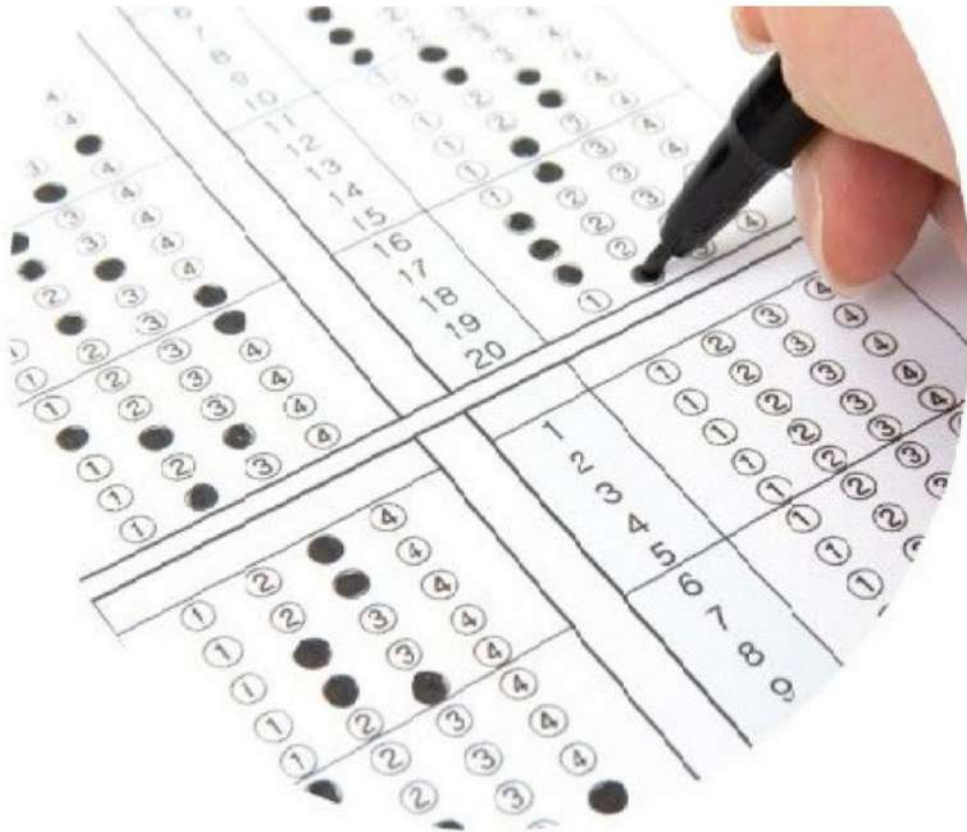




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MONTHLY PRESTORMING AUGUST 2024

A compilation of Prelims MCQs with solutions from Current
Affairs of the month



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MONTHLY PRESTORMING

August 2024

01-08-2024

1) Consider the following statements with respect to PET-MR (Positron Emission Tomography-Magnetic Resonance) guided Radiotherapy (RT)

1. It combines the functional imaging capabilities of PET with the anatomical and soft tissue contrast of MR imaging.
2. It aids to improve the precision and accuracy of radiation therapy treatment planning and delivery.
3. It provides metabolic information about the tumour and surrounding tissues, such as glucose metabolism.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

2) Consider the following statements with respect to Unicorn Start-up

1. It is a term used to describe a privately held start-up company with a value of over 1000 million dollars.
2. Bengaluru is India's unicorn capital with the largest number of unicorn's headquarters followed by Delhi (NCR) and Mumbai.

Which of the above statement(s) is/are **incorrect**?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements with respect to 'One Scientist One Product'

1. It aids to improve research in the field of agriculture and animal husbandry.

2. It was launched by the Indian Agriculture Research Institute.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Robot Tax

1. It is imposed on employers who adopt Artificial Intelligence technologies that lead to job losses.
2. Taiwan is the first country to introduce robot tax.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

5) Consider the following statements with respect to Intergovernmental Negotiating Body (INB)

1. It aids to draft and negotiate a convention, agreement or other international instrument to strengthen pandemic prevention, preparedness and response.
2. It works under the aegis of the World Health Organization (WHO).
3. Its work is based on the principles of inclusiveness, transparency, efficiency, Member State leadership and consensus.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

Answers

1. c

PET-MR (Positron Emission Tomography-Magnetic Resonance) guided Radiotherapy (RT)

- PET-MR guided radiotherapy (RT) combines the functional imaging capabilities of PET with the anatomical and soft tissue contrast of MR imaging.
- It aids to improve the precision and accuracy of radiation therapy treatment planning and delivery.
- **Benefits** – Improves soft tissue contrast compared to traditional CT scans.
- It provides **functional information about tumour metabolism and aggressiveness**.
- Enhances accuracy in target delineation.
- Enables real-time imaging and monitoring for adaptive radiotherapy.
- Reduces uncertainty in treatment planning and response assessment.

2. d

Unicorn Start-up

- A unicorn start-up is a term used to describe a privately held start-up company with a valuation of over 1 billion dollars or 1000 million dollars.
- The term was **coined by Aileen Lee**.
- Unicorn start-ups are often innovative and disruptive companies that operate in various sectors, such as technology, e-commerce, finance, healthcare, and more
- **Unicorns in India** – Unicorns in India are seen as game-changers in their respective industries and have the potential to reshape markets or create new ones
- As of May 2024, the Indian Start-up Ecosystem, ranking third globally in terms of unicorn count, collectively valued at 349.67 billion dollars.
- Bengaluru is India's unicorn capital with the largest number of unicorn's headquarters followed by Delhi (NCR) and Mumbai.
- **Examples** of well-known unicorn start-ups include BYJU's, Swiggy, OYO Rooms, Dream11, Razorpay, and Ola Cabs.

- They are typically characterised by disruptive innovation, scalability, market demand, strong leadership, successful funding rounds, and rapid growth milestones.
- They create job opportunities, attract investments, disrupt traditional industries, introduce new technologies and business models, and contribute to the overall transformation of markets.

3. a

One Scientist One Product (OSOP)

The Indian Council of Agricultural Research (ICAR) will launch its 'One Scientist-One Product' to improve research in the field of agriculture and animal husbandry.

- One Scientist One Product a target-oriented research plan to improve research in the field of agriculture and animal husbandry.
- The plan will be carried out for next **5 years** and regularly monitored from the top so that maximum productivity is driven without duplicity of efforts.
- OSOP will be **launched by the Indian Council of Agricultural Research (ICAR)**.
- At the beginning of every year, the scientist or a group of scientists will have to identify the product, and the ICAR will map the scientist's or the group's work.
- ICAR have assigned every scientist with a target that they have to come out with a product which includes seed variety, technology or some research paper or some model/concept.
- ICAR is also working to develop 100 new seed varieties and 100 farm technologies in 100 days as part of the Centre's 100-day action plan.

4. a

Robot Tax

In recent times few Indian economists have recommended Indian Finance minister for imposition of robot tax to reduce job cut due to adoption of Artificial Intelligence.

- Robot Tax is imposed on employers/companies who adopt AI technologies that lead to job losses.
- The revenue from this tax would be used to fund the upskilling of workers who lose their jobs due to AI adoption.

- AI's impact on employment is being discussed globally, including in a recent International Monetary Fund (IMF) paper.
- **South Korea was the first country in the world to pass a robot tax law in 2017.**
- A tax deduction for organizations that invest in robotics and automation of 3-7% encouraged entrepreneurs to develop and use more technology.
- South Korea currently has the highest robot density in the world of 1,000 robots/10,000 human workers, 8 times the global average.

5. c

Intergovernmental Negotiating Body (INB)

The 77th World Health Assembly (WHA) has recently extended the mandate of the INB to complete the proposed WHO Pandemic Agreement as soon as possible.

- Intergovernmental Negotiating Body (INB) was established by the World Health Organization (WHO) in December 2021.
- It aids to draft and negotiate a WHO convention, agreement or other international instrument to strengthen pandemic prevention, preparedness and response.
- Its work is based on the principles of inclusiveness, transparency, efficiency, Member State leadership and consensus.
- **Timeline** – The INB is working towards submitting its final outcome to the 77th World Health Assembly in May 2024 about the global pandemic treaty.
- **Key articles under discussion** – The INB is focusing on several contentious articles, including:
 - Articles 4 and 5 (Pandemic prevention and One Health approach)
 - Article 9 (Research and development)
 - Article 11 (Technology transfer and know-how)
 - Article 12 (Access and benefit-sharing)
 - Article 13 (Supply chain and logistics)
- **Working method** – The INB uses a combination of plenary sessions, drafting group meetings, and informal intersessional meetings to progress its work.
- **Participation** – Plenary sessions are open to WHO Member States, Associate Members,

regional economic integration organizations, and relevant stakeholders. Drafting Group sessions have more limited attendance.

- **Coordination** – The INB is working to ensure coherence and complementarity with the Working Group on Amendments to the International Health Regulations (WGIHR).

02-08-2024

1) Consider the following statements:

1. Haematite and magnetite are the most important iron ores in India.
2. Jharkhand alone contributes 72% of magnetite deposit in India.
3. India is the largest Aluminium producer in the world.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

2) Consider the following statements with respect to Indian Institute of Corporate Affairs (IICA)

1. It provides induction and training to the central civil servants of the Indian corporate law service cadre.
2. It is an autonomous institute that works under the aegis of the Ministry of Corporate Affairs.
3. School of Business Environment is a specialised vertical within IICA.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

3) Consider the following statements with respect to Self-Reliant India (SRI) Fund

1. It aids to channelize diverse variety of funds into underserved Micro, Small and Medium Enterprises (MSMEs).

2. It is in the form of Category I Alternative Investment Fund (AIF).
3. The Fund is an investment strategy of holding a portfolio of other investment funds, rather than investing directly.

How many of the statements given above are **incorrect**?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

4) Consider the following statements with respect to Coastal Sea Wolves

1. They are fast, powerful and distance swimmers that can move stealthily in the water.
2. They are genetically different from other wolves.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

5) Consider the following statements with respect to Mud Flow

1. It is a flow of water that is made up of a lot of rain water flowing fast and transporting earth particles, rocks, trees and anything in its path.
2. The occurrence of mud flows is directly related to extreme rain events.
3. It has a lower density and viscosity than a streamflow.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

1. a

Minerals in India

- **Aluminium** – It is a lightweight silvery white metal of main Group 13 (IIIA, or boron group) of the periodic table.
- It is the most abundant metallic element in Earth's crust and the most widely used nonferrous metal.
- **India is the 2nd Largest Aluminium Producer in the world.**
- **China** is the largest aluminium producer in the world.
- **Odisha** is the largest producer of aluminium in India.
- **Limestone** – Is a sedimentary rock that is primarily made up of calcium carbonate (CaCO₃) in the form of the mineral's calcite and aragonite.
- It forms when these minerals precipitate out of water that contains dissolved calcium.
- In 2023, **China** was the world's top producer of lime.
- **India** is the **3rd largest** lime producer in the world and **Rajasthan** is the largest producer of limestone in India.
- **Iron Ore** – The mining of iron ore is an essential raw material for Iron & Steel Industry is arguably of prime importance among all mining activities undertaken by any country.
- **Haematite and magnetite** are the **most important iron ores in India.**
- About 79% haematite ore deposits are found in the Eastern Sector (Assam, Bihar, Chhattisgarh, Jharkhand, Odisha and Uttar Pradesh).
- About 93% magnetite ore deposits occur in Southern Sector (Andhra Pradesh, Goa, Karnataka, Kerala and Tamil Nadu).
- **Karnataka alone contributes 72% of magnetite deposit in India.**
- Indian deposits of haematite belong to the **Precambrian Iron Ore Series** and the ore is within banded iron ore formations occurring as massive, laminated, friable and in powdery form.
- **India** is the **4th largest iron ore** producer in the world.

