

ORIONID METEOR SHOWER

The Orionid meteor shower is expected to rain down its greatest number of meteors on the mornings of October 21 and 22.



About Orionid meteor shower:

- It is an annual phenomenon that lights up the night sky every October.
- It is produced when Earth passes through the **debris left behind by Halley's Comet**, officially known as **1P/Halley**.
- This comet, which orbits the sun approximately every 76 years, expels dust particles from its nucleus, creating a trail of debris in its path.
- Each year, our planet intercepts this path in late October, resulting in the Orionid meteor shower.
- Halley's Comet, measuring about five by nine miles in size, loses between three to ten feet of material on each passage through the inner solar system.
- The Orionids are **viewable in both the Northern and Southern hemispheres** during the hours after midnight.

What is a meteor?

- When **meteoroids enter Earth's atmosphere** at high speed and burn up, the fireballs or "shooting stars" are called meteors.
- Meteor showers occur annually or at regular intervals as the Earth passes through the trail of dusty debris left by a comet.
- Meteor showers are **usually named after a star or constellation** that is close to where the meteors appear in the sky.



ETHICS COMMITTEE IN PARLIAMENT

Recently, the Lok Sabha Speaker referred the complaint against a sitting member of parliament to the House Ethics Committee.

About Ethics Committee in Parliament:

- The genesis of formation of the Ethics Committee in Parliament can be traced to a resolution adopted at the Presiding Officers Conference held in New Delhi in October, 1996.
- **Each house of the parliament** has its own ethics committee.
- **Ethics committee in Lok Sabha**
 - It was first constituted in 2000.
 - **Composition:** It consists of **not more than fifteen members and nominated by the Speaker.**
 - **Term:** They shall hold office for a term **not exceeding one year.**
- **Ethics committee in Rajya Sabha**
 - It was constituted in 1997.
 - **Composition:** It consists of **10 members** nominated by the Chairman of Rajya Sabha.
 - **Term:** They shall hold office for a term **not exceeding one year.**

Functions

- To oversee the **moral and ethical conduct of the Members;**
- To examine the cases referred to it with reference to ethical and other misconduct of the Members.
- Any person or member may make a complaint relating to unethical conduct of a member to the committee.
- In the case of the Ethics Committee only an MP can be examined for misconduct.

WHAT IS AUTOMATED PERMANENT ACADEMIC ACCOUNT REGISTRY (APAAR)?

The Union Education Ministry recently notified the States to begin the process of introducing the Automated Permanent Academic Account Registry or 'APAAR'.



About Automated Permanent Academic Account Registry (APAAR):

- APAAR, dubbed '**One Nation, One Student ID**', is an Education Ecosystem Registry, or an 'EduLocker'.



CROSS & CLIMB ROHTAK



- The APAAR will give each student enrolled from pre-primary to higher education, a **unique identification number**.
- This will be **in addition to** the already existing **Aadhaar ID** that every individual has.
- Upon enrolling in APAAR, each student's **identity will be authenticated through their Aadhaar ID** or other officially **recognised documents**, and a distinct identification number will be generated for them.
- **Benefits:**
 - The APAAR, or EduLocker will be a **lifelong ID number** for students for seamless **tracking of their academic journey** and achievements.
 - They will be **able to digitally store their exam results, learning outcomes, co-curricular achievements** such as ranking in Olympiads or receiving specialised skill training, and much more.
 - **Transcripts, certificates, and other academic achievements may be easily stored and accessed** by students, **boosting their capacity to apply for employment, scholarships, or higher education opportunities**.
 - In addition to that, **students transferring from one school to another will face less hassle in obtaining admission to a new institution** in any part of the country.
 - It would make it **easier for authorities, educational boards, and institutions to track student progress, monitor performance, and assess the effectiveness of education policies**.
 - It will also **help government agencies monitor dropouts**.

Enrolment process:

- The enrolment process will be **carried out by the school** with the **consent of their parents**, who will also be **able to withdraw their consent at any given point of time**.
- The government assured that the **data will be shared only with concerned government agencies** if and **when required**.
- The data collected on each student by the schools will be **stored in a centrally functioning District Information for Education portal**.

ORGANIZED CRIME AND CORRUPTION REPORTING PROJECT (OCCRP)

The Securities and Exchange Board of India (SEBI) recently asked the Organized Crime and Corruption Reporting Project (OCCRP) to give it access to “key documents” about the allegations of stock manipulation and accounting fraud against the Adani Group.



