophy is the leading genetic cause of death** among babies and young children, which is why NHS England has moved mountains to make this treatment available, while successfully negotiating hard behind the scenes to ensure a price that is fair to taxpayers.
6. The approval of the drug marked the **second medical treatment now available for youngsters with SMA, after Spinraza** became available on the NHS to eligible patients in May 2019.
7. The NHS is ready to fast-track the introduction of the **highly complex and innovative gene therapy**.

## ECONOMY

### WORLD'S FOURTH LARGEST FOREIGN RESERVES

**India's foreign-exchange reserves surpassed** Russia's to become the **world's fourth-largest**, as the **South Asian nation's central bank** continues to hoard dollars to cushion the economy against any sudden outflows. **Reserves for both countries have mostly flattened out this year** after months of rapid increase. India pulled ahead as Russian holdings declined at a faster rate in recent weeks. India's foreign currency holdings fell by \$4.3 billion to \$580.3 billion, the Reserve Bank of India said on 12 March 2021, edging out Russia's \$580.1 billion pile.

#### What

1. **China has the largest reserves**, followed by **Japan and Switzerland** on the **International Monetary Fund table**.
2. **India's reserves, enough to cover roughly 18 months of imports**, have been bolstered by a rare current-account surplus, rising inflows into the local stock market and foreign direct investment.
3. A **strong reserves position** gives foreign investors and **credit rating companies** added comfort that the government can meet its debt obligations despite a deteriorating fiscal outlook and the economy heading for its first full-year contraction in more than four decades.
4. The **RBI bought a net \$88 billion** in the spot forex market last year, central bank data show. That helped make the rupee the worst

#### What are forex reserves?

1. **Forex reserves** are external assets in the form **gold, SDRs (special drawing rights of the IMF) and foreign currency assets** (capital inflows to the capital markets, FDI and external commercial borrowings) **accumulated by India and controlled by the Reserve Bank of India**.
2. The **International Monetary Fund** says official foreign exchange reserves are held in **support of a range of objectives like supporting and maintaining confidence in the policies for monetary** and exchange rate management including the capacity to intervene in support of the national or union currency.
3. It will also limit **external vulnerability by maintaining foreign currency liquidity** to absorb shocks during times of crisis or when access to borrowing is curtailed.



performer among **Asia's major currencies last year** and **earned India a place on a U.S. Treasury watchlist** for currency manipulation.

5. A recent RBI report recommended further **strengthening of foreign-exchange reserves**, citing swings in the rupee around the time of the global taper tantrum in 2013.

## AMENDMENTS TO INSURANCE ACT CLEARED

The **Union Cabinet** on 10 March 2021 **gave its nod for amendments in the Insurance Act**, paving way for **74 per cent foreign direct investment in the sector**. Currently, the **permissible FDI limit in the life and general insurance stands at 49 per cent** with ownership and management control with Indian. The Cabinet in its meeting has approval for **amendments in the Insurance Act, 1938**.

### What

1. Finance minister **Nirmala Sitharaman in budget 2021-22** said, I propose to amend the Insurance Act, 1938 to increase the permissible FDI limit from **49 per cent to 74 per cent in insurance companies** and allow foreign ownership and control with safeguards.
2. Under the new structure, the **majority of directors on the board and key management persons would be resident Indians**, with at least 50 per cent of directors being independent directors, and specified percentage of profits being retained as a general reserve.
3. For investor protection, an **investor charter would be introduced** as a right of all financial investors across all financial products.
4. It was in 2015 **when the government hiked the FDI cap** in the insurance sector **from 26 per cent to 49 per cent**.
5. **Increase in FDI will help improve life insurance penetration in the country**. Life insurance premium as a **percentage of GDP is 3.6 per cent** in the country, way below the global average of 7.13 per cent, and in case of general insurance, it is even worse at 0.94 per cent of GDP, as against the world average of 2.88 per cent.
6. The government has **earlier allowed 100 per cent foreign direct investment in insurance intermediaries**.
7. Intermediary services include **insurance brokers, reinsurance brokers, insurance consultants**, corporate agents, third party administrators, surveyors and loss assessors.

