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1. Over 60 people dead in the Indonesian earthquake (Nov. 21, 2022)

A 5.6-magnitude earthquake killed more than 60 people and injured hundreds in Indonesia's West Java province on 21 November 2022. However the death toll is likely to rise further as many are still trapped under the rubbles.

The **epicentre** was near the town of Cianjur in West Java, about 75 km (45 miles) southeast of the capital, Jakarta.

Indonesia lies across the "Pacific Ring of Fire", a highly seismically active zone, where different plates on the Earth's crust meet and create a large number of earthquakes and volcanoes.

In 2004, a 9.1 magnitude quake off Sumatra Island in northern Indonesia triggered a **tsunami** that struck 14 countries, killing 226,000 people along the Indian Ocean coastline, more than half of them in Indonesia.

Earthquake

Earthquakes happen when the plates of the earth collide with each other. The earth's lithosphere consists of **7 major plates** and they float over the molten surface of the upper mantle. When they collide energy waves are released which causes vibration on the surface of the Earth known as Earthquake.

The location below the earth’s surface where the earthquake starts is called the **hypocenter**, and the location directly above it on the surface of the earth is called the **epicenter.**

Earthquakes are recorded by instruments called **seismographs**. The recording they make is called a seismogram.

The scale for measuring earthquakes is called the **Richter scale**. It is a mathematical scale used to measure the **intensity of earthquake waves**. It ranges from 0 to 9. However it can be more than 9.

2. India and European Union sign agreement for cooperation in high-performance computing (Nov. 21, 2022)

cooperation in high-performance computing

India and the European Union (EU) have signed an agreement on cooperation in hi-tech areas such as climate modelling and quantum technologies on 21 November 2022. This agreement seeks to implement the provision of the **India-EU TTC (Trade and Technology Council)** agreement signed during the visit of the European Union Commission **President Ursula von der Leyen** on 25 April 2022 at New Delhi.

The agreement named **‘Intent of Cooperation on High Performance Computing (HPC), Weather Extremes and Climate Modelling and Quantum Technologies**’ was signed by the ministry of electronics and IT (MeitY) and the European Commission’s Directorate-General for Communications Networks, Content and Technology (DG CONNECT)

during a virtual ceremony. The agreement was signed by MeitY secretary **Alkesh Kumar Sharma** and DG CONNECT director general Roberto Viola.

The agreement aims to facilitate collaboration on high performance computing applications using Indian and European supercomputers in areas such as bio-molecular medicines, Covid-19 therapeutics, mitigating climate change, predicting natural disasters and quantum computing.

India-EU TTC (Trade and Technology Council)

The India-EU TTC (Trade and Technology Council) was established between India and the European Union during the visit of the European Union Commission President Ursula von der Leyen on 25 April 2022 at New Delhi.

The India-EU TTC (Trade and Technology Council) is a strategic mechanism that gives New Delhi access to advanced technologies and allows the two sides to set standards in crucial areas such as 5G and artificial intelligence.

This is the **first such trade and technology council** set up by India with any of its partners.

India is the **second country** after the United States of America with which the European Union has signed such an agreement.

European Union

The European Union is a group of **27 European countries.**

The United Kingdom which was the founding member of the European Union has left the organisation.

It was founded on 1 November 1993

Headquarters: **Brussels,** Belgium

3. India to take over Chairmanship of the Global Partnership on AI from France (Nov. 21, 2022)

India to take over Chairmanship of the Global Partnership on AI from France

India will take over the Chairmanship of the Global Partnership on Artificial Intelligence (GPAI) from **France** during the **third edition of the annual Global Partnership on Artificial Intelligence (GPAI)** being held in **Tokyo**, Japan on 21 November 2022. India will be chairman for the 2022-23 period.

France will symbolically hand over the chairmanship to the Minister of State for Electronics and Information Technology **Rajeev Chandrasekhar** who is representing India at the 2day (21-22 November) Tokyo summit meet.

AI which stands for artificial intelligence refers to systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect.

Artificial Intelligence is expected to contribute **450 to 500 billion US dollars** to India's GDP by 2025 accounting for 10 per cent of the country's 5 trillion dollar GDP target. It is expected to contribute 967 billion US dollars to the Indian economy by 2035.

What is Global Partnership in Artificial Intelligence?

It was launched on June 15, 2020, with fifteen members as its founding member. India is one of the founding member country of Global Partnership in Artificial Intelligence (GPAI).

The initiative facilitates international cooperation on artificial technology by bringing together on a single platform, experts from fields such as science, industry, civil society, governments, international bodies, and academia.

At present, GPAI has **twenty-five member Countries. They are** : Australia, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea (South Korea), Singapore, Slovenia, Spain, Sweden, the United Kingdom, the United States, and the European Union (EU).