Answers

- The largest iron ore-producing country is **Australia**.

2. c

Indian Institute of Corporate Affairs (IICA)

- Indian Institute of Corporate Affairs (IICA) is an autonomous institute that works under the aegis of the Ministry of Corporate Affairs.
- It provides induction and training to the central civil servants of the Indian Corporate Law Service Cadre.
- It is a unique world-class institution functioning as a think tank, action research, policy advocacy, service delivery, and capacity-building support to the Ministry, corporate sector.
- It is a holistic think-tank and service delivery institute to help corporate growth, reforms, and regulation through synergized knowledge management, global partnerships and real-time solutions.
- School of Business Environment (SBE) is a specialised vertical within IICA promoting responsible business conduct focusing on the forward-looking areas such as:
 - Environmental-Social-Governance (ESG) and Corporate Social Responsibility (CSR),
 - Sustainable Finance, Business & Biodiversity Conservation, Business and
 - Human Rights, Responsible Trade, Non-Financial Reporting & auditing; Audit, and other aligned areas.
- The school has been providing technical expertise to various Ministries and Agencies of the Govt. of India, State Governments, Corporates, Board Members, professionals and other stakeholders.

3. a

Self-Reliant India (SRI) Fund

- Self-Reliant India (SRI) Fund aids to channelize diverse variety of funds into underserved Micro, Small and Medium Enterprises and address the growth needs of viable and high growth MSMEs.
- **Objectives** – It provide funding support to Daughter Funds for onward provision to MSMEs as growth capital.

- Enhance equity financing and listing of MSMEs on stock exchanges.
- Support faster growth of MSME businesses and job creation.
- It is an **investment strategy of holding a portfolio of other investment funds, rather than investing directly**.
- Help MSMEs become national/international champions and contribute to India's self-reliance.
- **Structure** – The SRI Fund will be a **Category II Alternative Investment Fund (AIF)**.
- It will consist of a Mother Fund and multiple Daughter Funds.
- The Mother Fund will provide funds to Daughter Funds, which will then invest in MSMEs.
- **Fund Corpus** – The Government of India will provide Rs. 10,000 crore as initial support to the Mother Fund.
- Daughter Funds will raise 80% of funds from outside sources and receive 20% from the Mother Fund.
- The total leveraged amount is expected to reach Rs. 50,000 crores.
- **Key Features** – 15-year fund life with a 6-year commitment period.
- Fund managers should have at least 5 years of experience in growth funding.
- The fund aims to create an MSME investment ecosystem involving various financial institutions.
- **Governance** – A SPV with 100% equity from NSIC will anchor the Mother Fund.
- An Advisory Board chaired by the Secretary (MSME) will oversee the fund.
- A professional Investment Committee will make investment decisions.
- **Investment Strategy** – The Mother Fund will invest only through approved Daughter Funds.
- Daughter Funds must be registered as Category I or II AIFs with SEBI.
- Focus on traditional manufacturing and service MSMEs.

- **Commercials** – Management fee of 1% for the SPV and up to 0.50% for the Fund Manager.
- **Risk Management** – Both Mother and Daughter Funds must have financial risk management and environmental/social safeguard systems in place.

4. c

Coastal Sea Wolves

- The Vancouver Island wolf, also known as the coastal wolf or sea wolf is a subspecies of grey wolf, endemic to the coast of the Pacific Northwest.
- They are fast, powerful and distance swimmers.
- **Features** – They move stealthily in the water, with their backs and bodies submerged and only their ears, eyes and snouts break through to the surface.
- They are **genetically distinct from mainland wolves**, even though geographically the two are close neighbours.
- Many of these wolves migrate through the archipelago, swimming from island to island throughout the year.
- **Distribution** – At present, they have an extensive range, from southern Alaska, **USA** to south to Vancouver Island, **Canada**.
- **Diet** – The coastal wolves eat shellfish and use their paws to dig in the sand for clams and use their powerful jaws to crack open the shells of mussels.
- They have also been known to snack on sea otters along with terrestrial animals.
- **Threats** – Climate change, industrial logging and trophy hunting.



5. b

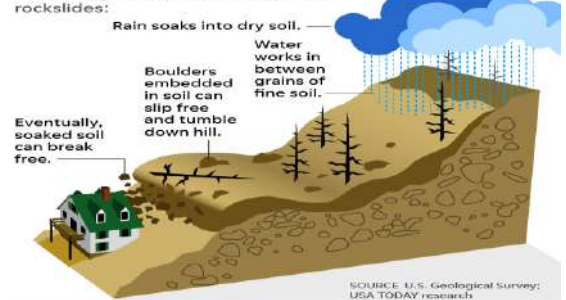
Mud Flow

The recent Kerala's Wayanad landslide can be classified as Mud Flow.

- Mudflow is a flow of water that contains large amounts of suspended particles and silt.
- It is flow of water that is made up of a lot of rain water flowing fast and transporting earth particles, rocks, trees and anything in its path.
- It has a **higher density and viscosity than a streamflow** and can deposit only the coarsest part of its load.
- It occurs on steep slopes where vegetation is not sufficient to prevent rapid erosion but can occur on gentle slopes if other conditions are met.
- Other factors are *heavy precipitation in short periods* and an easily erodible source material.
- **The occurrence of mud flows is directly related to extreme rain events.**
- Mudflows *can be generated in any climatic regime* but are most common in arid and semiarid areas.
- Mudflow deposits are poorly sorted mixtures of silt, boulders, organic materials, and other debris.
- Pierre Rognon, Associate Professor has classified the recent wayanad landslide as mud flow.

Anatomy of a mudslide

How heavy rain can cause mud- and rockslides:



03-08-2024

1) Consider the following statements with respect to Central Electricity Authority (CEA)

1. It is established under the Electricity (Supply) Act, 1948.
2. It advises the Union Government on the matters relating to the national electricity policy.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements with respect to Rashtriya Krishi Vikas Yojana

1. It is an umbrella scheme for ensuring holistic development of agriculture and allied sectors.
2. "Innovation and Agri-Entrepreneurship Development" is a component under it.
3. The State level sanctioning committee meeting (SLSC) is headed by the Union Minister of the Ministry of Agriculture & Farmers' Welfare.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

3) Consider the following statements with respect to Woody Encroachment

1. It entails the conversion of open habitats to habitats with greater tree cover or shrub cover and it is widespread across most ecosystems.
2. It is a direct result of human-driven factors.
3. It has brought down the population of grassland specialist rodents in the Banni grasslands of Kutch.

How many of the statements given above are correct?

- a. Only one
- b. Only two

c. All Three

d. None of the above

4) Consider the following statements with respect to Cape Fur Seals

1. It is the only seal species that is truly native to the South African mainland.
2. They are semi-aquatic mammals that are carnivores.
3. Their closest living land relatives are bears and raccoons.

How many of the statements given above are **incorrect**?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

5) Consider the following statements with respect to Women Entrepreneurship Program

1. It is designed to address the distinct challenges that women face when starting and growing businesses.
2. Financial support is provided under the program.
3. It was launched by the National Skill Development Corporation (NSDC).

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

Answers

1. c

Central Electricity Authority (CEA)

Central Electricity Authority (CEA) have recently accorded concurrence to two Hydro Pumped Storage Plants to support faster energy transition with large scale integration of renewable capacity in the country.

- Central Electricity Authority (CEA) is a statutory organization originally **established under the Electricity (Supply) Act, 1948**.
- Electricity (Supply) Act, 1948 was repealed and substituted by the electricity act, 2003.
- **Composition** – It consist of not more than 14 Members (including its Chairperson) of whom not more than 8 shall be full-time Members to be appointed by the Central Government.
- The Union Government may appoint any person, eligible to be appointed as Member of the Authority, as the Chairperson of the Authority, or designate one of the full time Members as the Chairperson of the Authority.
- The Chairperson and all the Members of the Authority shall hold office during the pleasure of the Union Government.
- The Chairperson shall be the Chief Executive of the Authority.
- **Functions and duties – It advise the Central Government on the matters relating to the national electricity policy.**
- It formulates short-term and perspective plans for development of the electricity system and co-ordinate.
- To specify the technical standards for construction of electrical plants, electric lines and connectivity to the grid.
- To specify the safety requirements for construction, operation and maintenance of electrical plants and electric lines.
- To promote measures for advancing the skill of persons engaged in the electricity industry.
- **Hydro Pumped Storage Projects (PSPs)** – Are hydroelectric power systems that use two reservoirs at different elevations to store energy and generate electricity.
- India needs Hydro Pumped Storage Projects (PSPs) to support faster energy transition with large scale integration of renewable capacity in the country and also ensuring energy security.

2. b

Rashtriya Krishi Vikas Yojana

- Rashtriya Krishi Vikas Yojana was initiated in 2007 as an umbrella scheme.
- It aims to ensure holistic development of agriculture and allied sectors by allowing states to choose their own agriculture and allied sector

development activities as per the district/state agriculture plan.

- Till 2013-14, the scheme was implemented as an Additional Central Assistance (ACA) to State Plan Scheme with 100% central assistance.
- It was converted into a Centrally Sponsored Scheme in 2014-15 also with 100% central assistance.
- Since 2015-16, the funding pattern of the scheme has been altered in the ratio of 60:40 between Centre and States (90:10 for North-Eastern States and Himalayan States).
- For Union Territories the funding pattern is 100 % central grant.
- It incentivizes states to increase public investment in agriculture and provides flexibility to states in project selection and implementation.
- **State Level Sanctioning Committee (SLSC) being headed by the Chief Secretary** of the concerned State approves projects.
- Sub schemes of PKVY are:
 - Bringing Green Revolution to Eastern India,
 - Drought mitigating interventions for Additional Fodder Production Programme (AFDP),
 - Saffron Mission and Crop diversification Program,
 - Livestock Health & Disease Control / Foot & Mouth Disease (FMD) and
 - Targeting Rice Fallow Areas (TRFA) and Beekeeping Mission.
- **Innovation and Agri-Entrepreneurship Development** – It is a component under the Rashtriya Krishi Vikas Yojana.
- It was launched with the objective of promoting innovation and agri-entrepreneurship by providing financial support and nurturing the incubation ecosystem.
- Under this programme, start-ups are encouraged to use innovative technologies to resolve challenges faced in agriculture and allied sectors.

3. c

Woody Encroachment

A recent study found that Woody Encroachment in African savannahs reduced grassland bird populations by over 20%.

- Woody encroachment is the increase of tree and shrub cover in open habitats, leading to ecosystem homogenization.
- It entails the conversion of open habitats to habitats with greater tree cover or shrub cover and it is widespread across most ecosystems.
- Woody encroachment is a direct result of human-driven factors that are changing the disturbance regimes open ecosystems need to thrive.
- Succession of woody species changes the soil conditions, which changes the grass species and faunal association.
- Woody encroachment brought down the population of grassland specialist rodents in the Banni grasslands of Kutch.
- Woody encroachment in grasslands has also received a leg-up from large-scale tree plantation programmes.
- In the Banni grasslands, studies have found that the spread of the invasive species *Prosopis juliflora*.
- Factors contributing to woody encroachment include:
 - Disruption of natural disturbance regimes (e.g., grazing, fire).
 - Climate change (increased CO₂ favors tree growth).
 - Human activities (fire suppression, fragmentation).
 - Colonial and modern conservation policies misclassifying open ecosystems.