## SCIENCE AND TECHNOLOGY

### ISRO DEVELOPS NISAR

**ISRO** has **completed the development of Synthetic Aperture Radar (SAR)** capable of producing extremely **high-resolution images for a joint earth observation satellite mission** with the US space agency NASA. **NASA-ISRO SAR (NISAR)** is a joint collaboration for a **dual-frequency L and S-band SAR for earth observation**. **NISAR will be the first**

**satellite mission** to use **two different radar frequencies** (L-band and S-band) to measure changes in our **planet's surface less than a centimetre across**, according to NASA (National Aeronautics and Space Administration).

#### What

1. **NASA** and Bengaluru-headquartered **ISRO (Indian Space Research Organisation)** signed a partnership on 30 September 2014, to **collaborate on and launch NISAR**.
2. The mission is **targeted to launch in early 2022** from ISRO's Sriharikota spaceport in **Andhra Pradesh's Nellore district**, about 100 kms north of Chennai.
3. **NASA is providing the mission's L-band SAR**, a **high-rate communication subsystem** for science data, **GPS receivers**, a **solid-state recorder** and **payload data subsystem**.
4. **ISRO is providing the spacecraft bus**, the **S-band radar**, the launch vehicle and associated launch services for the mission, whose **goal is to make global measurements of the causes and consequences of land surface** changes using advanced radar imaging.
5. The **S-band SAR payload of the NISAR satellite mission** was flagged off by the Secretary in the Department of Space and ISRO Chairman K Sivan on 4 March 2021 through virtual mode.
6. The **payload has been shipped** from ISRO's **Ahmedabad-based Space Applications Centre (SAC)** to **NASA's Jet Propulsion Laboratory (JPL)** at Pasadena in the US for integration with the **latter's L-band SAR payload**.

## SFDR TECHNOLOGY SUCCESSFUL TESTED

The **Defence Research and Development Organisation (DRDO)** on 5 March 2021 successfully conducted another test of the **Solid Fuel Ducted Ramjet (SFDR) technology**, which is crucial for the indigenous development of long range **air-to-air missiles**. All the subsystems including the ground booster motor performed as per expectation.

#### What

1. The **missile was guided to a certain altitude** to create the simulation of the release from an aircraft. After achieving the desired altitude, the **nozzle-less booster was fired**.
2. The missile, **using the SFDR technology**, accelerated to reach **multiples of the speed of sound**, also known as **Mach**. To monitor the test parameters, various telemetry and radar stations were deployed.
3. **Air-to-air missiles** which use **SFDR technology** can achieve longer ranges as they do not require oxidisers, among other reasons.
4. Pune-based DRDO facility, **High Energy Material Research Laboratory (HEMRL)**, developed the **nozzle-less booster** while two facilities in Hyderabad – the **Defence Research and Development Laboratory (DRDL)** and **Research Centre Imarat (RCI)** — were also part of the project.
5. A successful test of SFDR technology was earlier conducted in February 2019.

## THIRD SCORPENE-CLASS SUBMARINE COMMISSIONED

The **third of the potent and stealth Scorpene-class submarines – INS Karanj** was commissioned in Mumbai on 10 March 2021. The submarine was commissioned into the Indian Navy. **INS Karanj would form part of the Western Naval Command's submarine fleet** and would be another potent part of the **Indian Navy's sword arm's arsenal**.

### What

1. The two submarines of this class that are currently in service are **INS Khandari** and **INS Kalvari**, commissioned on 14 December 2017, and 28 September 2019 respectively.
2. The **fourth submarine Vela** was launched on 6 May 2019, and it has commenced the sea trials, while the **fifth submarine Vagir**, was launched on 12 November 2020 and has commenced its harbour sea trials.
3. **Vela and Vagir** are expected to be commissioned in **December 2021 and December 2022**, respectively.
4. The sixth submarine **Vagsheer** is presently in the advanced stage of outfitting.
5. The **six submarines are designed by French naval defence and energy company DCNS** and are being **manufactured by Mazagon Dock Shipbuilders Ltd (MDL)** in Mumbai.

