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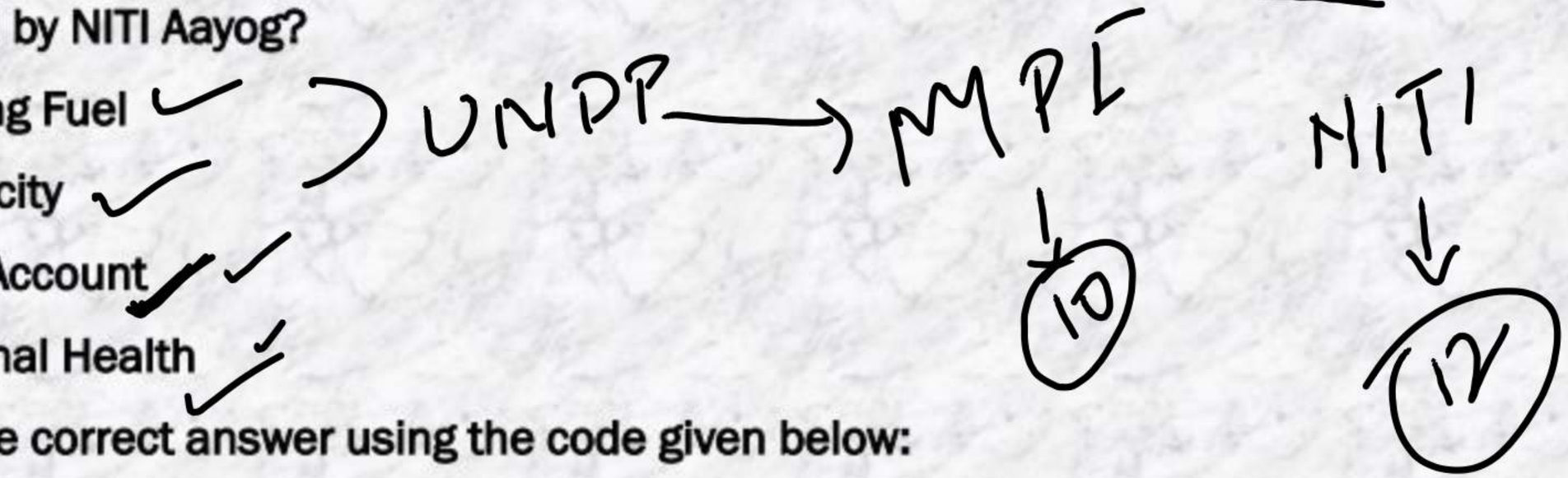
CURRENT AFFAIRS

DISCUSSION
By Kinshuk Sir

Questions for Practice

How many of the following are indicators of the Multidimensional Poverty Index Prepared by NITI Aayog?

1. Cooking Fuel
2. Electricity
3. Bank Account
4. Maternal Health



Select the correct answer using the code given below:

a. Only one

b. Only two

c. Only three

d. All four

Questions for Practice

The Orkney Islands have been in the news frequently. It is located in:

a. South China Sea

b. Arabian Sea

c. North Sea

d. Sargasso Sea

Questions for Practice

Consider the following statements with respect to Gambusia Fish:

1. It is an invasive alien species native to North America
2. It has been introduced in India to increase the fish production

Which of the statements given above is/are correct?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

Questions for Practice

Consider the following statements with respect to the Enforcement Directorate:

1. It can arrest persons under the provisions of the PMLA.
2. It can also directly carry out search and seizure without calling the person for questioning
3. It is under the administrative control of the Ministry of Home Affairs

How many statements given above is/are correct?

a. Only one

b. Only two

c. All three

d. None

Questions for Practice

Consider the following statements with respect to Electoral Bonds

1. There is no cap on the number of electoral bonds that a person or company can purchase.

2. It can be availed by any political party which is duly registered with the Election Commission of India.

Which of the statements given above is/are correct?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