4. d

Cape Fur Seals

In response to the unprecedented occurrence of rabies in a marine mammal population, South African officials plan to initiate experimental vaccination programs for Cape fur seals.

- Cape fur seals is also known as South African seals or brown seals.
- It is the only seal species that is truly native to the South African mainland.
- They are semi-aquatic mammals that are carnivores.

- They spend their time at sea hunting, and their time on land caring for their young, resting, healing and moulting.
- Cape fur seals **are not "true seals"** as their ears have external flaps, large fore flippers and their hind flippers are not connected to the pelvis and can be rotated forward.
- These adaptations give these seals the ability to walk and gallop on land, hear the direction of sound in air, and swim and manoeuvre much more powerfully than true seals.
- **3 families** – Seals are divided into three families such as:
 1. Fur seals (Otariidae)
 2. True seals (Phocidae)
 3. Walruses (Odobenidae)
- At present, there are 33 living species of seals across the globe.
- All seals have a common ancestor, and genetic testing has shown that their closest living land relatives are bears and raccoons.
- This extended family is known as the carnivorans.
- The gestation period for a Cape fur seal is eight months.

5. c

Women Entrepreneurship Program

To empower women entrepreneurs and spur economic growth, the National Skill Development Corporation (NSDC) has recently unveiled the Women Entrepreneurship Program.

- Women Entrepreneurship Program is designed to address the distinct challenges that women face when starting and growing businesses.
- It was **launched by the National Skill Development Corporation (NSDC)**, in partnership with Britannia Industries Limited.
- It will **offer financial grants** and feature their products and services on the Skill India Digital Hub.
- This initiative aims to tackle the challenges faced by women in entrepreneurship by offering crucial skills, knowledge, and networking opportunities.
- The program has been launched with the introduction of complimentary self-learning basic entrepreneurship courses available in

multiple languages on the Skill India Digital Hub.

- Upon completion of these courses, participants will receive a co-branded certificate from NSDC, Britannia Industries and NIESBUD, acknowledging their entrepreneurial skills and competencies.
- This initiative aims to empower approximately 25 lakh women across India, providing them with the skills, knowledge, and resources needed to start and grow successful businesses.
- The initiative will culminate in a grand finale where the top 50 contestants will present their business ideas to a distinguished jury.
- To further encourage innovation and excellence, Britannia Industries will award financial grants of 10 lakh rupees each to 10 of the most successful contestants.

05-08-2024 & 04-08-2024

1) Consider the following statements with respect to CAR-T Cell Therapy

1. Unlike traditional treatments, CAR-T therapy uses the patient's own modified immune cells system to fight cancer.
2. 'NexCAR19' is the India's first indigenously developed CAR-T cell therapy.
3. Like chemotherapy, CAR-T cells are engineered to target specific antigens on cancer cells, potentially reducing side effects.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

2) Imazethapyr, sometimes seen in the news recently, is associated with?

- a. Heterotrophs that obtain nutrients by consuming detritus.
- b. A unique traditional form of theatre native to Manipur.
- c. An herbicide of idazolinone class to control weeds.
- d. An insectivorous fish that has a high breeding capacity.

3) Consider the following statements with respect to Global Alliance for Improved Nutrition (GAIN)

1. It is a multi-stake holder alliance of Governments, International Organizations and Industries to fight for improved nutrition.
2. The members of the alliance include India, Canada and Singapore.
3. Global Nutrition Report is an initiative of it.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

4) Consider the following statements:

Statement-I: Low-Dose Computed Tomography (LDCT) can significantly diminish the number of fatalities attributed to lung cancer.

Statement-II: Low-Dose Computed Tomography (LDCT) uses five times more radiation than a conventional CT scan to detect the cancer at an early stage.

Select the correct answer using the codes given below:

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect
- d. Statement-I is incorrect but Statement-II is correct

5) Consider the following statements with respect to Laboratory Chemicals

1. Only organic chemicals can be classified as the Laboratory Chemicals.
2. There is no customs duty for critical laboratory chemicals.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only

- c. Both 1 and 2
- d. Neither 1 nor 2

Answers

1. b

CAR-T Cell Therapy (chimeric antigen receptor T-cell therapy)

- CAR-T cell therapy or Chimeric Antigen Receptor T-cell therapy is an immunotherapy approach in cancer treatment.
- This innovative technique harnesses the power of the patient's own immune system to combat cancer cells.
- CAR-T cells are often called "**living drugs**" because they can persist in the body, potentially providing long-term protection against cancer recurrence.
- **Unlike chemotherapy**, which affects both cancerous and healthy cells, CAR-T cells are engineered to target specific antigens on cancer cells, potentially reducing side effects.
- **Mechanism** – CAR-T therapy involves modifying a patient's T-cells (a type of white blood cell) to express chimeric antigen receptors (CARs).
- These modified T-cells can recognize and attack specific proteins (antigens) on cancer cells.
- **Procedure** – T-cells are extracted from the patient's blood through apheresis.
- The cells are genetically engineered in a laboratory to produce CARs.
- Modified T-cells are multiplied and then infused back into the patient.
- **Applications** – It is primarily effective against certain blood cancers like leukemia and lymphoma.
- Particularly successful in treating B-cell acute lymphoblastic leukemia (ALL) in children and young adults.
- **Advantages** – Highly personalized treatment and potential for long-lasting remission.
- Effective in some cases resistant to traditional therapies.
- **Challenges** – High cost of treatment and complex manufacturing process.

- Potential severe side effects like Cytokine Release Syndrome (CRS).
- Limited efficacy against solid tumours.
- **Indian Context – NexCAR19**, India's first indigenously developed CAR-T cell therapy.

2. c

Imazethapyr

- **Herbicide-Tolerant Crop Varieties** – New rice and wheat varieties/hybrids developed to tolerate the herbicide Imazethapyr.
- Uses a mutated acetolactate synthase (ALS) gene, not genetically modified (GM) technology.
- Developed by both public (IARI) and private sector (Savannah Seeds, Mahyco) entities.
- **Direct-Seeded Rice (DSR) and Zero-Tillage (ZT) Wheat** – DSR eliminates need for nurseries, puddling, transplanting, and flooding.
- ZT wheat allows sowing without stubble burning or land preparation.
- Both reduce water usage, labor costs, and environmental impact.
- **Water Conservation** – Traditional rice cultivation requires up to 30 irrigations.
- DSR can save approximately 30% water compared to conventional methods.
- **Environmental Impact** – Reduces stubble burning, a major cause of air pollution in North India.
- Decreases fuel consumption for land preparation.
- **Economic Benefits** – Reduces labor costs for transplanting and weed management.
- Saves time in crop establishment.
- **Weed Management – Imazethapyr** is a broad-spectrum **herbicide**, **effective against various weeds**.
- It is safer than some alternatives as ALS gene is absent in humans and mammals.
- **Current Adoption** – IARI's varieties planted in 2,500 acres.
- Savannah Seeds' hybrids in 15,000 acres across multiple states.

- **Policy Implications** – Aligns with government efforts to promote sustainable agriculture.
- Potential to address water scarcity and air pollution issues.
- **Challenges and Considerations** – Long-term effects of herbicide use need monitoring.
- Balancing agricultural productivity with environmental concerns.

3. d

Global Alliance for Improved Nutrition (GAIN)

GAIN has recently launched a report titled 'The Case for Investment in Nutritious Foods Value Chains: An Opportunity for Gender Impact'.

- Global Alliance for Improved Nutrition (GAIN) is a **Switzerland-based foundation** and **not a multi-stake holder alliance of Governments**.
- **Vision** – Healthier diets for all people, especially the most vulnerable, from more sustainable food systems.
- **Mission** – To improve healthier diets for all, especially the most vulnerable, by enhancing the availability, affordability, desirability, and sustainability of nutritious and safe foods.
- Additionally, to focus on reducing the consumption of unhealthy and unsafe foods.
- **Global Nutrition Report** – It is not released by a single entity.
- It produced and released through a collaborative effort led by its multi-stakeholder governance structure, and **it doesn't include Global Alliance for Improved Nutrition (GAIN)**.
- The actual publication and dissemination are managed by the Report Host (currently PATH) under the guidance of the Stakeholder Group and with content developed by the Independent Expert Group.
- 'The Case for Investment in Nutritious Foods Value Chains: An Opportunity for Gender Impact' is a report launched by the **Global Alliance for Improved Nutrition (GAIN)**.
- **Key highlights of the report** – The GAIN's report highlights six nutritious food value chains in three geographies from a gender perspective such as:
 - Cashew nuts and poultry in Sub-Saharan Africa,

- Aquaculture and quinoa in Latin America and
- Tomatoes and dairy in South Asia.

- Africa is the world's largest producer of raw cashew nuts.
- However, only 10% of the processing of these cashews in Sub-Saharan Africa is done locally.
- Women play a dominant role in the shelling and sorting of cashews, which is done manually.
- There is an opportunity to invest in increased processing facilities to ensure value addition is done locally.
- South Asia has a high tomato production, with India being the world's second largest producer.
- Women play a key role in tomato cultivation and processing but have limited control over resources.
- Across value chains, gender-lens investments could help address the lack of representation of women in leadership positions and support women entrepreneurship and ownership.
- Several companies in the six value chains show evidence of gender impact or gender impact potential, says the report.

4. c

Low-Dose Computed Tomography (LDCT)

Growing number of cancer incidents can be addressed by the Low-Dose Computed Tomography (LDCT).

- Low-Dose Computed Tomography (LDCT) is a specialized X-ray technique used to create detailed images of the lungs.
- It's **specifically designed for lung cancer screening** and **uses 5 times less radiation** compared to a standard CT scan.
- **Working mechanism:**
- **Low Radiation Dose** – LDCT employs a lower radiation dose than a regular CT scan, making it safer for repeated use.
- **Image Acquisition** – The scanner takes multiple X-ray images from different angles as you lie on a table that slides through the machine.
- **Image Reconstruction** – A computer processes these images to create a 3D view of your lungs.

- **Benefits of LDCT for Lung Cancer Screening:**

- **Early Detection** – LDCT can identify small lung nodules or tumours at an early stage when they are more treatable.

- **Reduced Mortality** – Studies have shown that regular LDCT screenings can significantly reduce lung cancer mortality rates.

- **High-Risk Individuals** – It's primarily recommended for individuals with a high risk of lung cancer, such as heavy smokers or former smokers.

- **Challenges and Considerations:**

- **False Positives** – LDCT can sometimes detect abnormalities that are not cancerous, leading to unnecessary follow-up tests and anxiety.

- **Radiation Exposure** – Although the radiation dose is low, repeated scans over time can increase cumulative exposure.

- **Cost and Accessibility** – LDCT scans can be expensive, and access may be limited in certain regions.

- **Over-diagnosis** – There's a concern that LDCT might lead to the detection of small tumours that would never progress to cancer, resulting in unnecessary treatment.

- Despite these challenges, LDCT remains a valuable tool for lung cancer screening, especially for high-risk individuals.

- **Types:**

- **Reagents** – Chemicals used to cause reactions in other substances for analytical purposes.

- **Solvents** – Substances that dissolve other chemicals to form solutions.

- **Enzymes** – Biological catalysts that speed up chemical reactions.

- **Standards** – Chemicals with known concentrations used for calibration and validation.

- **Regulation and Customs** – Subject to customs duties and import regulations, which can impact their cost and availability.

- Recent increases in customs duties, such as the **reported hike to 150%**, can affect research budgets and accessibility.