## DRDO DEVELOPED AIP SYSTEM

**Defence Research and Development Organisation (DRDO)** has achieved an **important milestone** in the development of an **Air Independent Propulsion (AIP) System** by proving the **land-based prototype**. The plant was operated in **endurance mode** and **max power mode** as per the user requirements on 9 March 2021.

### What

1. The system is being **developed by the Naval Materials Research Laboratory (NMRL)** of DRDO **located in Maharashtra**.
2. **AIP has a force multiplier effect on the lethality of a diesel-electric submarine** as it **enhances the submerged endurance of the boat**, several folds.
3. **Fuel cell-based AIP** has merits in performance compared to other technologies.
4. While **there are different types of AIP systems** being **pursued internationally**, fuel cell-based AIP of NMRL is unique as the **hydrogen is generated onboard**.
5. The technology has been successfully developed with the support of **industry partners L&T and Thermax**. It has now reached the stage of maturity for fitment into target vessels.

## FIRST MILITARY DRILLS IN SPACE

**France has begun its first military exercises in space** to test its **ability to defend its satellites**, in a sign of the growing **competition between world powers in Earth's orbit**. Michel Friedling, the head of **France's newly created Space Command**, called the

exercises a "**stress test of our systems**" and said they "**were a first for the French army** and even a **first in Europe.**"

#### What

1. Codenamed "**AsterX**" in a nod to the **first French satellite Asterix from 1965**, the drills will simulate the monitoring of a potentially dangerous space object, as well as a threat to a satellite.
2. A series of events appear and create crisis situations or threats against our space infrastructure, but not only this.
3. The **new US Space Force** and **German space agencies** are taking part in the French exercises, which began on 8 March 2021 and will run until 12 March 2021.
4. France's Space Command was announced in 2019 and is set to number 500 people by 2025.
5. France planned to develop **anti-satellite laser weapons** and **new surveillance capabilities** to close the gap with rivals China, Russia and the United States.
6. **In 2018**, France accused Russia of trying to intercept transmissions from a **Franco-Italian satellite** used by both nations' armies for secure communications.
7. The Russian satellite Louch-Olymp allegedly approached the **Athena-Fidus satellite** in what French authorities called "**an act of espionage.**"

## SOUNDING ROCKET LAUNCHED

The **Indian Space Research Organisation (ISRO)** has launched a **sounding rocket** to **study attitudinal variations** in the **neutral winds and plasma dynamics** from Sriharikota spaceport. ISRO has developed a series of **sounding rockets** called **Rohini series**, important among them being **RH-200, RH-300** and **RH-560**, number in the name indicating the **diameter of the rocket in mm**, according to the Bengaluru-headquartered space agency.

#### What

1. Launch of **sounding rocket (RH-560)** to study **attitudinal variations** in the **neutral winds and plasma dynamics** carried out on 12 March 2021 at SDSC SHAR, Sriharikota.
2. **Sounding rockets are one or two stage solid propellant rockets** used for **probing the upper atmospheric regions** and for space research.
3. They also serve as **easily affordable platforms** to test or prove prototypes of new components or subsystems intended for use in launch vehicles and satellites.
4. At present, **Isro has three versions of sounding rockets- RH-200, RH-300-Mk-II** and **RH-560-Mk-II** capable of **carrying 8-100kg payload** and **reach an altitude of 80 to 475km.**
5. Isro started launching **indigenously made sounding rockets from 1965**, and experience gained was of immense value in the mastering of **solid propellant technology.**

## HUBBLE SPOTS SECOND ATMOSPHERE ON EXOPLANET

A **first outside our solar system**, an **exoplanet named GJ 1132 b** has gained a **second atmosphere** through volcanic activity after losing its original atmosphere. The **Earth-sized rocky exoplanet located 41 light-years away** from our Earth orbits a dwarf star and was **believed to have hydrogen and helium gases** in its atmosphere before losing it to the intense radiation of the young hot star it orbits. The evidence of a new atmosphere was found using the National Aeronautics and Space Administration's (NASA) **Hubble telescope**.