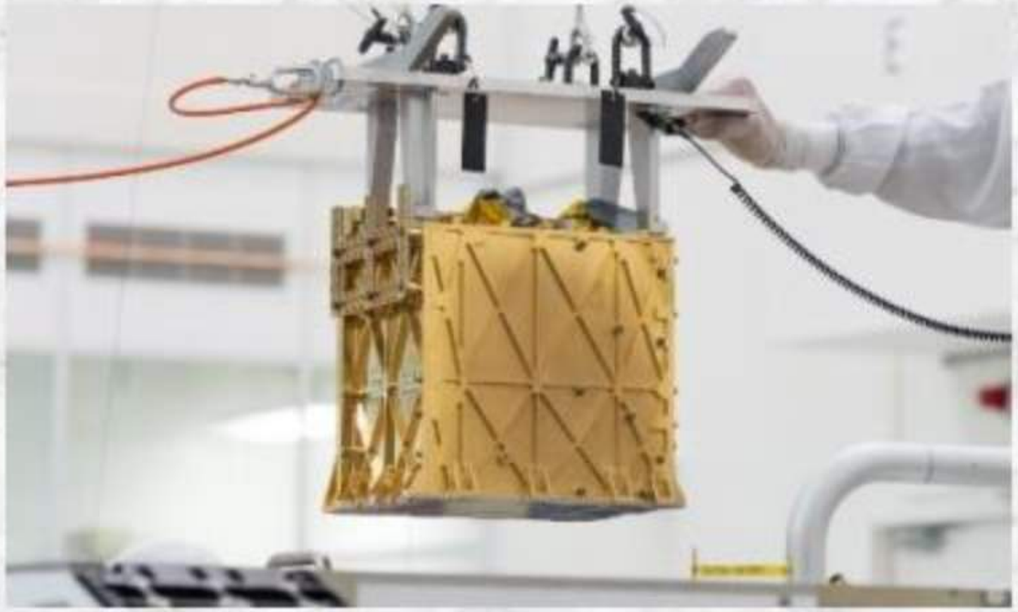
Two Important Updates

- THE CHIEF ELECTION COMMISSIONER AND OTHER ELECTION COMMISSIONERS (APPOINTMENT, CONDITIONS OF SERVICE AND TERM OF OFFICE) BILL, 2023 has recived the Presidential approval
- And hence it is an act now
- Method of Appointment – PM, LoP (Lok Sabha), and Union Minister Nominated by PM

- Schedules in WPA
- Schedule IV contains all three Appendices of CITES

Mars Oxygen In-Situ Resource Utilization Experiment

- The Mars Oxygen In-Situ Resource Utilization Experiment, or MOXIE
- It was launched as part of NASA's Perseverance rover mission and has been successfully making oxygen from the planet's carbon-dioxide-rich atmosphere since it landed there in February 2021.
- MOXIE was able to produce oxygen on seven experimental runs, in a variety of atmospheric conditions, including during the day and night, and through different Martian seasons.
- In each run, the instrument reached its target of producing six grams of oxygen per hour — about the rate of an average tree on Earth.