- **Recently the Union Government has reduced the customs duty for lab chemicals to 10% from 150%.**

- **Manufacturing and Import** – Many specialized chemicals are not manufactured domestically and must be imported.

- Dependency on imports can create challenges related to supply chain stability and regulatory compliance.

- **Impact on Research** – High costs and limited availability can hinder scientific research and innovation.

- Essential for maintaining the quality and accuracy of scientific experiments and research outcomes.

- **Policy and Exemptions** – Publicly funded research organizations often have exemptions from customs duties.

- Policy adjustments and clarifications are needed to support the research community and ensure the continued availability of critical chemicals.

- **Technological Advancements** – Ongoing research aims to develop new chemicals and improve the efficiency of existing ones.

- Innovations in laboratory chemicals can lead to advancements in various scientific and industrial applications.

5. d

Laboratory Chemicals

The finance ministry has recently reduced customs duty on the Laboratory Chemicals to 10 % from the 150% rate it had set in the 2024-25 Budget.

- Laboratory chemicals **include both organic and inorganic substances.**

- They are imported in quantities **not exceeding 500 grams or 500 milliliters.**

- These chemicals are identifiable by their purity, markings, or other features that indicate they are meant for laboratory use only.

- **Importance** – Essential for conducting experiments, research, and development across various scientific fields.

- Used in medical research, environmental analysis, pharmaceuticals, agriculture, and industrial applications.

06-08-2024

1) Bhoj Wetland, sometimes seen in the news recently, is situated at?

- Madhya Pradesh
- Maharashtra
- Jharkhand
- West Bengal

2) Consider the following statements with respect to 6th Minor Irrigation Census Report

- The main objective of the report is to build up a comprehensive and reliable database in the minor irrigation sector for effective planning and policymaking.
- It is conducted in the States/UTs covering all ground water and surface water schemes having Culturable Command Area (CCA) up to 2,000 ha.
- It is an initiative of Ministry of Jal Shakti.

How many of the statements given above are correct?

- Only one
- Only two
- All three
- None of the above

3) Consider the following statements with respect to the Lieutenant Governor (L-G) of Delhi

- He has the authority to nominate 10 persons with special knowledge of municipal administration to the Municipal Corporation of Delhi.
- The status of Delhi as a Union Territory with a Legislative Assembly was created by the 69th Constitutional Amendment.

Which of the above statement(s) is/are **incorrect**?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

4) Consider the following statements with respect to Indian Siris

- It is endemic to Himalayas.
- It is an Ayurvedic herb that has been used in Indian traditional medicine for centuries.

Which of the above statement(s) is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Answers

1. a

Bhoj Wetland

A proposed road project through the catchment area of Bhoj Wetland may make it to delist from the Ramsar site.

- Bhoj Wetland is two contiguous **human-made** reservoirs situated at Bhopal in **Madhya Pradesh**.
- The "Upper Lake" was created in the 11th century by construction of an earthen dam across the Kolans River.
- The lower was constructed nearly 200 years ago, largely from leakage from the Upper, and is surrounded by the city of Bhopal.
- The lakes are very rich in biodiversity, particularly for macrophytes, phytoplankton and zooplankton.
- Both natural and cultured fish species, both resident and migratory birds, insects, and reptiles and amphibians are present in the lakes.
- Since implementation of a management action plan was begun in 1995 with financial support from the government of Japan, a number of bird species have been sighted.
- WWF-India has been of great assistance in preparing the site's designation.
- It is a **designated Ramsar site** is under threat of delisting due to the proposed road project through its catchment area.
- The **Ramsar Convention** aims to "develop and maintain an international network of wetlands important for the conservation of global biological diversity and for sustaining human life.
- India ratified the convention on February 1, 1982.



2. c

6th Minor Irrigation Census Report

- The main objective of the Minor Irrigation Census Report is to build up a comprehensive and reliable database in the minor irrigation sector for effective planning and policymaking.
- It is conducted in the States/UTs covering all ground water and surface water schemes having Culturable Command Area (CCA) up to 2,000 ha.
- In the MI census, detailed information on various parameters are collected that include:
 - Irrigation sources and irrigation potential created (IPC),
 - Potential utilized, ownership and holding size of land by owner and
 - Devices used for lifting water, sources of energy, methods used for water distribution and so on.
- The 6th Minor Irrigation Census was completed and published in 2023.
 - 231.4 lakh MI schemes were enumerated,
 - 94.8% (219.3 lakh) were Ground Water schemes and
 - 5.2% (12.1 lakh) were Surface Water schemes.
- The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched in 2015-16 to enhance water access for farming and improve irrigation.
- Har Khet Ko Pani (HKKP) is a component of PMKSY, which includes Surface Minor Irrigation (SMI) and Repair, Renovation & Restoration of Water Bodies (RRR of WBs) schemes.

- The Ministry of Jal Shakti provides Central Assistance to states for these schemes.
- PMKSY-HKKP has been approved for continuation from FY 2021-22 to FY 2025-26 with:
 - Budget outlay of Rs. 4,580 crores and
 - Targeted irrigation potential of 4.50 lakh-ha for SMI and RRR of WBs schemes.
- Central Assistance varies based on the region:
 - 100% for UTs without legislature,
 - 90% for UTs with legislature, 7 North-Eastern states, Sikkim, and hilly states and
 - 60% for special areas and other categories.

3. d

Lieutenant Governor (L-G) of Delhi

In the recent verdict of the Supreme Court they have upheld the nomination of the 10 members by the L-G of Delhi to the Municipal Corporation of Delhi.

- Shri Vinai Kumar Saxena is the current and the 22nd Lieutenant Governor of Delhi.
- The Lieutenant Governor's functions in Delhi are defined under Section 41 of the GNCT (Government of National Capital Territory) of Delhi Act, 1991.
- The unique status of Delhi as a Union Territory with a Legislative Assembly, created by the 69th Constitutional Amendment (Article 239AA).
- The 2018 Supreme Court ruled that the LG is bound by the aid and advice of the Council of Ministers in matters where the Legislative Assembly can make laws.
- The Union Government's attempt to reassert control through the 2021 Amendment Act, which the Delhi Government has challenged in the Supreme Court.
- The Supreme Court's May 2023 ruling upholding the Delhi government's control over civil servants and day-to-day administration.
- Given this context, the recent ruling on the LG's power to nominate aldermen to the MCD is significant because:
 - It appears to go against the trend of recent rulings that have generally favoured the elected Delhi government's authority.

4. b

Indian Siris (*Albizia lebbek*)

Recently a century-old Indian siris tree in Kumaradevam gram panchayat was fell down due to soil weakening caused by recent floods.

- Indian Siris (*Albizia lebbek*) Tree is occurs naturally on soils overlying basalt, and among sandstone boulders and basalt outcrops on breakaway or scree slopes.
- It is **not confined to Himalayas** and can be found across India and can be found in the most tropical forests regions.
- It is an Ayurvedic herb that has been used in Indian traditional medicine for centuries.
- It is a deciduous tree that can grow up-to 30 m tall in native forests.

07-08-2024

1) Consider the following statements with respect to enFnCas9

1. It is an enhanced genome-editing system that improves upon existing CRISPR-based technologies.
2. It was developed by the CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB).

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements with respect to Shanghai Space-com Satellite Technology (SSST)

1. It is a miniaturized satellite that is designed to promote the construction of smart cities in China.
2. It is one of the largest domestic communication satellite systems in Asia-Pacific region placed in Geo-stationary orbit.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

3) Consider the following statements with respect to QCI Surajya Recognition & Ranking Framework

1. It is an initiative designed to drive excellence among states to improve quality of life of citizens across India
2. This framework is categorized under four pillars with Prosperity being one of the pillars.
3. This initiative combines monthly and cumulative evaluations to ensure a thorough and balanced assessment.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

4) Consider the following statements with respect to Kasturi Cotton Bharat programme

1. It aims to improve traceability, certification and branding of Indian cotton with the objective of creating premium value for cotton grown in India.
2. It's a joint initiative between the Government of India, trade bodies and industry.
3. In India, most of the cotton is produced from the irrigated lands.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

5) Consider the following statements with respect to Artificial Light at Night (ALAN)

1. It enhances leaf toughness and reduces herbivory.
2. It has species-specific effects on leaf nutrients, size and defence substances.

3. More than 80 percent of the world's population lives under light-polluted skies.

How many of the statements given above are **incorrect**?

- a. Only one
b. Only two
c. All Three
d. None of the above

Answers

1. c

enFnCas9

Scientists from the CSIR-IGIB have recently developed an enhanced genome-editing system called enFnCas9 that can modify DNA more precisely and more efficiently than existing CRISPR-based technologies.

- enFnCas9 is an improvement over existing CRISPR-Cas9 gene editing technologies.
- It offers higher precision and efficiency in genome editing.
- **It was developed by Indian scientists at Council of Scientific and Industrial Research–Institute of Genomics and Integrative Biology (CSIR–IGIB).**
- **Technical Advancements:**
 - Addresses off-target effects, a major concern in gene editing.
 - Improves editing efficiency without compromising specificity.
 - Enhances the ability to recognize single-nucleotide changes in DNA.
- **Applications:**
 - **Healthcare** – Potential for treating genetic disorders, including inherited blindness.
 - **Agriculture** – Possibilities for crop improvement and increasing yields.
 - **Diagnostics** – Enhanced capability to detect disease-causing genetic changes.
- **Economic Implications:**
 - Indigenous development reduces dependency on foreign technologies.

- Potential for more affordable gene therapies in India and other developing countries.
- Opportunity for India to become a leader in biotechnology and gene therapy.

2. d

Shanghai Space-com Satellite Technology (SSST)

Recently the Chinese state-owned enterprise successfully placed 18 satellites into orbit, to create its own version of US firm SpaceX's Starlink network.

- Shanghai Space-com Satellite Technology (SSST) founded in 2018, aims to provide internet services based on a **low-orbit satellite** constellation.
- SSST is backed by the Shanghai municipal government.
- It aids to provide **internet communication** similar to the SpaceX's Starlink network.
- Shanghai Space-com Satellite Technology (SSST) raised 6.7 billion yuan (\$933 million) in a Series A funding round.
- This is a significant amount for a single funding round, indicating strong investor interest.
- The investment is aimed at constructing a low-orbit satellite constellation.
- This effort is part of China's race to compete with Elon Musk's Starlink in providing satellite-based internet services.
- The project is expected to be part of Shanghai government's "G60" satellite constellation plan.
- **Broader Industry Impact:**
 - This investment is expected to boost demand for satellites and rocket launches in China's commercial space industry.

3. c

QCI Surajya Recognition & Ranking Framework

The Quality Council of India (QCI) has recently unveiled the QCI Surajya Recognition & Ranking Framework, an initiative aimed at driving excellence and improving the quality of life across India.

- QCI Surajya Recognition & Ranking Framework is an initiative aimed at driving excellence and improving the quality of life across India.