### What

1. Astronomers were surprised by the new findings as the new atmosphere contains a **toxic mix of hydrogen, methane, and hydrogen cyanide**.
2. In addition, it also contains an **aerosol haze similar to Earth** which is a result of photochemically produced hydrocarbons.
3. They also believe that the planet may have a **thin crust** that is only a few hundred feet thick. Also, the atmosphere is getting replenished by gases seeping through cracks on the planet's surface which have molten lava beneath it oozing via volcanic fissures.
4. **GJ 1132 b** is similar to earth in its size, density and age. Both planets even had a **hydrogen-dominated atmosphere** initially before cooling down. The data also shows that the **atmospheric pressure is similar as well**. However, the main difference is that the exoplanet is that **it orbits too close to the red dwarf star**.
5. The planet is **tidally locked** (one hemisphere always facing the sun like Moon orbits Earth) to its Sun and completes one orbit (elliptical) in just a day and a half with temperatures **reaching 256 degree celsius**.

## MISCELLANEOUS

### INDIA'S FIRST MACHINE TOOL PARK

**Karnataka**, which is home to **India's first Aerospace SEZ**, electronics city and several IT parks, is now ready with **India's first integrated machine tool park**. The park, spread over 530 acres at **Vasanthnarasapura**, about 90 kms from Bengaluru, is developed under the scheme of **Enhancement of Competitiveness in Indian Capital Goods Sector (ECICGS)**, jointly by the **state government and the Department of Heavy Industries, Government of India**.

### What

1. The **Indian Machine Tools Manufacturers Association (IMTMA)** has provided the technical assistance to the **country's biggest machine tool park** which is ready for occupation.
2. Both the state and central governments have set up a **special purpose vehicle** named **Tumakuru Machine Tool Park (TMTP)** to develop the new industrial cluster.
3. It has 158 ready-to-build industrial plots of various dimensions. The park is fully developed with proper layout, **concrete roads**, footpath, drainage, electricity, water linkage and even bus shelters.

4. The government of India has set an ambitious target of achieving **\$5 trillion economy by 2025**, of which the manufacturing sector contribution will be **around \$1 trillion**.
5. The **machine tool park** was conceived about **eight years ago** and with the support of **department of heavy industries**, the government of India and Karnataka governments, the park has become a reality and is set to play an important role in consolidating **Karnataka's numero uno position** in the manufacture of machine tools.
6. Already, **Karnataka is the third highest contributing state for heavy engineering in India**. It accounts for **52% of India's total share in machine tool production** and 62% of machine tool exports.

## LSTV, RSTV MERGED INTO SANSAD TV

Presiding officers of both Rajya Sabha and Lok Sabha accepted that **Lok Sabha Television (LSTV) and Rajya Sabha Television (RSTV) have been merged** into a single '**Sansad TV**', of which retired IAS officer **Ravi Capoor** will be the Chief Executive Officer for a year. The decision was taken in line with the proposals given by a panel headed by former Prasar Bharati chairman A Surya Prakash. It was appointed by Rajya Sabha chairman M Venkaiah Naidu in consultation with **LS speaker Om Birla**

### What

1. The **panel**, which had consulted some members of Parliament also, had suggested that **Parliament should have only one channel**, which could be called **Sansad TV**. The panel had submitted its report in June last year.
2. While the panel had suggested that **Sansad TV could have two platforms** to telecast live the proceedings of Rajya Sabha and Lok Sabha during Sessions, it had proposed that the same platforms — **Sansad 1 and Sansad 2** — could broadcast the same programme, in **Hindi and English respectively**, during the inter-Session period.
3. The panel had suggested that the new channel should capture "**various activities beyond the proceedings of the two Houses**, including the functioning of committees and development activities of the members in their constituencies.