About Organized Crime and Corruption Reporting Project (OCCRP):

- OCCRP is a nonprofit investigative reporting platform for 50+ independent media outlets around the world, publishing more than 100 investigations a year.

It was founded in 2006 to conduct transnational investigative reporting and promote technology-based approaches to exposing organised crime and corruption worldwide.

- It aims to develop and equip a global network of investigative journalists and publish their stories.
- With this, OCCRP exposes crime and corruption so the public can hold power to account.

Vision: “A world where lives, livelihoods, and democracy are not threatened by crime and corruption.”

- OCCRP provides media outlets and journalists with a range of critical resources and tools, including digital and physical security, and allows those covering the most sensitive topics to work in teams with trusted editors.
- **OCCRP Aleph:** It is an investigative data platform where journalists can search and cross-reference more than three billion records to trace criminal connections and patterns and efficiently collaborate across borders.
- It also trains reporters and partners in advanced journalism techniques.
- OCCRP also partners with advocacy groups, arming civil society with information to meaningfully press for justice and change and unearths evidence that enables law enforcement to act.

WHAT CAUSED THE LARGEST MARSQUAKE?

Why in News?

- Just like on Earth, the surface of Mars sometimes vigorously shakes and unsurprisingly, that is called a marsquake.
- The largest ever marsquake recorded in history happened in 2022 and scientists now finally know the reason behind it.

Background:

- On May 4, 2022, NASA's **InSight lander** detected the largest quake yet recorded on Mars, one with a 4.7 magnitude. It is fairly modest by Earth's standards but strong for Mars.
- Unlike Earth, Mars doesn't have the same geological process called plate tectonics which usually causes earthquakes.
- Initially, scientists thought that a meteorite impact might be the culprit behind this unusual "marsquake."
- However, their search for an impact crater did not lead to any findings. This led scientists to a new conclusion – this particular quake was actually triggered by tectonic activity happening within Mars itself.
- It is like rumbling deep inside the planet, giving researchers a better understanding of what makes Mars tremble and move.
- This discovery sheds new light on the seismic activities of Mars.

Significance of This Finding:

- Scientists concluded that the largest marsquake seen by InSight was tectonic, not an impact. This is important as it shows the faults on Mars can host hefty marsquakes.
 - The energy released during this particular marsquake was more powerful than all the other marsquakes InSight had recorded combined.
- Unlike Earth, where the outer layer, called the crust, is divided into big plates that move around and cause earthquakes, **Mars has a single, unbroken crust.**
- The findings reveal that there are still faults that are active on Mars.

WHAT IS THE TV-D1 MISSION?

Indian Space Research Organisation (ISRO) is set to launch its first-ever test flight, TV-D1, for the Gaganyaan mission, marking a pivotal moment in India's pursuit of human spaceflight.



About TV-D1 Mission:

- Test Vehicle Abort Mission-1 (TV-D1) will evaluate the **crew module's readiness** for the Gaganyaan mission.
- It is a **single-stage liquid rocket developed** specifically for this abort mission.
- The payloads consist of the **Crew Module (CM)** and **Crew Escape Systems (CES)** with their fast-acting solid motors, along with CM fairing (CMF) and Interface Adapters.
- This flight will simulate the abort condition during the ascent trajectory corresponding to a **Mach number of 1.2** encountered in the Gaganyaan mission.

What is the test all about?

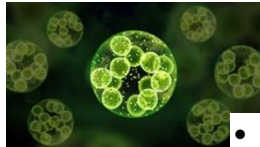
- The abort and crew escape system operates on a similar principle to an ejection seat found in fighter jets, with the primary goal of safeguarding the lives of crew members in the event of in-flight anomalies.
- The **Crew Escape System** is engineered to automatically function across various altitudes should the onboard computer detect any malfunctions.
- This test flight will simulate an abort condition during the ascent trajectory.

Objective: To test a crucial system to be **deployed on the Gaganyaan mission** that will ensure the safety of the Indian astronauts in case of an emergency in the initial phase of the launch.

- CES with CM will be separated from the Test Vehicle at an altitude of about 17 km.
- Subsequently, the abort sequence will be executed autonomously commencing with the separation of CES and deployment of the series of parachutes, finally culminating in the safe touchdown of CM in the sea, about 10 km from the coast of Sriharikota.