- This new framework focuses on 4 pillars:
 1. Shiksha (Education)
 2. Swasthya (Health)
 3. **Samriddhi (Prosperity)**
 4. Sushasan (Governance)
- The Surajya Recognition will celebrate exceptional performance and dedication to quality within these crucial sectors.
- The framework's August 2024 rankings highlight achievements in Shiksha, Swasthya, and Samriddhi, with Sushasan set to be featured in future editions.
- In the Shiksha category, Uttar Pradesh tops the list with the highest number of accreditations, assessments, and ratings, followed closely by Delhi, which also performs strongly.
- For Swasthya, Chhattisgarh, Karnataka, Kerala, Rajasthan, Mizoram, and Manipur have achieved full certification under the Ayushman Arogya Yojana (NABH).
- Tamil Nadu and Maharashtra lead in the Medical Entry Level Testing Labs (MELT) rankings (NABL), while Chandigarh and Jammu & Kashmir show notable performance in Ayushman Arogya Yojana certification.
- Delhi excels in MELT rankings, followed by Jammu & Kashmir.
- In the Samriddhi category, Gujarat, Karnataka, and Rajasthan stand out with the highest number of ZED certifications, particularly in the Micro category.
- Jammu & Kashmir and Delhi also achieve significant ZED certifications.
- Maharashtra and Bihar lead in the MSME Competitive LEAN Scheme.
- **This initiative combines monthly and cumulative evaluations to ensure a thorough and balanced assessment.**
- By recognizing and rewarding states and organizations for their quality and innovation, the framework supports India's journey towards becoming a developed and quality-driven nation.
- **Quality Council of India (QCI)** – It was established as a National body for Accreditation in 1996.
- It was set up through a PPP model as an independent autonomous organization with the

support of Government of India and the Indian Industry represented by 3 premier industry associations such as:

1. Associated Chambers of Commerce and Industry of India (ASSOCHAM)
 2. Confederation of Indian Industry (CII)
 3. Federation of Indian Chambers of Commerce and Industry (FICCI)
- It is a non-profit organization registered under the Societies Registration Act XXI of 1860.
 - The **Department of Industrial Policy and Promotion, Ministry of Commerce and Industry** was designated as the nodal point for all matters connected with quality and QCI.

4. b

Kasturi Cotton Bharat Programme

The Ministry of Textiles has recently launched the Kasturi Cotton Bharat Programme to improve traceability, certification and branding of Indian cotton.

- Cotton is the world's most versatile fibre.
- **India has the largest area under cotton cultivation** and is also the **largest producer** and **second largest consumer** of cotton.
- Kasturi Cotton Bharat Programme aims to improve traceability, certification, and branding of Indian cotton.
- It's a **joint effort between the Government of India, trade bodies, and industry.**
- A Memorandum of Understanding (MoU) was signed in 2022 between the Cotton Corporation of India and The Cotton Textiles Export Promotion Council.
- QR-based certification technology is used at each processing stage.
- A block chain-based software platform provides end-to-end traceability and transaction certificates.
- A microsite with QR code verification and block-chain technology has been developed.
- The block-chain technology implementation involves stakeholders across the entire Indian cotton value chain, including Andhra Pradesh.
- The program operates at the national level and promotion is done on both national and international platforms.

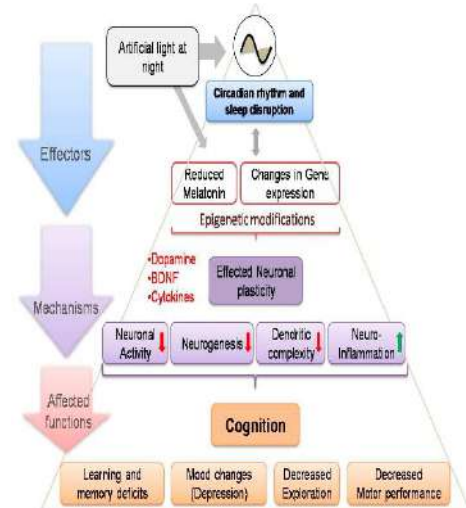
- *Funding is not allocated at the state level.*
- All ginners in India, including those in Andhra Pradesh, can produce Kasturi Cotton Bharat brand according to the stipulated protocol.
- 343 modernized ginning and pressing units have registered for the initiative.
- Approximately 67% of Indian's cotton is produced on rain-fed areas and 33% on irrigated lands.
- ***In India, most of the cotton is produced from the rain-fed areas.***

5. d

Artificial Light at Night (ALAN)

According to a recent study, High levels of artificial light at night (ALAN) are making tree leaves tougher and harder for insects to eat, posing a threat to urban food chains.

- ALAN enhances leaf toughness and reduces herbivory (insect feeding on leaves).
- It has species-specific effects on leaf nutrients, size and defence substances.
- This threatens urban food chains by altering insect feeding patterns.
- Plants in high-light areas focus more on defence than growth.
- **Leaf characteristics affected** – Increased leaf carbon content and toughness.
- Decreased leaf nitrogen content and changes in specific leaf area (SLA).
- **Ecological implications** – Reduced energy flow from plants to higher trophic levels.
- Potential threat to urban biodiversity, including arthropods and birds.
- Slower leaf decomposition, affecting nutrient cycling.
- **Light pollution** – ***More than 80% of the world's population lives under light-polluted skies.***
- The night sky is rapidly getting brighter globally.
- **Conservation efforts** – Growing movement to establish "dark-sky places".
- ***Pench Tiger Reserve in Maharashtra became India's first International Dark Sky Park in January 2024.***



08-08-2024

1) Consider the following statements with respect to Optically Stimulated Luminescence (OSL) Dating

1. This method allows researchers to determine the age of sediments and artefacts with accuracy.
2. It is based on the accumulation of electrons in crystal lattice defects due to ionizing radiation.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements with respect to Studentship programme in Unani Research (SPUR)

1. It aims to promote interest and aptitude for research among undergraduates of Unani Medicine.
2. It is an initiative of Central Council for Research in Unani Medicine (CCRUM) in collaboration Ministry of Education.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements:

1. Crime & Criminal Tracking Network System (CCTNS) is a gateway for all drugs and Narcotics Control Bureau (NCB) related information for all four tiers of stakeholders.
2. Narco Coordination (NCORD) Portal is aimed to inter-link all police stations under a common application software for the purpose of investigation.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Mining Surveillance System (MSS)

1. It is an interactive platform to speed up mining activity and facilitate all the stakeholders to track the status of the statutory clearances associated with mining blocks.
2. It is a pan-India surveillance network that was developed by the Indian Bureau of Mines.
3. The system checks 500 meters around the existing mining lease boundary to search for any unusual activity relating to illegal mining.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

5) Consider the following statements with respect to Tantalum

1. It is hard, ductile, lustrous, bluish-grey transition metal that is highly corrosion resistant.
2. Brazil has the highest tantalum reserves in the world.
3. The top importers of tantalum include India since there is no tantalum reserve in India.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

Answers

1. c

Optically Stimulated Luminescence (OSL) Dating

Scientists have recently found the first evidence of earthquakes that can cause rivers to change course, a process known as avulsion using optically stimulated luminescence (OSL) dating.

- Optically Stimulated Luminescence (OSL) dating is a cutting-edge scientific technique that has revolutionized the fields of archaeology and geology.
- This method allows researchers to determine the age of sediments and artefacts with remarkable accuracy, providing crucial insights into Earth's history and human civilizations.
- **Principle** – OSL dating is based on the ability of certain minerals, primarily quartz and feldspar, to store energy from environmental radiation and release it as light when stimulated by exposure to light.
- **Process** – Over time, minerals in buried sediments accumulate electrons in their crystal lattice due to exposure to natural radioactivity.
- When these minerals are exposed to light during sampling, they emit a luminescence signal.
- The intensity of this signal is proportional to the time since the mineral was last exposed to sunlight.
- **Advantages** – Can date materials up to about 150,000 years old, with potential extensions to 500,000 years.
- Applicable to a wide range of sediments, including those unsuitable for radiocarbon dating.
- Provides direct dating of depositional events.
- **Relevance to India** – Used in dating Indus Valley Civilization sites, providing new insights into the chronology of ancient Indian cultures.
- Applied in studying the evolution of river systems like the Ganga and Yamuna.

- Helpful in understanding climate change impacts on the Indian subcontinent over geological timescales.
- **Recent Developments – Single-grain OSL dating** has improved precision and allowed dating of partially bleached sediments.
- Integration with other techniques like radiocarbon dating for cross-validation.
- **Limitations** – Requires specialized equipment and expertise.
- Accuracy can be affected by incomplete bleaching of sediments during deposition.
- **Applications:**
 - **Archaeology** – Dating of pottery, burnt flints, and sediments associated with human occupation.
 - **Geology** – Dating of sedimentary deposits, paleo-environmental reconstructions, and studying tectonic events.
 - **Paleoclimatology** – Understanding past climate changes through dated sediment records.

2. a

Studentship programme in Unani Research (SPUR)

The Central Council for Research in Unani in collaboration with National Commission for Indian System of Medicine (NCISM) recently launched Studentship programme in Unani Research (SPUR).

- The Studentship programme in Unani Research (SPUR) to promote interest and aptitude for research among undergraduates of Unani Medicine.
- SPUR is an **initiative of the Central Council for Research in Unani Medicine (CCRUM)**, Ministry of Ayush in **collaboration with the National Commission for Indian System of Medicine (NCISM)**.
- A webinar on the quality standards for healthcare delivery system in Unani Medicine and digital initiatives of CCRUM was also launched during the launch of SPUR.
- **Central Council for Research in Unani Medicine (CCRUM)** – Is an **autonomous organization** under the Ministry of Ayush that was established in **1978**.
- CCRUM is the apex government organization for research in Unani Medicine.

- It has been engaged in conducting scientific research on the applied as well as fundamental aspects of Unani system of medicine.
- Consequently, over the past four decades of its existence, the Council has made significant strides in clinical research, drug standardization, survey and cultivation of medicinal.
- **National Commission For Indian System Of Medicine** – It is the statutory body constituted under NCISM Act, 2020.
- This Act aids to provide for a medical education system that improves access to quality and affordable medical education.
- It ensures availability of adequate and high quality medical professionals of Indian System of Medicine in all parts of the country.
- It promotes equitable and universal healthcare that encourages community health perspective and makes services of such medical professionals accessible and affordable to all the citizens.

3. d

Portals to stop Drug Trafficking

- **Narco Coordination (NCORD) Portal** – Is a **gateway for all drugs and Narcotics Control Bureau (NCB)** related information for all four tiers of stakeholders.
- The tiers starts from district level to state level and Central Ministries including all Drug Law Enforcement Agencies (DLEAs).
- **Crime & Criminal Tracking Network System (CCTNS)** – Is aimed to **inter-link all police stations** under a common application software.
- It is interlinked for the purpose of investigation, data analytics, research, policy making and providing Citizen Services such as reporting & tracking of complaints, request for antecedent verifications and so on.
- **National Integrated Database on Arrested Narco-Offenders (NIDAAN)** – It provides data of narcotics offenders involved in narcotics offences under Narcotic Drugs & Psychotropic Substances (NDPS) Act, 1985.
- NIDAAN portal is exclusively meant for use of Drugs Law Enforcement Agencies.
- The portal has emerged as an effective tool for the Drug Law Enforcement Agencies.

- By providing comprehensive data on offenders, including criminal history, fingerprints, and financial records, NIDAAN empowers law enforcement to:
 - **Identify patterns** – Connect the dots between cases, uncover criminal networks, and target habitual offenders.
 - **Enhance investigations** – Access crucial information to build stronger cases and dismantle drug trafficking organizations.
 - **Improve efficiency** – Streamline processes, such as tracking case progress, bail, and parole status.
- It also helps in monitoring status of current cases, bail, parole, handlers and so on.