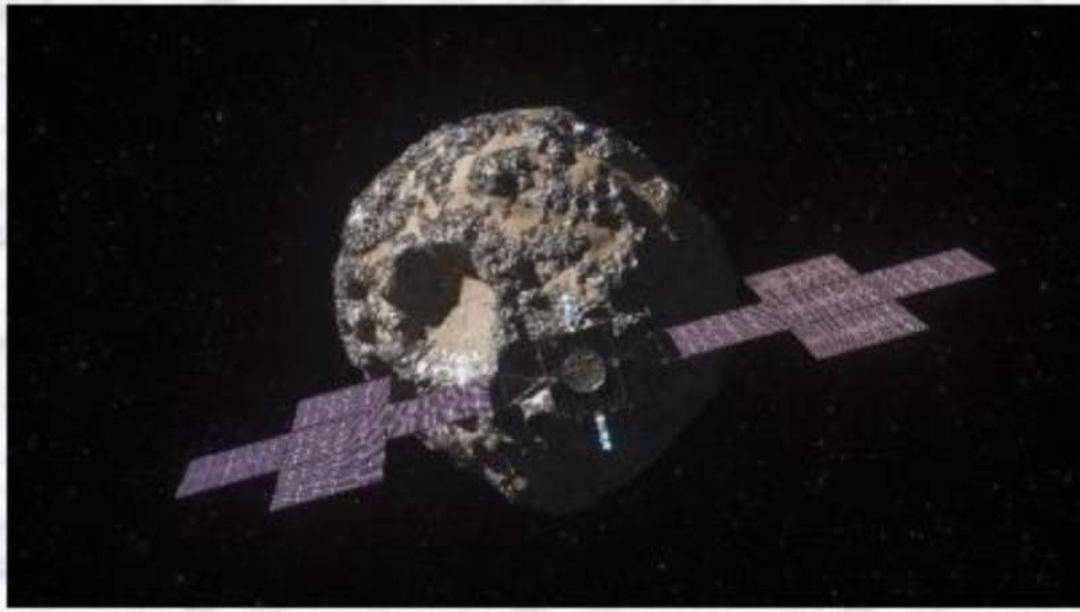


Mars Oxygen In-Situ Resource Utilization Experiment

- A scaled-up version of MOXIE could be sent to Mars ahead of a human mission, to continuously produce oxygen at the rate of several hundred trees.
- At that capacity, the system should generate enough oxygen to both sustain humans once they arrive, and fuel a rocket for returning astronauts back to Earth.
- MOXIE works by first drawing the Martian air in through a filter that cleans it of contaminants.
- The air is then pressurized, and sent through the Solid OXide Electrolyzer (SOXE) that electrochemically splits the carbon dioxide-rich air into oxygen ions and carbon monoxide.
- The oxygen ions are then isolated and recombined to form breathable, molecular oxygen, or O2, which MOXIE then measures for quantity and purity before releasing it harmlessly back into the air, along with carbon monoxide and other atmospheric gases.

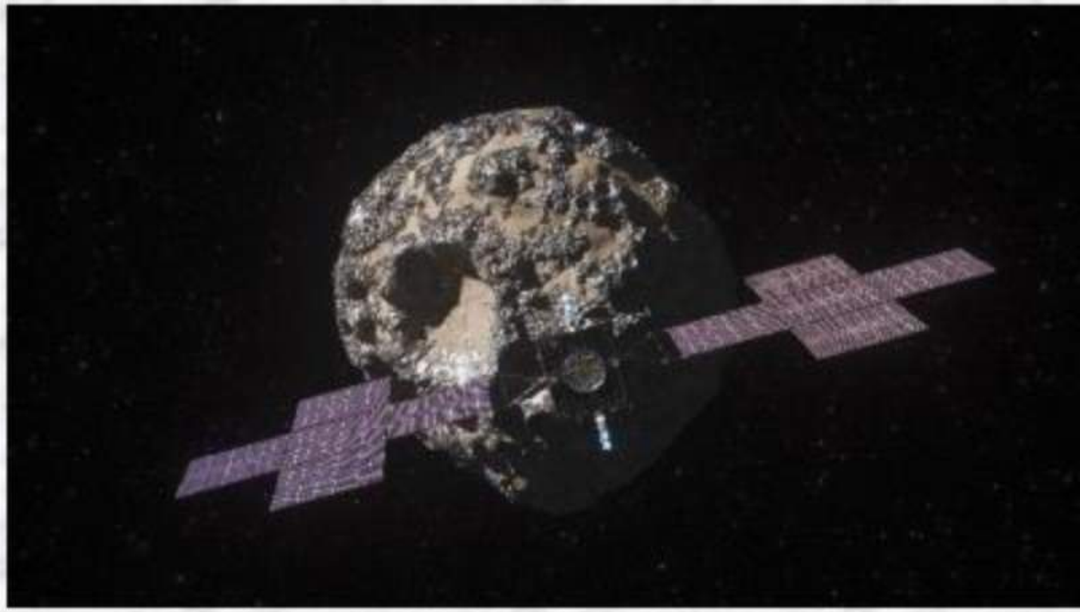
Psyche Mission

- The Psyche mission is a journey to a unique metal-rich asteroid orbiting the Sun between Mars and Jupiter
- The asteroid Psyche appears to be the exposed nickel-iron core of an early planet, one of the building blocks of our solar system
- Deep within rocky, terrestrial planets - including Earth - scientists infer the presence of metallic cores, but these lie unreachably far below the planets' rocky mantles and crusts.
- Because we cannot see or measure Earth's core directly, Psyche offers a unique window into the violent history of collisions and accretion that created terrestrial planets.