## INDIAN INSTITUTES IN QS UNIVERSITY RANKING

Union Education Minister Ramesh Pokhriyal on 4 March 2021 said the reforms made by the government in higher education have improved representation of Indian institutions in globally acclaimed rankings. This year, **12 Indian institutions** have **made it to the top 100** of the **QS World University Rankings by Subject 2021**.

### What

1. These are **IIT Bombay, IIT Delhi, IIT Madras, IIT Kharagpur, IISc Bangalore, IIT Guwahati**, IIM Bangalore, IIM Ahmedabad, Jawaharlal Nehru University, Anna University, University of Delhi, and O P Jindal University.
2. Among these, **IIT Madras has been ranked 30th in the world for Petroleum Engineering**, IIT Bombay has been ranked 41st and IIT Kharagpur 44th for Minerals

- and Mining Engineering, and the **University of Delhi has been ranked 50th in the world for Development Studies.**
3. Over the last few years, the government's continuous **focus on improvement and reform in Indian higher education** has resulted in significant improvement in the representation of Indian institutions in globally acclaimed and reputed rankings like QS, the Union education minister said at the unveiling of the **QS World University Rankings by Subject (2021).**
  4. India's higher education system plays a vital role in **driving the nation's competitiveness.**
  5. Today, **India is a leading nation with the highest number of higher education institutions** across the globe with significant progress in the last few years in terms of enrolment in higher education which now stands at 37.4 million.

## IISC FINDS 13 PROTEINS IN VIRUS

Researchers at the **Indian Institute of Science (IISc)**, led by **prof Utpal Tatu** of the **Department of Biochemistry** have found a set of **new proteins unique to Covid-19**, including a key protein that suppresses our **immune response to the virus**. The **SARS-CoV-2 genome codes for more than 25 proteins**, but only a handful of these proteins have been identified so far, IISc said.

### What

1. **Studying viral proteins** provides functional information which is currently not well represented.
2. In the analysis, **we detected 13 different proteins** – most of them previously unidentified – from clinical samples.
3. One such protein **called Orf9b**, which suppresses the host's immune response, had been predicted, but our team provided the **first evidence of its expression**, Tatu said.
4. Just knowing how the virus functions will not be enough, he said, adding that one needs to put it in the context of the **host (humans).**
5. Therefore, in the third analysis, the team explored **how human bodies respond to the virus by examining host proteins.**
6. They discovered as many as **441 proteins unique to Covid-19 positive patients**, many of which are speculated to play a key role in the body's immune response.
7. The **proteomic (large-scale study of proteins) analyses** were carried out using a technique called **high resolution mass spectrometry**. The team is upbeat about the potential that this method has for large-scale testing.
8. **Proteins can be reliable markers of infections like Covid-19** because they are more abundant and stable as compared to **RNA molecules** on which the **prevalent RT-PCR tests rely.**

## HPCL SET UP BIOGAS PLANT

**Industrial biotechnology company Praj Industries** on 9 March 2021 said it has bagged an order from **Hindustan Petroleum Corporation (HPCL)** for setting up a **compressed biogas (CBG) project** at Badaun in Uttar Pradesh. The project with a capacity to process **35,000 tonnes of rice straw as feedstock** to generate **5,250 tonnes of CBG annually** will also generate 23,000 tonnes high-quality **solid bio-manure** and 3, 50,000 tonnes of **liquid bio-manure for ferti-irrigation**, Praj said.

### What

1. This project has a **potential to save up to 15,000 tonne of CO2 emissions per year** and will be completed and commissioned within 12 months.
2. For this project, **Praj is offering first-of-its-kind RenGas™ technology** developed by it using **proprietary microbe** to **produce CBG from rice straw**.
3. We are delighted to partner HPCL for the CBG project at Badaun UP which will deploy **RenGas™ technology** as an integral part of our **Bio-Mobility™ platform**.
4. This project is a definitive solution to meet the challenge of **air pollution related to stubble burning** while simultaneously enabling **sustainable decarbonisation**.