4. b

Mining Surveillance System (MSS)

- Mining Surveillance System (MSS) is a satellite-based monitoring system which aims **to detect illegal mining activity** through automatic remote-sensing detection technology.
- It is a pan-India surveillance network that was **developed by the Indian Bureau of Mines** in collaboration with:
 - Bhaskaracharya Institute for Space Applications and Geo-informatics (BISAG), Gandhinagar and
 - The Ministry of Electronics and Information Technology (MEITY).
- The system records any landform **disturbances up-to 500m beyond** the lease boundary and generates trigger.
- The generated trigger is investigated by the State Government and necessary action is taken by them.
- **Almost all mining leases of major minerals** in the country have been mapped on MSS.
- The State Governments were also requested to extend the MSS for the mining leases of minor minerals.
- **TAMRA (Transparency, Auction Monitoring and Resource Augmentation)** – Is an **interactive platform to speed up mining activity** in India.

- It facilitate all the stakeholders to track the status of the statutory clearances associated with mining blocks for getting mines to reach till operationalisation for the same.
- It covers block-wise, state-wise and mineral-wise information of the blocks to be auctioned, monitors various statutory clearances, and also highlights the additional.

5. a

Tantalum

- Tantalum is a chemical element with symbol Ta and atomic number 73 in the periodic table.
- It is very hard, ductile, lustrous, bluish-grey transition metal that is highly corrosion resistant.
- It has a melting point of 5,463 °F (2,996 °C), the 4th highest of all metals.
- The Central Government has notified a list of **24 minerals** including **Tantalum, in Part D** of the First Schedule of the Mines and Minerals (Development and Regulation) Act, 1957 as **Critical and Strategic minerals**.
- A **Niobium-Tantalum resource** of 16.42 million tonnes is found at Rewat Hill block, Nagaur district, **Rajasthan**.
- The **Tantalum deposits can be found at Gujarat, Arunachal Pradesh, Rajasthan, Chhattisgarh, Bihar and Karnataka**.
- **Australia has the highest tantalum reserves in the world** which is accounted for nearly 62% of global tantalum reserves, followed by Brazil, accounting for 36% of the total.
- The **Democratic Republic of the Congo (DRC) has become the world's largest producer of tantalum**, accounting for nearly 41% of the world's mined supply in 2013.
- **Applications**
 - Production of electronic components
 - In the making of surgical implants
 - Can replace bone, connect torn nerves and bind abdominal muscle
 - As electrodes for neon lights and in glass for special lenses
 - High-temperature applications, such as aircraft engines

09-08-2024

1) Consider the following statements with respect to Cortisol

1. It is a steroid hormone produced by the adrenal glands that's essential for life.
2. A Cortisol face is a puffed-up face attributed to elevated cortisol levels, similar to symptoms of Cushing's syndrome.
3. Prolonged sleep deprivation significantly affects cortisol levels in the bloodstream.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

2) Consider the following statements with respect to Indian Roads Congress (IRC)

1. It frames new standards based on international best practices and indigenous research for construction and maintenance of roads and bridges.
2. It is the Apex body for road sector engineers and professionals in India.
3. The Highway Research Board (HRB) works under the aegis of it.

How many of the statements given above are **incorrect**?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

3) Consider the following pairs:

World Heritage Sites	States
1. Fatehpur Sikri	– Delhi
2. Rani-ki-Vav	– Uttar Pradesh
3. Moidams	– Assam
4. Ramappa Temple	– Andhra Pradesh

How many of the pair(s) given above is/are correctly matched?

- a. Only one
- b. Only two
- c. Only three
- d. All four

4) Which of the following clouds is created by the intense heat from the Earth's surface?

- a. Altocumulus Clouds
- b. Nimbostratus Clouds
- c. Pyrocumulonimbus Clouds
- d. Cirrocumulus Clouds

5) Consider the following statements with respect to UN Declaration on the Rights of Indigenous Peoples (UNDRIP)

1. It defines Indigenous Peoples as groups that have a historical connection to a region before colonization.
2. It is applicable to both indigenous and non-indigenous peoples.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answers

1. c

Cortisol

- Cortisol is a steroid hormone produced by the adrenal glands that's essential for life.
- It sits on **top of each kidney** and basically **instructs each organ** on functioning mechanism as it reaches them through the bloodstream.
- **Cortisol face** – A puffed-up face attributed to elevated cortisol levels, similar to symptoms of Cushing's syndrome.
- **Role of Cortisol** – Helps the body deal with crisis situations.

- Works with other "fight or flight" hormones and it triggers glucose release for energy.
- It is involved in carbohydrate and fat metabolism.
- Affects blood pressure, insulin, and immune system.
- **Problems with high cortisol levels** – Increased inflammation and risk of developing Type 2 diabetes.
- Sleep cycle disruption and increased appetite for high-calorie foods.
- Potential weight gain, especially around the belly.
- Anxiety, irritability, and cognitive issues.
- **Testing cortisol levels** – Blood, urine, or saliva tests.
- Normal ranges provided for morning and afternoon
- **Ways to reduce cortisol and weight gain** – by making lifestyle modification by changing Balanced diet and to limit the intake of sugar and caffeine.
- Consume omega-3 rich foods (fish, seafood, flax seeds, and chia seeds).
- Include fermented foods (plain yogurt, apple cider vinegar).

2. d

Indian Roads Congress (IRC)

The Ministry of Road Transportation and Highways has recently issued policy guidelines on use of such eco-friendly materials/processes which are needed to be followed by the Indian Roads Congress (IRC).

- The origin of Indian Roads Congress (IRC) can be traced back to the Road Development Committee set up under the Chairmanship of Shri M.R. Jayakkar in 1927 by the then Government of India.
- It was established on December 10, 1934, in New Delhi.
- It is formally registered as a Society on September 24, 1937, under the Societies Registration Act of 1860.
- IRC is the **Apex Body of Road Sector Engineers and Professionals** in the country Origin and Establishment.

- It provides a ***national forum for sharing knowledge*** on road construction, maintenance, bridges, tunnels, and road transportation.
- It had 73 members in 1934 and presently has over 20,000 members, including 18,514 life members.
- It is governed by a ***Council*** headed by the President.
- It Has an ***Executive Committee and a Secretariat*** for day-to-day functions.
- **Functions** – Continuously updates standards and guidelines for eco-friendly and sustainable materials.
- **Frames new standards based on international best practices and indigenous research.**
- It Has 26 Technical Committees examining various technical issues.
- The 3 Apex Committees includes:
 1. Highways Specifications & Standards Committee (HSS)
 2. Bridges Specifications & Standards Committee (BSS)
 3. General Specifications & Standards Committee (GSS)

- The functions of the apex committee include:
 - Formulates and promotes standard specifications and guidelines for road infrastructure,
 - Publishes journals, reports, and technical literature and
 - Organizes conferences, seminars, and workshops.
- **The Highway Research Board (HRB)** is established in **October 1973 under IRC.**
- It focuses on research and development activities in road sector.

3. a

World Heritage Sites in India

- **World Heritage site** is any of various areas or objects inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List.

- The sites are designated as having “outstanding universal value” under the Convention Concerning the Protection of the World Cultural and Natural Heritage.
- This document was **adopted by UNESCO in 1972** and formally took effect in 1975 after having been ratified by 20 countries.
- It provides a framework for international cooperation in **preserving and protecting cultural treasures and natural areas** throughout the world.
- There are 3 types of sites:
 1. Cultural
 2. Natural
 3. Mixed

• **World Heritage Sites in India:**

- **Fatehpur Sikri** – Is a fortified city and UNESCO World Heritage site in the Agra District of **Uttar Pradesh**.
- It was built between 1571 and 1573 by the Mughal emperor Akbar.
- It was the capital of the Mughal Empire for about 10 years and the city's name translates to "City of Victory".
- **Rani ki vav (the Queen's Stepwell)** – Is an intricately constructed stepwell situated in the town of Patan in **Gujarat**, India.
- It is located on the banks of Saraswati River and was built as a memorial to an 11th century AD king Bhimdev I.
- It was added to the list of UNESCO's World Heritage Sites on 22 June **2014**.
- Stepwells are a distinctive form of subterranean water resource and storage systems on the Indian subcontinent.
- It has been constructed since the third millennium BC.
- It was built in the complex **Maru-Gurjara architectural style** with an inverted temple and seven levels of stairs and holds more than 500 principal sculptures.
- Rani ki Vav bagged the title of “Cleanest Iconic Place” in India at the Indian Sanitation Conference (INDOSAN) 2016 in New Delhi in October 2016.
- **Moidams** – Are the Mound-Burial System of the Ahom Dynasty.

- It is situated at the foothills of the Patkai Ranges in eastern **Assam**.
- To know more about it click [here](#) .
- **Ramappa Temple** – It is in the village of Palampet, Hyderabad, in the State of **Telangana**.
- It is the main Shiva temple in a walled complex built during the Kakatiyan period (1123–1323 CE) under rulers Rudradeva and Recharla Rudra.
- To know more about it click [here](#) .

World Heritage Sites in India	States
1. Agra Fort 2. Taj Mahal 3. Fatehpur Sikri	Uttar Pradesh
4. Ellora Caves 5. Ajanta Caves 6. Elephanta Caves 7. Victorian Gothic and Art Deco Ensembles of Mumbai 8. Chhatrapati Shivaji Terminus (formerly Victoria Terminus) 9. Western Ghats	Maharashtra
10. Group of Monuments at Mahabalipuram 11. Great Living Chola Temples at Thanjavur, Gangaikondacholapuram and Darasuram 12. Nilgiri 13. Western Ghats	Tamil Nadu
14. Sun Temple, Konarak	Odisha
15. Kaziranga National Park 16. Manas Wildlife Sanctuary 17. Moidams – the Mound-Burial System of the Ahom Dynasty	Assam
18. Keoladeo National Park	Rajasthan

19. The Jantar Mantar, Jaipur	
20. Hill Forts of Rajasthan (Chittorgarh, Kumbhalgarh, Jaisalmer, Ranthambhore, Amber and Gagron)	
21. Jaipur City	
22. Churches and Convents	Goa
23. Group of Monuments at Hampi	Karnataka
24. Group of Monuments at Pattadakal	
25. Sacred Ensemble of Hoysalas	
26. Khajuraho Group of Monuments	Madhya Pradesh
27. Buddhist Monuments at Sanchi	
28. Rock Shelters of Bhimbetka	
29. Sundarbans National Park	West Bengal
30. Mountain Railway of India (Darjeeling)	
31. Santiniketan, India	
32. Nanda Devi and Valley of Flowers National Parks	Uttarakhand
33. Humayun's Tomb	Delhi
34. Qutb Minar and its Monuments	
35. Red Fort Complex	
36. Kalka - Shimla	Himachal Pradesh
37. Great Himalayan National Park Conservation Area	
38. Mahabodhi Temple Complex at Bodh Gaya	Bihar
39. Archeological Site of Nalanda Mahavihara at Nalanda	
40. Champaner - Pavagadh Archaeological Park	Gujarat

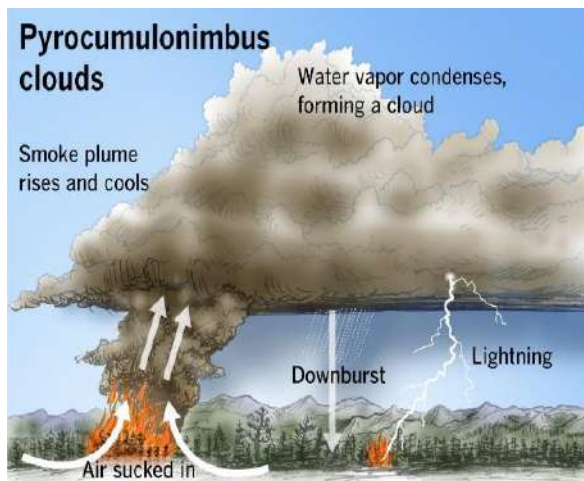
41. Rani-ki-Vav (the Queen's Stepwell) at Patan	
42. Historic City of Ahmadabad	
43. Dholavira: a Harappan City	
44. Western Ghats	Kerala
45. The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement	Chandigarh
46. Khangchendzonga National Park	Sikkim
47. Kakatiya Rudreshwara (Ramappa) Temple	Telangana