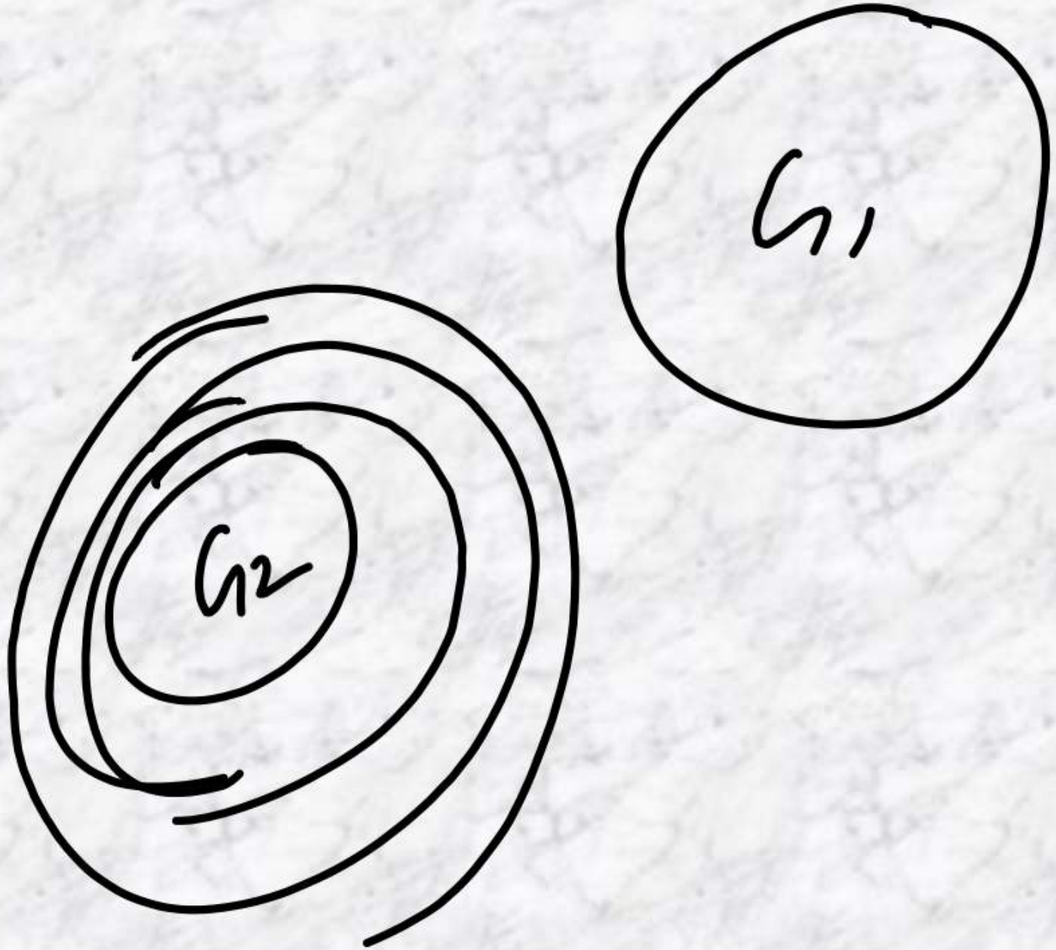
Psyche Mission

- The mission is led by Arizona State University. NASA's Jet Propulsion Laboratory is responsible for mission management, operations and navigation.
- Deep Space Optical Communication (DSOC)
- The Psyche mission will test a sophisticated new laser communication technology that encodes data in photons at near-infrared wavelengths (rather than radio waves) to communicate between a probe in deep space and Earth.
- Using light instead of radio allows the spacecraft to communicate more data in a given amount of time



Galactic Tides

- Like the earth's oceans at their shores, the universe's galaxies also experience tides, but on a much larger scale.
- Galactic tides are caused by gravitational forces within a galaxy, arising in the interactions between celestial objects like stars and gas clouds.
- These tidal forces influence various aspects of a galaxy's evolution.
- They can reshape a galaxy structure by creating tidal tails and bridges, promoting star formation, and disrupting smaller star systems.
- Over aeons, galactic tides also disrupt the orbits of stars, leading to long-term changes in galactic structure.