## 'AMRUT MAHOTSAV' LAUNCHED

Prime Minister was launched '**Azadi Ka Amrut Mahotsav**' from Gujarat on 12 March 2021 to **commemorate 75 years of India's Independence**. The PM also flagged off a **21-day long 'Dandi March'** from Sabarmati Ashram, which was home to Mahatma Gandhi during India's freedom struggle.

### What was the original Dandi March?

1. The **Dandi March or Salt March** was part of **Mahatma Gandhi's non-violent protest** against the **British monopoly on production of salt**.
2. Led by Gandhi, **78 people started the 24-day march on 12 March** and reached Dandi on 5 April 1930. After making salt at Dandi, Gandhi headed to **Dharasana Salt Works**, 40 km south, but was arrested on May 5.
3. Last week, the Centre announced the formation of a **high-level national committee headed by Prime Minister Modi** to commemorate **75 years of the country's independence**.
4. PM said the **celebrations for India's 75 years of independence** should reflect the spirit of the country's freedom movement and showcase its achievements to the world **since 1947**.

## LONGEST JET OF PARTICLES COMING FROM BLACK HOLE

Using the **National Aeronautics and Space Administration's (NASA) Chandra Observatory**, astronomers have discovered never seen before, a **long jet of particles coming from a supermassive black hole** in the early universe. The **gigantic jet of particles originated from a galaxy 12.7 billion light-years away** from our planet. The



light detected from this jet was emitted at a very early age of the universe when it was **0.98 billion years old**, almost **one-tenth of its age now**.

#### What

1. The **source of the jet is a quasar**, which is powered by a **supermassive black hole named PJ352-15**.
2. The **quasar sits at the centre of the galaxy** and is one of the two most powerful quasars as per the radio waves detected in the first billion years after the big bang event. Its size is also estimated to be a **billion times more massive than our Sun**.
3. In order to collect **evidence of the X-Ray jet**, astronomers had to observe PJ352-15 for three days using Chandra.
4. When detected, it was **approximately 1, 60,000 light-years away from its origin** in the same direction. To understand the distance covered, the **Milky Way galaxy** housing our solar system spreads almost 100,000 light-years.
5. What makes this discovery more important is that the **first jet of particles recorded by astronomers was 5,000 light-years** in length making this an astronomical record by a huge margin.
6. The length of this jet is significant because it means that the supermassive black hole powering it has been growing for a considerable period of time, the Max Planck Institute for Astronomy (MPIA) in Heidelberg said.
7. This result underscores how X-ray studies of distant quasars provide a critical way to study the growth of the **most distant supermassive black holes**.

## INDIA FIFTH MOST ATTRACTIVE GROWTH DESTINATION

**India has emerged as the fifth most attractive growth destination**, slipping one position after being **surpassed by the United Kingdom**, according to a global survey of CEOs. The **United States is the number one market** that CEOs (Chief Executive Officers) are looking to in terms of growth over the next 12 months and China is at the second spot. The findings are part of leading consultancy **PwC's 24th Annual Global CEO Survey** that covered 5,050 CEOs in 100 countries and territories, **including India**.

#### What

1. **At 17 per cent, Germany holds on to its number three spot** on the list of growth destinations, while the UK, post-Brexit, moves up to number four (11 per cent), surpassing India (8 per cent).
2. **Japan also rises up the ranking to become the sixth most attractive growth destination**, overtaking Australia which held that position last year.
3. The US has extended its lead as the number one market that CEOs are looking to for growth over the next 12 months at 35 per cent, seven percentage points ahead of China at 28 per cent. **In 2020, the US was only one percentage point ahead of China**.
4. The survey found that **76 per cent of CEOs worldwide expect the global economic recovery to improve in 2021**, showing record levels of optimism about growth a year after the outbreak of the coronavirus pandemic.

5. As cross-border competition heats up **global tax debates**, CEOs foresee some cooling of global trade tensions.
6. Both trade conflict and protectionism dropped on the CEO threat list, in relative and absolute terms, the survey released said.

