

## Testwale Current Affairs PDF

Current Affairs search results for tag: science-and-technology

### **1. Indian communication satellite launched by Arianespace ( June 23, 2022 )**

Arianespace, two communication satellites belonging to India and Malaysia were placed in geostationary orbit on 22 June by the European Space Agency.

- The two satellites cumulatively weighed over 10 thousand kilograms, flown by Ariane-5 rocket from the spaceport in Kourou, French Guiana.
- The Indian satellite, GSAT-24, has been developed by New Space India Limited (NSIL), the commercial arm of ISRO, for television service provider Tata Sky.
- GSAT-24 is a 24-Ku band communication satellite weighing more than four thousand kilograms and caters to the needs of DTH applications across the country.
- GSAT-24 will be the 25th Indian satellite to be orbited by Arianespace.
- On September 28, 2021, NSIL handed over Arianespace with the launch of its GSAT-24 telecommunications satellite, the European Space Agency.
- The other satellite MEASAT-3d is a multi-mission telecommunications satellite built by Airbus Defence and Space for MEASAT, a Malaysian satellite operator.
- This new satellite will significantly increase broadband speeds of up to 100 Mbps in areas with limited or no terrestrial network or in rural Malaysia.
- **About Arianespace**
  - It is the world's first commercial launch service provider.
  - It is a French company founded in 1980.
  - It operates and markets the Ariane program.
  - The company offers several different launch vehicles such as the heavy-lift Ariane 5 for dual launch in geostationary transfer orbit, Soyuz-2 as a medium-lift option, etc.

### **2. China launches third most advanced domestically built aircraft carrier 'Fujian' ( June 20, 2022 )**

China recently launched the country's most advanced and first fully domestically built aircraft carrier named 'Fujian'.

- The third aircraft carrier named after China's eastern coastal province of Fujian was commissioned.
- China's first aircraft carrier Liaoning is a refined version of the Soviet-era ship, which was commissioned in 2012 and was followed by the launch of second aircraft carrier 'Shandong' in 2019 which was indigenously built.
- China's new warship is said to be the first drone aircraft carrier.

- The ship can carry 50 unmanned systems, including unmanned boats, drones and underwater vehicles.

- **Important facts**

- China officially the People's Republic of China is a country in East Asia.
- It is the world's most populous country, with a population of more than 1.4 billion.
- China spans five geographical time zones and borders 14 countries,
- the second most of any country in the world after Russia.
- China's capital is Beijing, and the financial centre is Shanghai.
- China is the world's largest economy by GDP at purchasing power parity, the second-largest economy by nominal GDP, and the second-wealthiest country.
- China is one of the fastest growing major economies and is the world's largest manufacturer and exporter.
- China is the world's largest standing army by military personnel and second-largest defence budget.
- President- Xi Jinping

### **3. U.S. to fund 3 Indian research institutions ( June 17, 2022 )**

The United States of America has announced \$122 million in funding to the top three Indian medical research institutes to help prevent preventable pandemics, early detection of disease threats, and prompt and effective response.

- A total amount of US\$ 122,475,000 will be disbursed to three top Indian health research institutes over a period of five years.
- These three research institutes are Indian Council of Medical Research (ICMR), National Institute of Virology (NIV), Pune and National Institute of Epidemiology (NIE), Chennai.
- The fund will accelerate progress towards India that protects against infectious disease threats by focusing on emerging pathogens.
- The fund will help in detecting and controlling zoonotic disease outbreaks through a 'one health' approach, evaluate vaccine safety monitoring systems, capacitance of the public health workforce in epidemiology and outbreak response.
- Starting from September 30, 2022, eligibility for funding is limited to ICMR, and ICMR institutions, which are the National Institute of Virology (NIV), Pune, and the National Institute of Epidemiology (NIE), Chennai.
- **Indian Council of Medical Research (ICMR)**
  - It is one of the oldest medical research bodies in the world headquartered in New Delhi for the coordination and promotion of biomedical research.

- It works under the Department of Health Services (DHS), Ministry of Health and Family Welfare.
- It was established in 1911 as Indian Research Fund Association (IRFA).
- Later in 1949 its name was changed to ICMR.
- **National Institute of Virology (NIV)**
- It is one of the major institutes of the Indian Council of Medical Research (ICMR).
- It was established at Pune, Maharashtra in 1952.
- It was established as Virus Research Center (VRC) under the aegis of ICMR and Rockefeller Foundation (RF), USA.
- **National Institute of Epidemiology (NIE)**
- It is a permanent premier institute of the Indian Council of Medical Research (ICMR) established on 2 July 1999.
- It was established by merging the Central JALMA Institute for Leprosy (CJIL Field Unit), Avadi with the Institute for Research in Medical Statistics (IRMS), Chennai.
- The objectives of the Institute are conducting epidemiological studies, development of human resources in epidemiology and bio-statistics etc.