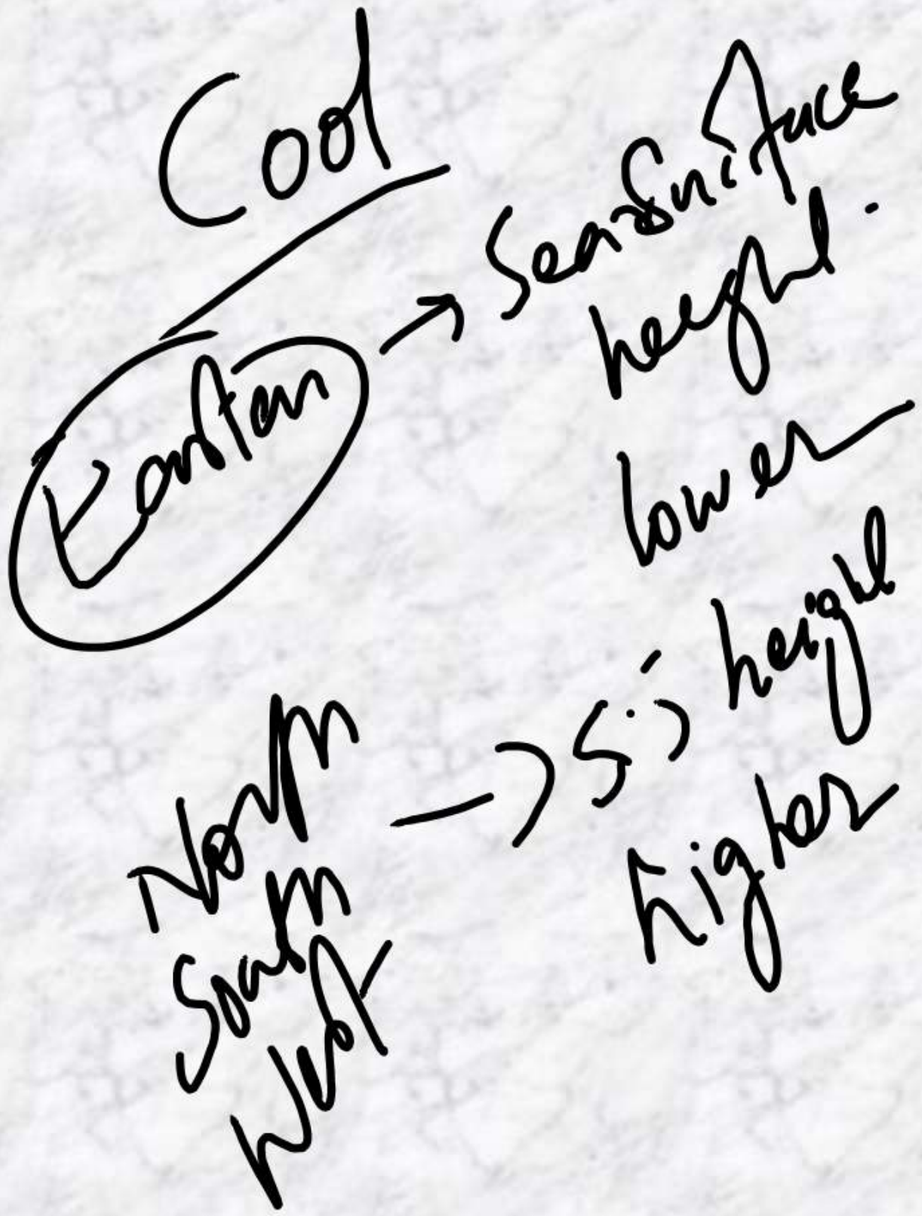


Galactic Tides

- Galactic tides also have a say in the ways in which proximate galaxies do and don't interact.
- Galactic tides also affect the supermassive black holes at galaxy centres, leading to events that change the ways in which these cosmic beasts interact with nearby stars.
- In astronomy, understanding galactic tides is crucial if we are to truly understand the complex dynamics and evolution of galaxies over cosmological time.

PACIFIC DECADAL OSCILLATION

- It is a long-term ocean fluctuation of the Pacific Ocean.
- The PDO waxes and wanes approximately every 20 to 30 years.
- From ocean surface topography data, together with other ocean and atmospheric data, scientists can determine whether we are in a 'cool' phase or a 'warm' phase.
- The 'cool' phase is characterized by a cool wedge of lower than normal sea-surface heights/ocean temperatures in the eastern equatorial Pacific and a warm horseshoe pattern of higher than normal sea-surface heights connecting the north, west and southern Pacific.



PACIFIC DECADAL OSCILLATION

- In the 'warm' or 'positive' phase, the west Pacific Ocean becomes cool and the wedge in the east warms.
- A ‘cool’ phase occurred from 1947 to 1976 (29 years), and a ‘warm’ phase from 1977 to 1999 (22 years).
- In 1999, we entered into a ‘cold’ phase for about 4 years (1999-2002) followed by a ‘warm’ phase that continued for 3 years.
- The phase was then neutral until 2007, when we entered into a ‘cold’ phase that lasted through 2013.
- The last PDO phase shift was in 2014, when it turned strongly positive (‘warm’).
- The PDO is an active topic of research and satellite data, such as that from Jason-3, helps scientists observe and understand the phenomenon.