## TURING SCHEME AFFECTS INDIAN UNIVERSITIES

Having left the European Union's flagship **Erasmus scholarship programme** after Brexit, the UK on 12 March 2021 launched **its own replacement** called the **Turing scheme** to enable UK students to study abroad. **Named after the celebrated English mathematician and codebreaker Alan Turing**, the scheme will **enable schools, colleges and universities** in the UK to apply for government funding to allow students to study and work across the globe, **including in India**.

### What is the UK's Turing Scheme for students?

1. The scheme, for which the **British government has allocated 110 million pounds** for the first year, **starts in 2021/22**, and **would enable up to 35,000 students** from across the country to study or work across the world from September this year.
2. **Under the programme**, after schools and universities successfully apply for funding for exchanges, university study and work placements, they can invite their students to apply for individual fundings.
3. British Prime Minister Boris Johnson has said that **the scheme would be a global programme** in which **every country in the world will be able to partner with UK institutions**.
4. This is in contrast with the **Erasmus+ programme**, which only included European countries.
5. The scheme is **aimed towards ensuring social mobility**, and targets students from **disadvantaged backgrounds** and areas from where not many could benefit under the previous **Erasmus+ scheme**.

#### How will the scheme impact India?

1. The **UK's Department for Education (DfE)** has confirmed that India, already a top source of international students to the UK, could be among the leading list of countries with which UK universities seek to strike student exchange projects.
2. The **scheme is part of the UK's drive to increase the amount generated from education exports**, including fees and income from overseas students and English language teaching abroad.
3. The government aims to generate 35 billion pounds per year, and bring 6 lakh international students to the country by 2030.

## SPACEX FLIES FALCON 9 ROCKET BOOSTER

Tech billionaire **Elon Musk's private aerospace company SpaceX** on 14 March 2021 **launched 60 Starlink satellites** from Launch Complex 39A (LC-39A) at Kennedy Space Center in Florida. This was the **ninth launch** and landing of Falcon 9 first stage booster,

which previously supported launch of **Crew Dragon Demo-1**, **RADARSAT Constellation**, **SXM-7**, and **five Starlink missions**.

#### What

1. The launch also set a record for **SpaceX for its Falcon 9 rocket reusability programme**, since it was the **ninth flight and ninth landing** for this particular **first-stage booster**.
2. The booster was used previously on a variety of missions, including **five prior Starlink launches**, as well as the **Demo-1 mission** for the **company's Crew Dragon capsule**, which was the uncrewed test flight that proved it would work as intended from launch all the way to docking with the **International Space Station** and then returning back to Earth.
3. **SpaceX set its prior reusability record in January this year** -- another Starlink launch -- using this very same **refurbished first stage**, which had just flown in December of last year before that.
4. SpaceX not only wants to continue to show that it can **re-fly these boosters more** and more times, but also that it can turn them around quickly for their next mission, since **both speed and volume will have a significant impact on launch costs**.

## BHAVANI DEVI SCRIPTS HISTORY

CHENNAI: **Tamil Nadu's C A Bhavani Devi** has become the **first ever Indian fencer to qualify for the Tokyo Olympic Games**. The sabre fencer secured a spot in the World Cup in Hungary after the hosts lost in the quarterfinals of the team event, allowing South Korea to progress to the semi-final.

#### What

1. **Bhavani Devi** qualifies through the **Adjusted Official Ranking (AOR) Method**.
2. The 27-year-old's qualification will be confirmed when the rankings are made official on the aforementioned date.
3. The **eight-time national champion** had failed to **qualify for the Rio Olympics**.
4. However, she stepped up efforts to secure qualification for the Tokyo games and continued to train abroad in Italy under coach **Nicola Zanotti** before the COVID-19-induced shutdown halted the qualification process.
5. The **Tokyo Olympics scheduled to be held in 2020** were put off owing to the COVID-19 pandemic and are scheduled to take place from July 23 to August 8 this year.