4. c

Pyrocumulonimbus Clouds

- Clouds are created when water vapour, an invisible gas, turns into liquid water droplets.
- These water droplets form on tiny particles, like dust, that are floating in the air.
- **Pyrocumulonimbus clouds** are **thunder clouds created by intense heat from the Earth's surface** due to wildfires or volcanic eruptions.
- They are **formed similarly to cumulonimbus clouds**, but the intense heat that results in the vigorous updraft comes from fire, either large wildfires or volcanic eruptions.
- **Increased frequency** – Previously, an average of 102 pyro cumulonimbus clouds were recorded globally per year.
- In 2022, 140 were recorded in Canada alone during an extreme wildfire season.
- **Formation process** – Requires extremely hot wildfires (temperatures over 800°C)
- Hot air carrying water vapor, smoke, and ash rises and cools
- Water vapor condenses on ash, forming a pyrocumululus cloud
- With sufficient water vapor and intense updrafts, it can evolve into a pyrocumulonimbus cloud

- **Characteristics:**
 - Can reach heights of 50,000 feet
 - Generate their own thunderstorms
 - Produce lightning but little rain
 - Can spark new fires kilometers away from the main blaze
 - Can create strong, unpredictable winds
- **Increasing occurrence** – Exact reasons are unclear, but climate change is suspected to play a role.
- More frequent and intense wildfires due to rising global temperatures may contribute.
- **Research status** – Study of these clouds is relatively new compared to other extreme weather events.



5. b

UN Declaration on the Rights of Indigenous Peoples (UNDRIP)

To raise awareness of the needs of these population groups, every 9 August commemorates the International Day of the World's Indigenous Peoples.

- UN Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted in 2007 after a long struggle dating back to the 1940s.
- UNDRIP is **applicable to both indigenous and non-indigenous peoples**.
- **Historical Context** – Indigenous issues emerged in international discussions in the 1940s.
- Initially, indigenous peoples faced challenges in representation at the UN.
- **Definition of 'Indigenous Peoples'** – **No universal UN definition** and it has left to

national governments to define and self-identification of 'Indigenous Peoples'.

- A working definition emerged but was challenged for being limited to settler-colonial societies.
- The concept has expanded over time, potentially increasing the number of recognized indigenous people from 150 million to 300 million.
- **Characteristics of Indigenous Peoples:**
 - Pre-feudal, community-based modes of production.
 - Strong connection to land and nature.
 - Extensive knowledge of flora, fauna, and traditional medicine.
 - History of resisting colonization and maintaining autonomy.
- **Current Situation** – Indigenous peoples are well-represented in global bodies.
- Their knowledge is increasingly recognized as valuable for addressing global environmental crises.
- **Challenges** – Historical resistance from nation-states to recognizing indigenous rights.
- Debates over the implications of self-determination.
- **India** – Voted in favour of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007, but the government does not consider the concept of "Indigenous Peoples" applicable to India.
- India's position is that all Indians are Indigenous, and therefore the UNDRIP is not applicable.

10-08-2024

1) CCN3, sometimes seen in the news recently, is associated with?

- An indigenously developed Cloud Connect Network.
- A brain-derived hormone that responsible for several biological processes.
- A global network of civil society organisations to tackle climate change.
- An emerging multidrug-resistant fungus causing life-threatening outbreaks.

2) Consider the following statements with respect to Sepsis

1. It is a life-threatening condition that happens when the body's immune system has an extreme response to an infection.
2. It damages tissues and organs leading to the organ dysfunction.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements with respect to Californium

1. It is a synthetic expensive radioactive substance and has no known biological role due to its radioactivity.
2. It is a very strong neutron emitter and can be used in portable metal detectors.

Which of the above statement(s) is/are **incorrect**?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Kolleroga Disease

1. It is a fungus-caused disease that rots arecanut fruits.
2. It is a seasonal disease that occurs during the south-west monsoon.
3. It can spread through heavy winds and rain splashes.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

5) Consider the following statements:

1. Article 105 originally provides only two parliamentary privileges.
2. Privilege Motion is applicable for members of both Lok Sabha and Rajya Sabha.
3. The Parliamentary privileges also extends to the president of India.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All Three
- d. None of the above

Answers

1. b

CCN3

Researchers from the Universities of California in San Francisco and Davis has recently identified a novel brain-derived hormone called CCN3.

- **Osteoporosis** is a condition causing weak and brittle bones, affecting over 10 million people annually in India, especially aging women.
- Estrogen plays a crucial role in bone formation, but its levels drop after menopause, leading to bone loss.
- **CCN3** is responsible for increased bone mass in postpartum lactating mothers.
- During breastfeeding, estrogenic production is suppressed, which should lead to weaker bones.
- However, mothers' bones become stronger during this time, suggesting another mechanism at work.
- **Research findings** – KISS1 neurons in the hypothalamus use CCN3 to maintain bone mineralization during lactation.
- **CCN3 belongs to the CCN family of proteins involved in various biological processes.**
- **CCN3's role in bone formation** – CCN3 increases the frequency and effectiveness of skeletal stem cells maturing into bone and cartilage-forming cells.
- It enhances mineralization in both mouse and human skeletal stem cells.

- **Dose-dependent response** – Low doses of CCN3 significantly increased bone mass in young and aged mice.
- Higher doses accelerated bone repair in older mice with fractures.
- **CCN3 during pregnancy and lactation** – CCN3 is absent during early and late pregnancy, appears after birth, and decreases as lactation reduces.
- Low CCN3 levels during lactation combined with a low-calcium diet led to lower bone density in mouse mothers.
- **Potential implications** – The study reveals a new pathway for communication between the brain and body in mice.
- CCN3 could potentially be used as a therapeutic agent for skeletal disorders and osteoporosis treatment.

- **Treatment** – Requirement of medical care, including the use of antimicrobials, intravenous fluids and other measures.
- **Antimicrobial resistance** – Is a major factor determining clinical unresponsiveness to treatment and rapid evolution to sepsis and septic shock.
- Sepsis patients with resistant pathogens have been found to have a higher risk of hospital mortality.
- There were an estimated 4.95 million deaths associated with antimicrobial resistance in 2019, including 1.27 million deaths directly attributable to it.
- **Preventive measures** – Good hygiene practices, ensuring access to vaccination programmes, improved sanitation and water quality and availability.
- Other infection prevention and control best practices both in the community and health care settings, are key steps in reducing the occurrence of sepsis.
- Early diagnosis and timely and appropriate clinical management of sepsis, such as optimal antimicrobial use and fluid resuscitation, are crucial to increase the likelihood of survival.

2. c

Sepsis

- Sepsis is one of the most frequent causes of death worldwide, but there are challenges in collecting reliable data at the population level.
- Sepsis is a life-threatening condition that happens when the body's immune system has an extreme response to an infection, causing **organ dysfunction**.
- Sepsis can affect anyone, but people who are older, very young and pregnant or have other health problems are at higher risk.
- It is a significant cause of maternal, neonatal and child mortality.
- **Causative agents** – Sepsis is usually caused by bacterial infections but may be the result of other infections such as viruses, parasites or fungi.
- Healthcare associated infections are caused by pathogens that are often resistant to drugs and can rapidly lead to deteriorating clinical conditions.
- **Causes** – Damage to its own tissues and organs and it can lead to shock, multiple organ failure and sometimes death, especially if not recognized early and treated promptly.
- It can lead to septic shock, multiple organ failure and death.
- **Symptoms** – Fever, fast heart rate, rapid breathing, confusion and body pain.

3. d

Californium

The Bihar Police have recently arrested three persons from Gopalganj district and recovered 50 grams of 'Californium' worth crores from their possession.

- Californium is a **synthetic expensive radioactive substance**.
- It is a very strong neutron emitter and has no known biological role due to its radioactivity.
- It is used in portable metal detectors, for identifying gold and silver ores, to identify water and oil layers in oil wells and to detect metal fatigue and stress in aeroplanes.
- The "radioactive substance" is used for **starting nuclear reactors, optimising coal power plants, treatment of cancer and oil drilling**.
- Californium did not exist in weighable amounts until ten years after its **discovery** in 1950 at Berkeley, **California**.
- It is prepared, in milligram amounts only, by the neutron bombardment of plutonium-239.

4. c

Koleroga Disease

The Central Plantation Crops Research Institute (CPCRI) has recently issued advisory to control koleroga disease in arecanut plantations.

- Koleroga (rotting disease) or Mahali (heavy devastation) is the rotting of arecanut fruits and is the most dreaded disease occurring in **all regions receiving heavy rainfall**.
- It is caused by a **fungus *Phytophthora areae***.
- It was first recorded in the erstwhile **Mysore** State during the first decade of this century.
- The **disease is seasonal and occurs during the South-west monsoon** period in Kerala, Karnataka and Maharashtra.
- Though the exact total crop loss due to this disease is not available, annual loss of 10-75% has been recorded in different gardens in the above States.
- Low temperature, high humidity and alternate sunshine and heavy rain favour the disease development.
- **Symptoms** – The first visible symptom is the appearance of water soaked lesions on the surface of fruits near the calyx.
- The infected nuts lose their lustre and the infected portion of the fruit will be dark green against light green background of the healthy portions.
- The lesions gradually spread covering the entire surface resulting in rotting and shedding of affected nuts.
- A felt of white mycelium develops on the fallen nuts and fruits at all stages of maturity are affected.
- The infected nuts are unsuitable for chewing due to quality deterioration.
- **Prevention** – Prophylactic spraying with 1 % Bordeaux mixture gives satisfactory control of the disease.
- Since Bordeaux mixture is a protective fungicide, care should be taken to cover the entire surface by giving a very fine spray.

5. b

Parliamentary Privileges

Congress is all set to submit breach of privilege notice against Shivrak Singh Chouhan, accuses him of 'misleading' Parliament.

- Parliamentary privileges are special rights, immunities and exemptions enjoyed by the two Houses of Parliament, their committees and their members.
- They are necessary in order to secure the independence and effectiveness of their actions.
- Without these privileges, the Houses can neither maintain their authority, dignity and honour nor can protect their members from any obstruction in the discharge of their parliamentary responsibilities.
- The Constitution has also extended the parliamentary privileges to those persons who are entitled to speak and take part in the proceedings of a House of Parliament or any of its committees.
- These include the **attorney general of India and Union ministers**.
- The **parliamentary privileges do not extend to the President** who is also an integral part of the Parliament.
- **Article 105** originally provides only **two parliamentary privileges** such as:
 1. Freedom of speech in Parliament
 2. Right of publication of its proceedings with regard to other privileges.
- The **44th Constitutional Amendment Act**, passed in 1978, established that the privileges of each House of Parliament, its committees and individual members.
- These privileges would continue unchanged until Parliament explicitly defines them through legislation.
- **Article 121** prohibits any discussion in Parliament regarding the conduct of Supreme Court or High Court judges in performing their official duties.
- The only exception to this rule is when there's a formal motion to address the President, requesting the removal of a judge.

12-08-2024 & 11-08-2024

1) Consider the following statements with respect to Sugar Content Measurement (SCORE) System

1. It uses microwaves for in-situ Brix measurement in sugar mills.

- This technology allows for rapid, non-destructive, and accurate measurement of sugar concentration during production.
- It is designed and developed by the Directorate of Sugar & Vegetable Oils of Department of Food and Public Distribution.