P Pacific decadal oscillation

Cool ↔ Warm

Cool Phase ↕ Warm phase

East. P (HL) / West P (HP)

West P ↓

E. Pacific (T) ↑

ECOCIDE

- Ecocide is the mass destruction of nature by humans.
- It can also be defined as the process of environmental degradation, either through nature or human activity
- Ecocide is a root cause of the climate and ecological emergency that we face today.
- It threatens all human populations who depend on natural resources to maintain ecosystems and support future generations.
- In 2021, the concept of ecocide was given a legal definition.
- It is defined as "any unlawful or arbitrary act perpetrated in the knowledge that it is highly likely to cause serious, extensive or lasting damage to the environment

MONOCLONAL ANTIBODIES (MABS)

- Monoclonal antibodies (mAbs) are proteins that are produced in laboratories to act like antibodies in the body.
- They are made by homogeneous hybrid cells called B cells that are clones of the same parent cell.
- They can recognize and bind to specific proteins or cells in the body
- mAbs can be used as substitute antibodies to restore, enhance, modify, or mimic the immune system's attack on cells that aren't wanted, such as cancer cells.
- Some mAbs are a type of immunotherapy that work by triggering the immune system and helping it to attack cancer
- The mAb production process involves creating large quantities of identical antibodies

SCRUB TYPHUS DISEASE

- Scrub typhus is an emerging infectious disease with seasonal flare caused by the bacterium 'Orientia tsutsugamushi'
- "It is majorly spread in human beings by the bites of infected mites known as chiggers.
- These mites are usually present in dense forest green environments and tall grasses.
- It is commonly found in the Asia-Pacific region, including India, and is more prominent during rains and in hilly areas

SCRUB TYPHUS DISEASE

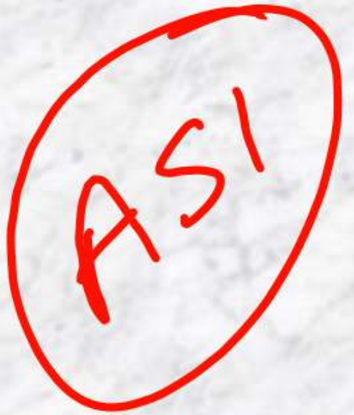
- The people living in rural or forested areas, being involved in outdoor activities such as farming, camping or hiking in endemic regions, and lack of protective measures are prone to this disease.
- The symptoms include fever, headache, muscle pain, rashes, and swollen lymph nodes
- Additionally, a characteristic feature of scrub typhus is an eschar (a type of necrotic tissue that can develop on severe wounds), a dark, scab-like lesion at the site of the chigger bite.
- Without treatment, severe cases can lead to organ dysfunction, including respiratory and renal failure

Adopt a Heritage 2.0' programme

- It seeks to foster collaboration with corporate stakeholders through which they can contribute to preservation of these monuments for the next generations.
- Under this programme, ASI invites corporate stakeholders to enhance the amenities at the monuments by utilizing their CSR funds
- The stakeholders can apply for adopting a monument or specific amenities at a monument through a dedicated web portal
- It seeks to foster collaboration with corporate stakeholders through which they can contribute in preserving these monuments for our upcoming generations

Adopt a Heritage 2.0' programme

- The selected stakeholders will develop, provide and maintain amenities in hygiene, accessibility, safety and knowledge categories.
- In doing so, they will get an opportunity to be recognized as a responsible and heritage-friendly entity.
- The term of the appointment will be for a period of five years initially, which may be further extended up to five years



Rashtriya Vigyan Puraskar (RVP)

- The Government of India has come out with a new set of National Awards in the field of Science, Technology and Innovation known as "Rashtriya Vigyan Puraskar"
- To recognize and honor exceptional contributions in the fields of science, technology, and technology-led innovation in India, encouraging innovation and research.
- Categories:
- Vigyan Ratna (VR): Lifetime achievements in science and technology.
- Vigyan Shri (VS): Distinguished contributions in science and technology.
- Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB): Recognizing young scientists (up to 45 years) for exceptional contributions.
- Vigyan Team (VT): Team contributions of three or more scientists/researchers/innovators.