WHAT IS MICROALGAE?

Microalgae, which form the base of the food chain in the ocean and capture carbon dioxide from the atmosphere, appear to rely on a unique strategy to cope with global warming, according to a new study.



About Microalgae:

- Microalgae are **microscopic algae**, typically found in **freshwater and marine systems**.
- They are **unicellular species** that **exist individually or in chains or groups**.
- They are **comprised of unicellular algal species**, **g. green algae, diatoms**, and dinoflagellates.
- Depending on the species, their **sizes can range from a few micrometers (μm) to a few hundreds of micrometers**.
- **The color of the algae is influenced by the predominant pigments** in an algal cell. Thus, they are **grouped according to their color: green, red, or brown**.
- Unlike higher plants, microalgae **do not have roots, stems, or leaves**.
- They are **mostly photosynthetic**. Their ability to photosynthesize is **due to the presence of photosynthetic pigments**.

Importance:

- They form the **base of the food chain**, providing essential nutrients for zooplankton, small fish, and other aquatic organisms. They are a **primary food source for filter-feeding organisms**.
- Photosynthetic microalgae play a **vital role in the global carbon and oxygen cycles**. They **absorb carbon dioxide and produce oxygen through photosynthesis**, which helps mitigate climate change and contributes to oxygen generation. They **produce approximately half of the atmospheric oxygen**.
- Microalgae can **form symbiotic relationships** with other organisms. For example, they **live within the tissues of corals (zooxanthellae) and provide them with nutrients through photosynthesis**.

- Some of them are also capable of fixing nitrogen. Eg: Nostoc, Anabaena, and Oscillatoria.
- They are rich in nutrients and can serve as a food source for humans. Spirulina and Chlorella, two types of microalgae, are often consumed as dietary supplements.

What is Macroalgae?

- Macroalgae, commonly called seaweeds, are marine plants that photosynthesize, but reproduce without flowers.
- They are visible to the naked eye (in contrast to microalgae) and generally grow attached to the seabed or reef substrate.
- They are important components of the reef ecosystem, providing food and habitat to a diverse range of species while also playing a key role in nutrient dynamics.

What is an algal bloom?

- An algal bloom is the overgrowth of microscopic algae or algae-like bacteria in fresh, salt, or brackish waters.
- They are a result of excess nutrients from fertilizer, wastewater, and storm water runoff, coinciding with lots of sunlight, warm temperatures, and shallow, slow-flowing water.

WHAT IS GENERAL PROVIDENT FUND (GPF)?

The Department of Personnel and Training (DoPT) recently issued a letter explaining the procedure retiring AIS officers on central deputation can follow to claim GPF.



About the General Provident Fund (GPF):

- It is a type of provident fund account that is available only for government employees in India.
- The primary objective of this fund is to provide a dependable source of retirement income for government employees.
- It allows government employees to accumulate savings over their employment tenure.
- **Eligibility:** The following are eligible to subscribe to a GPF account:
 - All temporary government servants who have given their service continuously for one year

- **All re-employed pensioners** (except those eligible for admission to the contributory provident fund)
- **All permanent government servants**
- **A private sector worker is not eligible** for the General Provident Fund

Contribution:

- It is a **mandatory scheme for government employees**, requiring them to **contribute a certain percentage of their salary** towards the fund.
- The contributions are **deducted from the employee's monthly salary**, and the amount **earns interest at a predetermined rate**.
- **Employees can also increase the GPF deductions** as per their choice.

Withdrawal:

- Employees can withdraw their savings from the fund **upon retirement or resignation from service**.
- A GPF is **flexible, allowing employees to withdraw** money from the fund for various **reasons, such as marriage, education, and medical emergencies**.
- Employees **can also take out loans against their GPF account**, subject to certain conditions.
- **Employees who transfer to another government department or leave their job can withdraw** their GPF balance **or transfer it to their new employer**.
- The GPF sum will be **paid to their nominee** if the employee passes away.
- It also offers a **competitive interest rate, revised quarterly**.
- The GPF scheme is administered by the Department of Pension and Pensioners' Welfare, falling under the **Ministry of Personnel, Public Grievances and Pensions**.
- This scheme offers **several benefits** to government employees, including **tax savings, low-risk investments, and guaranteed returns**.