#### **4. India's first Covid-19 vaccine for animals ( June 13, 2022 )**

The Agriculture Ministry recently unveiled India's first Covid-19 vaccine for animals.

- The name of the vaccine is '**Ancovax**' and it can protect animals against the Delta and Omicron variants of SARS-CoV-2.
- **How does it work?**
- Ancovax can be used in dogs, lions, leopards, rats and rabbits.
- It has been developed by the Hisar-based National Research Centre on Equines.
- It is an inactivated vaccine developed using an infectious part of the delta variant.
- It uses Alhydrogel as an adjuvant to boost the immune response.
- This is the first Covid-19 vaccine for animals developed in India.
- Last year there were reports from Russia that it too had developed a vaccine against animals such as dogs, cats, minks and foxes.

#### **5. Microplastics found in Antarctica for first time ( June 13, 2022 )**

Scientists have found microplastics in fresh ice in the Antarctic for the first time.

- Scientists have warned that the microplastics in the fresh snow of Antarctica would accelerate the process of melting of ice.
- The researchers found an average of 29 microplastic particles per litre of melted snow.
- There were 13 different types of plastic found.
- The findings, published in The Cryosphere Journal, point to a serious threat to the Antarctic region.
- **Impact of microplastic on environment**
- Studies have shown that microplastics negatively impact the health of the environment, as well as limit the growth, reproduction and normal biological functions of organisms.
- Studies show that the global usage of plastic is set to increase by three fold by the year 2060.
- Microplastics have been discovered inside fish and under Arctic ice in the deepest ocean depths.
- Microplastics if found in humans have negative health effects.
- In 2019, Alex Aves, a PhD student at the University of Canterbury in New Zealand, collected ice samples from the Ross Ice Shelf in Antarctica.
- The researchers found in the laboratory that every sample from even remote sites on the Ross Ice Shelf contained plastic particles.
- Microplastics were found in ice samples from 19 sites in the Ross Island region of Antarctica.
- **What are Microplastics?**
- These are defined as plastics less than five millimetres in diameter.
- They are small plastic particles that result from commercial product development and the breakdown of larger plastics.
- Microplastics are non-degradable and insoluble in water.
- As a pollutant, microplastics can be harmful to the health of the environment, humans and organisms.

## **6. 'Abnormal' dinosaur egg found in India ( June 13, 2022 )**

Researchers from Delhi University have discovered a unique set of fossilized dinosaur eggs in Dinosaur Fossils National Park in Dhar district of Madhya Pradesh, with one egg nesting inside another.

- Eggs within eggs are a rare phenomenon, found only in birds and never in reptiles.
- This discovery brings to the new links between reptiles and avian evolution.

- The findings of discovery are published in the journal 'Scientific Reports'.
- The Upper Cretaceous Lameta Formation of Central India is long known for its dinosaur fossils.
- Scientists found evidence of 52 titanosaurid sauropod nests near Padalia village near Bagh town in Madhya Pradesh.
- One of these nests contained 10 eggs, one of which was an "abnormal" egg.

### • **About Dinosaur**

- Dinosaurs of the Sauropod family were among the largest animals ever found on land and were found in India millions of years ago.
- Dinosaurs are a diverse group of reptiles.
- Fossils of these animals have also been found in Gujarat, Madhya Pradesh and Meghalaya.
- Most Dinosaurs died out by the end of the Cretaceous period.
- Modern birds are a type of dinosaur because they share a common ancestor with non-avian dinosaurs.
- Dinosaur fossils have been discovered on all seven continents.
- All non-avian dinosaurs became extinct about 66 million years ago.
- The earliest known dinosaurs look during the Triassic period (about 250 to 200 million years ago).
- One of the biggest dinosaurs was the Argentinosaurus.
- Lizards, turtles, snakes and crocodiles are all descendants of dinosaurs.
- Dinosaurs could not survive and became extinct due to climate change.

## **7. America's Frontier supercomputer has become the world's fastest supercomputer ( June 11, 2022 )**

America's Frontier supercomputer has become the world's fastest supercomputer, surpassing Japan's Fugaku, according to the Top 500 list of the world's most powerful supercomputers.

- The Frontier supercomputer, built for the US Department of Energy's Oak Ridge National Laboratory (ORNL), has a speed of 1.1 exaflops, making it the world's first supercomputer operating at exascale speeds.
- This supercomputer is built using Hewlett Packard Enterprise Architecture, coupled with Advanced Micro Devices (AMD) processors.
- Its speed exceeds that of Japan's Fugaku supercomputer (442 petaflops), which was by far the fastest supercomputer in the world.