Rashtriya Vigyan Puraskar (RVP)

- Eligibility:
- Scientists, technologists, and innovators working in government or private organizations.
- Individuals or teams with path-breaking research, technology-led innovation, or discoveries with significant societal impact.
- Scientists of Indian origin abroad with exceptional contributions benefiting Indian communities or society.
- Nomination and Selection Process:
- Nominations open annually from January 14th to February 28th (National Science Day).
- Awards announced on May 11th (National Technology Day) each year.
- Award Ceremony held on August 23rd (National Space Day).
- Rashtriya Vigyan Puraskar Committee (RVPC) reviews nominations and makes recommendations.

Rashtriya Vigyan Puraskar (RVP)

- Awards:
- Sanad (certificate) and medal for each award category.
- Recognition as one of the highest honors in science, technology, and innovation in India.
- Significance:
- Recognizes and celebrates achievements of the scientific community.
- Promotes transparency and fairness in the selection process.
- Provides equal recognition to scientific innovators and technologists.
- A transformative step in acknowledging scientific accomplishments at the highest level.

Places in News: Nagorno Karabakh Region, Mali, Burkina Faso, and Niger

- Context: On September 20, Azerbaijan claimed full control over the contentious Nagorno-Karabakh region after local forces, mostly Armenians, agreed to be disarmed and disbanded. Hundreds of local Armenians fled the area overnight, fearing ethnic cleansing by Azerbaijan.

Places in News: Nagorno Karabakh Region, Mali, Burkina Faso, and Niger

- Mali, Burkina Faso, Niger
- Context: In a joint statement, the leaders of Niger, Mali, and Burkina Faso declared that they had made the "sovereign decision" to quit the influential regional bloc of 15 member countries, i.e ECOWAS
- For months now, tensions have been running high between these three countries and ECOWAS, which imposed sanctions on them after coups that took place in Mali in 2020, Burkina Faso in 2022, and Niger in July 2023.

Automated Permanent Academic Account Registry- APAAR

October 2023

- APAAR, which stands for Automated Permanent Academic Account Registry, is envisioned as a special ID system for all students in India, starting from childhood.
- Under the initiative, each student would get a lifelong APAAR ID, making it easy for learners, schools, and governments to track academic progress from pre-primary education to higher education.
- This initiative was launched as part of the National Education Policy 2020 by the Education Ministry.
- It aims to reduce fraud and duplicate educational certificates by providing a single, trusted reference for educational institutions.
- Only first-party sources that issue certificates will be allowed to deposit credits into the system, ensuring authenticity.

Automated Permanent Academic Account Registry- APAAR

- Every individual will have a unique APAAR ID, which will be linked to the Academic Bank Credit (ABC), which is a digital storehouse that contains information of the credits earned by students throughout their learning journey.
- With the APAAR ID, students would be able to store all their certificates and credits, whether they come from formal education or informal learning.
- When a student completes a course or achieves something, it's digitally certified and securely stored in her account by authorised institutions.
- If the student changes schools, whether within the state or to another state, all her data in the ABC gets transferred to her new school just by sharing the APAAR ID. She won't need to provide physical documents or transfer certificates.

PUSA 44 Banned

- PUSA-44 was developed in 1993 by the Delhi-based Indian Council of Agricultural Research (ICAR). Subsequently, Punjab's farmers started sowing it in a few areas initially.
- After getting a high yield from the crops, they started increasing the area under PUSA-44 by multiplying the seed.
- By the end of 2010s, it had gained widespread popularity among farmers across the Punjab, covering approximately 70 to 80% of the area under paddy cultivation.

PUSA 44 Banned

- Why has the Punjab Agriculture Department discouraged its cultivation?
- PUSA-44 is a long-duration variety, taking around 160 days to mature.
- This is around 35 to 40 days more than other varieties, requiring 5-6 extra cycles of irrigation.
- With Punjab facing severe groundwater depletion and the availability of short-duration paddy varieties, the government aims to conserve one month of irrigation water by banning the variety.
- As many as 102 of the state's 141 agricultural development blocks were declared 'dark zones', in which the rate of groundwater depletion exceeded the rate of recharge, and the water was available at depths of 200 to 300 feet or more – extractable only by using deep tube wells.

PUSA 44 Banned

- How does PUSA-44 aggravate stubble burning in Punjab?
- Due to its extended maturity period, PUSA-44 is harvested just before the sowing of wheat, typically at the end of October, while the ideal time for wheat sowing is November 1. So it also aggravates the incidences of stubble burning.

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