4. India moves up 6 place to be ranked 61st on the Network Readiness Index 2022 (Nov. 20, 2022)

India moves up 6 place to be ranked 61st

India has improved its rank by **6 places** to be ranked at **61 place** in the recently released Network Readiness Index 2022 (NRI 2022). The report prepared by the US-based non-profit body **Portulans Institute** compliments India and says that "India has a greater network readiness than would be expected given its income level".

The Network Readiness Index ranks the **131 countries** on 58 variables across four pillars of four different pillars: Technology, People, Governance, and Impact.

India's Performance

- India improved its score from 49.74 in 2021 to **51.19** in 2022.
- India has secured 1st rank in "**AI talent concentration**",
- 2nd rank in **"Mobile broadband internet traffic within the country"** and "International Internet bandwidth",
- 3rd rank in **"Annual investment in telecommunication services"** and "**Domestic market size**", 4th rank in **"ICT Services exports"** and
- 5th rank in **"FTTH/Building Internet subscriptions**" and "**AI scientific publications".**
- India is ranked **3rd** out of 36 in the group of **lower-middle-income countries** after Ukraine (50) and Indonesia (59).

Top three countries on the Network Readiness Index

The **United States** topped the list with an overall score of 80.3. It was followed by **Singapore** with a score of 79.35 and **Sweden** with a score of 78.91.

In the **Asia Pacific region**, the list was led by **Singapore**, followed by **South Korea** and **Japan.**

Full Forms

FTTH: Fiber to the Home

ICT: Information Communication Technology

AI: Artificial Intelligence

5. India's first privately built rocket, Vikram-S, launched by ISRO (Nov. 18, 2022)

India's first privately built rocket

India's first ever private Vikram-S (Suborbital) rocket was launched on 18 November from the **Satish Dhawan Space Centre, Sriharikota.**

Important facts

- The rocket reached an altitude of 89.5 km with three payloads weighing a total of 83 kilograms.
- Vikram-S, designed by **Skyroot Aerospace** as a tribute to the father of the country's space programme, **Vikram Sarabhai,** successfully completed its maiden mission.
- **Skyroot Aerospace** has become the **first privately owned rocket manufacturing company in India** after the Center opened up the space sector to private players in 2020.
- This first mission of Skyroot Aerospace has been named '**Prarambh'.**
- The rocket after taking off from Sriharikota splashed down safely in the waters of the Bay of Bengal, about 115 km away.
- Two indigenous and one foreign payloads are also going on this rocket. This six metre high rocket is the world's first all composite rocket. It has 3D-pretended solids to handle its spin capability.
- Through this rocket, avionics, telemetry, tracking, inertial measurement, global positioning system, onboard camera, data acquisition and power system will be tested.
- It is a sub-orbital flight carrying satellites from **Chennai-based space startup SpaceKidz, Andhra Pradesh-based N-SpaceTech and Armenia's BazoomQ Space Research Lab.**

6. Blackstone launches its Asian Data center business from India (Nov. 16, 2022)

Blackstone launches Asian Data center

American multinational private equity investor **Blackstone** has started its data centre business in Asia from India. It plans to increase it to 600 MW over the next two years through presence in five locations in the country.

Blackstone launched its data center platform Lumina CloudInfra on 15 November 2022. The Lumina CloudInfra is owned and managed by Blackstone's Real Estate and Tactical Opportunities funds.

Initially the data center will be set up in **Mumbai** and **Chennai**, and later on it will be set up in **Delhi-NCR**, **Hyderabad** and **Pune.**

National Data Center

The government data center has been set up and managed by the National Informatics Centre (NIC).The first Data Centre was launched in **Hyderabad in 2008**, followed by NDC Pune in 2010, NDC Delhi in 2011 and NDC Bhubaneswar in 2018.

It operates 37 small Data Centres at various State Capitals to provide services to the Government at all levels.

National Data Centre (NDC) at **Bhubaneswar is a Cloud-enabled Data** Centre which has been offering cloud services to Government Departments since its inception.

The National Data Centres form the core of e-Governance Infrastructure in India by providing services to various e-Governance initiatives undertaken by the Government of India.

What is a Data Center?

A data center is a facility that centralizes an organization's shared IT operations and equipment for the purposes of storing, processing, and disseminating data and applications. Because they house an organization's most critical and proprietary assets, data centers are vital to the continuity of daily operations.