- Frontier is also ranked first in the Green 500 list as the world's most energy efficient supercomputer. It measures supercomputing energy use and efficiency with 52.23 gigaflops of performance per watt, making it 32% more energy efficient than the Fugaku supercomputer.
- In the latest edition of the Top 500 list, LUMI is followed by Frontier and Fugaku. The third place is given to the supercomputer, which is installed in Kajani, Finland.
- **Super computer of india**

NAME	MOTION	PLACE
Param Anant	838 Teraflops	IIT, Gandhinagar (Gujarat)
Param Pravega	3.3 Petaflops	IISc Bangalore
Param Ganga	1.67 Petaflops	I.I.T. Roorkee
Param shakti	1.66 petaflops	I.I.T. Kharagpur

## 8. Russia supplies new fuel for Kudankulam reactors ( June 11, 2022 )

Russia's Rosatom State Corporation has supplied the first batch of TVS-2M nuclear fuel, which is a more reliable and cost-effective nuclear fuel, to India for Units 1 and 2 of the Kudankulam Nuclear Power Plant (KNPP).

- Once the new TVS-2M fuel is in use, the reactor will start operating with a fuel cycle of 18 months.
- This means that the reactor, which has to be shut down every 12 months to remove spent fuel and insert new fuel bundles and associated maintenance, will now have to shut down every 18 months.

### • Benefits of TVS-2M fuel

- TVS-2M fuel assemblies have several advantages that make them more reliable and cost-effective.
- The fuel combinations in the reactor core maintain their geometry.
- one TVS-2 M assembly contains 7.6% more fuel material than that of UTVS.
- Its main feature is the new generation anti-debris filter ADF-2, which protects the bundles from damage caused by debris (small objects in the reactor core).
- Operating in a longer fuel cycle also increases the economic efficiency of a plant.

### • Kudankulam Nuclear Power Plant (KNPP)

- located - coastal Tamil Nadu

- built by - India in joint-collaboration with Russia.
- Construction on the plant began on 31 March 2002
- it is India's Critical Information Infrastructure
- It has an installed capacity of 6,000 MW of electricity

## **9. PM Modi launches projects worth ₹3,050 crore in Gujarat ( June 11, 2022 )**

On June 10, Prime Minister Narendra Modi laid the foundation stone for several development projects worth Rs 3,050 crore in Navsari district, Gujarat. In Navsari, Prime Minister Modi took part in the 'Gujarat Gaurav Abhiyan.'

- He inaugurated the AM Naik Healthcare Complex, Nirali Multi Speciality Hospital and Kharel education complex in Navsari.
- He inaugurated the headquarters of the Indian National Space Promotion and Authorisation Centre (**IN-SPACE**) at Bopal, Ahmedabad.
- It will play an anchoring role in transforming the space sector of India.
- He performed the Bhumi Pujan for **13 water supply projects** for residents of Tapi, Navsari and Surat districts, worth ₹961 crores.
- He also inaugurated the Madhuban Dam based **Astole Regional Water Supply Project** constructed at a cost of about Rs 586 crore.
- He also inaugurated '**Nal Se Jal**' projects worth ₹163 crores.
- These projects will provide safe and adequate drinking water to the residents of Surat, Navsari, Valsad and Tapi districts.
- **Indian National Space Promotion and Authorisation Centre (IN-SPACE)**
- The establishment of IN-SPACE was announced in June 2020 by the Government.
- It will be the nodal agency, which will allow space activities and non-government private entities to use the facilities belonging to the Department of Space.
- It aims to ensure maximum private participation for the space sector.
- It will also allow setting up of facilities within the ISRO campus based on safety norms and feasibility assessment.
- It will give an opportunity to the youth to showcase their talent.

## **10. NASA's DAVINCI Mission ( June 10, 2022 )**

NASA is planning to launch a mission named "DAVINCI Mission". DAVINCI stands for "Deep Atmosphere Venus Investigation of Noble Gases, Chemistry and Imaging Mission".

**• About DAVINCI Mission**

- This mission will fly near Venus in 2029 and explore its harsh atmosphere.
- It will reach the surface of Venus by June 2031.
- The mission will capture data about Venus, which scientists have been trying to measure since the early 1980s.

**• DAVINCI Spacecraft Chemistry Laboratory**

- The DAVINCI spacecraft will serve as a flight chemistry laboratory.
- It can measure various aspects of Venus's atmosphere and climate.
- The spacecraft's instruments will be able to map the surface of Venus as well as trace the composition of the mountain highlands of Venus.

**• About the planet Venus**

- It is the second planet in terms of distance from the Sun. Due to its structural resemblance to Earth, it is also called the twin planet of the Earth.
- The atmosphere on Venus is quite dense and toxic, consisting mainly of carbon dioxide gas and sulfuric acid clouds.
- Venus is one of only two planets that rotate from east to west. Only Venus and Uranus rotate like this.
- On Venus, one day-night cycle is equal to 117 Earth days because Venus rotates around the Sun in the opposite direction of its orbital rotation.

**• Venus related missions**

- ISRO Shukrayan: The Indian Space Research Organisation (ISRO) is also planning a mission related to the planet Venus, which is currently called 'Shukrayan Mission'.
- Akatsuki (Year 2015- Japan)
- Venus Express (2005 - European Space Agency)
- NASA's Magellan (1989)