7. NASA launches its Artemis 1 mission from Kennedy Space Centre, Florida (Nov. 16, 2022)

NASA launches its Artemis 1 mission

The US space agency **NASA** launched its **Artemis 1 mission** on 16 November, 2022 from **Kennedy Space Centre, Florida.**

Important facts

- About eight minutes after launch, the **core stage's engines** cut off and the core stage separated from the rest of the rocket.
- After this, the Orion spacecraft was propelled by the **Interim Cryogenic Propulsion Stage (ICPS).**
- NASA also deployed the four solar arrays of the **Orion spacecraft.**
- After completing "translunar injection", Orion separated itself from the ICPS and is now on its way to **lunar orbit.**

About Artemis 1 mission

- For the first time in **50 years** since the end of the **Apollo program**, the launch of Artemis 1 is an ambitious US mission to return astronauts to the surface of the Moon.
- The Artemis 1 launch will also be the **first flight of NASA's 21st century moon-exploration program.**
- With Artemis 1 on the surface of the Moon, NASA aims to demonstrate new technologies, business approaches and capabilities that are essential for future explorations, including **Mars.**
- The launch aims to further aid in the study of the **Moon, its origin and history.**

ISRO’s Moon Exploration Mission

- Chandrayaan 1
- Chandrayaan-2
- The Indian Space Research Organization (ISRO) recently announced India's third lunar mission Chandrayaan-3, which will consist of a lander and a rover.

8. Government has extended the term of DGCI V G Somani again by three months (Nov. 16, 2022)

The Union Ministry of Health and Family Welfare has again extended the term of the Drugs Controller General of India (DCGI) **Dr V G Somani** by another three months. The extension will come into effect from 15 November 2022.

He was earlier given an extension in August this year for three months. His extended term was to expire on 15 November 2022.

Dr Venugopal Girdharilal Somani played a key role in the approval of covid-19 vaccine, approval of lifesaving drugs and ensuring its quality in combating the covid-19 pandemic.

About DCGI (Drugs Controller General of India)

The Drugs Controller General of India is the head of the **Central Drugs Standard Control Organisation** under the Union Ministry of Health and Family Welfare.

Under the Drugs and Cosmetics Act, CDSCO is responsible for approval of Drugs, Conduct of Clinical Trials, laying down the standards for Drugs, control over the quality of imported Drugs in the country

Drugs Controller General of India: **Venugopal Girdharilal Somani**

Headquarters: **New Delhi**

9. Union Minister Arjun Ram Meghwal inaugurates international travelling Exhibition “Vaccines Injecting Hope” (Nov. 15, 2022)

“Vaccines Injecting Hope”

Union Minister of State for Culture & Parliamentary Affairs **Ajun Ram Meghwa**l inaugurated an international travelling exhibition **“Vaccines Injecting Hope”** at the National Science Center, New Delhi on 15 November 2022.

The exhibition “Vaccines Injecting Hope” has been organised by the **National Council of Science Museums** (NCSM) and **Science Museum Group, London**.

The exhibition tells the story of the global effort to develop covid vaccine started on 15 November 2022 and will tour five cities of Delhi, Nagpur, Mumbai, Bengaluru and Kolkata till September 2025 and is expected to reach out to more than 2 million people.

The exhibition has sections on ‘The Arrival of New Virus’, ‘Designing a New Vaccine’, ‘Trials, Results and Approvals’, ‘Scaling Up and Mass Production’, ‘Vaccine Rollout’, ‘Living with COVID’.

Novel Coronavirus or Covid-19

The novel coronavirus was first detected in **Wuhan,**China in December 2019 and was later declared a Public health emergency of International concern by the World Health Organisation on 30 January 2020 and a Pandemic on 11 March 2020.

The **first case** of the virus in India was confirmed in **Kerala** on 30 January 2020.

Bharat Biotech, Indian Council of Medical Research and National institute of Virology, Pune developed an indigenous corona vaccine called **Covaxin.**

The Covid vaccination in India was started on **16 January 2021.**

National Council of Science Museums (NCSM)

It is an autonomous body under the Union **Ministry of Culture.** It is a premier body in the field of science communication.

It popularizes Science and Technology through a network of science centers, Mobile Science Exhibitions (MSE) units that visit rural schools and organise various activities for public and students in particular.

Headquarters: **Kolkata, West Bengal**

10. Jitendra Singh dedicates first Indian Biological Data Center to the nation (Nov. 15, 2022)

Jitendra Singh dedicates first Indian

Union Minister of state for Science and Technology, Jitendra Singh dedicated **India’s first national repository for life science data** ‘**Indian Biological Data Center’ (IBDC)** to the nation on 10 November 2022 at **Faridabad.**

About Indian Biological Data Center

- In this data centre Indian researchers will store biological data from **publicly funded research.**
- The digitised data will be stored on a four-petabyte supercomputer called '**Brahm**'. A **petabyte** equals 10,00,000 **gigabyte**s (gb).
- The government has mandated that data on all publicly funded research should be stored in this central repository.
- It will not only provide researchers a platform to securely store their data within the country, but also provide access to a large database of indigenous sequences for analysis.
- The Bio-Bank currently accepts **nucleotide sequences** to digitise the genetic of **humans, plants, animals and mic**robes.
- The bio-bank now has 200 billion base pair data, including 200 human genomes sequenced under the **'1,000 Genomes Pr**oject', an international effort to map genetic variations in people.
- The project will also focus on populations that are vulnerable to certain diseases.