How many of the statements given above are correct?

- Only one
- Only two
- All Three
- None of the above

2) Uhuru Peak sometimes seen in the news recently, is situated at?

- Himalayas
- Andes
- Kilimanjaro
- Ural Mountains

3) Consider the following statements with respect to *Coridius Insuperatus*

- It is an edible insect species that was recently discovered from the Arunachal Pradesh.
- It has four segmented antennae and a copper-coloured back.

Which of the above statement(s) is/are **incorrect**?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

4) Consider the following statements with respect to Kurinji

- It is a bright blue bell-shaped flower that is native to South India that grows at an altitude between 6000 to 7000 feet.
- Kurnji or neelakurinji blooms every 7 years at an elevation of 600 to 1000 metres above sea level.
- Mettukurinji blooms every 12 years and can be found on the Western Ghats.

How many of the statements given above are correct?

- Only one
- Only two
- All Three
- None of the above

5) Consider the following statements with respect to Clean Plant Programme

- It is an integrated horticulture development project aimed at tackling diseases caused by viruses in fruit and vegetable crops.
- It will be implemented by the National Horticulture Board in association with the Indian Council for Agricultural Research.
- India is the second-largest producer of fruits and vegetables globally.

How many of the statements given above are correct?

- Only one
- Only two
- All Three
- None of the above

Answers

1. b

Sugar Content Measurement (SCORE) System

Society for Applied Microwave Electronics Engineering & Research (SAMEER) has signed a Transfer of Technology agreement for Microwave based insitu BRIX measurement system with private entities.

- Sugar Content Measurement (SCORE) System is a microwave-based brix measurement system that offers a rapid, non-destructive, and accurate method for measuring insitu sugar concentration (Brix) in sugar mills during the production of sugar.
- This cutting-edge technology eliminates the need for manual sampling and enables reducing production time.
- It has huge potential in other food and beverage industries be it dairy, brewery, fruit juices and confectionary.

- This system is transferred to the two private industry partners to enable manufacturing of this system in large numbers.
- **It is designed and developed by the Society for Applied Microwave Electronics Engineering & Research (SAMEER).**
- **Society for Applied Microwave Electronics Engineering and Research (SAMEER)** – Is a premier R&D institution under the administrative control of the Ministry of Electronics and Information Technology (MeitY).
- It specializes in the research, development and commercialization of microwave electronics, electromagnetic technology and related areas.

2. c

Uhuru Peak or Summit

The Divyangjan expedition team from the Himalayan Mountaineering Institute (HMI) unfurled a 7,800 sq ft Indian national flag atop Uhuru Summit of Mt. Kilimanjaro.

- Kilimanjaro is the Africa's tallest mountain measuring 5,895 meters.
- It is a snow-capped volcano being situated at Tanzania.
- It is the largest free-standing mountain rise in the world.
- **Geological features:**
- Kilimanjaro is a stratovolcano made up of 3 cones:
 1. Kibo
 2. Mawenzi
 3. Shira
- Kibo is dormant but could potentially erupt again and last estimated eruption was 360,000 years ago.
- **The highest point on Kibo's crater rim is called Uhuru**, the Swahili word for "freedom."
- Kibo is the summit of the mountain and the tallest of the three volcanic formations.
- While Mawenzi and Shira are extinct, Kibo is considered dormant and could possibly erupt again.

- Kilimanjaro was designated as Kilimanjaro National Park in 1973 and UNESCO World Heritage site since 1987.

3. d

Coridius Insperatus

Three new edible insect species such as Coridius adii, Coridius insperatus and Coridius esculentus were discovered in Arunachal Pradesh.

- **Coridius adii** – It is named after the Adi tribe, pale to dark brown with yellow patches.
- **Coridius insperatus** – Distinct with **4-segmented antennae and copper-colored back.**
- **Coridius esculentus** – Consumption in large quantities can cause intoxication and photophobia.
- All these have been rediscovered of Coridius fuscus, Coridius laosanus, and Coridius assamensis after 100 years.

4. a

Kurinji

A rare species of Kurinji (Strobilanthes sessilis) is currently blooming in the Kalyanathandu slopes and Paranthumpara hills of Idukki, Kerala.

- Kurnji or neelakurinji (StrobilanthesKunthiana) is a bright blue bell-shaped flower found on the hill slopes of the Western Ghats at an altitude between 6000 to 7000feet.
- The Kurinji flower is native of South India, growing in the Kodaikanal, Palani, Anamalai and Nilgris in Tamil Nadu.
- **Kurnji or neelakurinji blooms every 12 years.**
- Kurinji is a shrub that used to grow abundantly in the **shola grasslands of the Western Ghats** in South India above 1800 metres.
- Kurinji (strobilanthesKunthiana) and many other plant species synchronise their flowering (reproductive phase) within large local populations at a particular site.
- Black Kurinji (StrabilanthesLurides) and white Kurinji (Strabilanthes Urceolaris) is another two varieties of Kurinji available in Kodaikanal hills.
- **Mettukurinji or Strobilanthes sessilis** is a rare species that **blooms every 7 years** at

elevations of 600 to 1000 meters above sea level.

- It is distinguished by the absence of petioles, unlike *Strobilanthes kunthiana* (Neelakurinji).
- It has 3 varieties found in the Western Ghats such as:
 1. *Strobilanthes sessilis* var. *sessilis*, found up to Nilgiri hills.
 2. *Strobilanthes sessilis* var. *sessiloides*, usually blooms in Coorg Hills, Karnataka.
 3. *Strobilanthes sessilis* var. *ritchiei*, found in Kas plateau, Maharashtra (rarest variety).



5. c

Clean Plant Programme

The Union Cabinet, headed by Prime Minister Narendra Modi, has recently approved the Clean Plant Programme that aims to improve the quality of fruits and vegetables.

- **Main objective** – To tackle diseases caused by viruses in fruit and vegetable crops.
- **Implementation** – It will be implemented by the National Horticulture Board in association with the Indian Council for Agricultural Research.
- **Key features** – Nine state-of-the-art centres will be established in the region-specific varieties of "clean plants" (disease-free traits) across India.
- It will cater to various fruits including grapes, apples, almonds, walnuts, citrus fruits, mango, guava, avocado, litchi, and pomegranate.

NINE CITIES, NINE CLEAN PLANT CENTERS LINKED TO ICAR INSTITUTES

The CPCs will be established in collaboration with the Indian Council of Agricultural Research (ICAR) for specific horticulture crops. Each CPC will be linked to a different ICAR institute.

■ IN PUNE, the CPC for grapes will be linked to the National Research Centre for Grapes, Pune

■ IN BIKANER, another CPC for citrus fruits will be developed at the Central Institute of Arid Horticulture, Bikaner

■ IN SOLAPUR, a CPC for pomegranate will be linked to the National Research Centre on Pomegranate, Solapur

■ IN BENGALURU, the CPC will cater to four crops – mango, guava, dragon fruit, and avocado – and be linked to the Indian Institute of Horticultural Research, Bengaluru

■ IN SRINAGAR, a CPC for temperate fruits – apple, almond, walnut, berries, etc. – will be developed at the Central Institute of Temperate Horticulture (CIHT), Srinagar

■ IN EAST INDIA, a CPC for tropical and subtropical plants will be developed in collaboration with ICAR's East India Horticulture Centres in West Bengal and Jharkhand

■ IN NAGPUR, a CPC for citrus fruits will be developed at the Central Citrus Research Institute, Nagpur

■ IN MUKTESHWAR, another CPC for temperate fruits will be developed at the CIHT's regional station in Mukteshwar

■ IN LUCKNOW, the Central Institute for Subtropical Horticulture will develop a CPC for mango, guava, and litchi

- **Benefits** – Farmers will get access to high-quality, disease-free planting material.
- It will increase both productivity and quality of fruits and vegetables.
- It enhances India's export potential for horticulture produce.
- **India** is the **second-largest producer of fruits and vegetables globally**.

16-08-2024

1) Consider the following statements:

Statement-I: August 14 is observed as 'Partition Horrors Remembrance Day.'

Statement-II: It is observed to acknowledge the pain undergone by Indians due to the partition of India in 1947.

Select the correct answer using the codes given below:

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect
- d. Statement-I is incorrect but Statement-II is correct

2) Consider the following statements with respect to Frilled Lizard

1. It is a type of reptile found in Australia and New Guinea.
2. They are members of the dragon family.
3. It lives in the tropical and warm temperate forests and savanna woodlands.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

3) Consider the following statements with respect to WISE (Wide-field Infrared Survey Explorer)

1. It was launched in 2009 to map the entire sky in infrared light.
2. It is an initiative of National Aeronautics and Space Administration (NASA).

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Mariner 4.0 Platform

1. It aims to address the age-old problem of motion sickness at sea through real-time monitoring and data analysis.
2. It functions in two ways to bring data from the shipboard sensors and passengers can use a specially designed mobile app to know about their symptoms.
3. It is developed by the Marine Scientific Research of international seabed authority.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. a

Partition Horrors Remembrance Day

- August 14 is observed as 'Partition Horrors Remembrance Day' to acknowledge the pain undergone by Indians due to the partition of India in 1947.
- **Need for observance** – About 2 million people killed in the most brutal ways.
- An estimated 1,00,000 women kidnapped and raped and more than 15 million men, women and children displaced.
- Loss of territory and people to the west and the east and worst of the horrors seen in Punjab and Bengal (colonial insensitivity in the thoughtless partition).
- **Similar relevance across world:**
- **International Holocaust Remembrance Day** – It is observed annually on **January 27** for the liberation of people (mostly Jewish) from Auschwitz Concentration Camp.
- The memories and recordings of survivors of the Holocaust have been crucial in preventing European societies from 'antisemitism' (hostility to or prejudice against Jewish people).
- **Counter-monuments** – They are erected in the vicinity of already existing monuments that are insensitive and misrepresentative.
- E.g., a sculpture of dying concentration camp victims placed next to the warrior memorial erected in honour of 76th Infantry Regiment unveiled by Hitler.

2. c

Frilled Lizard (*Chlamydosaurus kingii*)

- Frilled Lizard is a type of reptile **found in Australia and New Guinea**.
- The eggs are laid in underground nests and hatchlings are independent, able to hunt as they emerge and adept at using the neck frill.
- **Size and colour** – Its size and colour vary from region to region and the colour of the frill varies and is a result of carotenoids, which it acquires from the insect diet.
- **Classification** – These lizards can be classified into 3 different genetic groups.

- **Habitats** – The lizard lives in the **tropical and warm temperate forests and savanna woodlands** of northern Australia.
- It spends a large part of its life on the trees and seen to descend to feed on lizards, small mammals, and ants.
- **Conservation** – It is listed as Least Concern in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.
- **Threats to Survival** – Their main predators include birds of prey, larger lizards, snakes, and so on.



3. c

WISE (Wide-field Infrared Survey Explorer)

- WISE (Wide-field Infrared Survey Explorer) was launched in 2009 to map the entire sky in infrared light.
- It is an **initiative of National Aeronautics and Space Administration (NASA)**.
- Its catalog of three-quarters of a billion objects led to the discovery of the coolest and nearest brown dwarfs.
- It also found objects intermediate between stars and planets and of the most luminous galaxies in the Universe.
- WISE discoveries include:
 - Imaging the most luminous galaxy in the universe, shining with the light of more than 300 trillion suns.
 - Helping to largely rule out the theory of a "Planet X" orbiting in the far reaches of our solar system.
 - Uncovering millions of hidden black holes.
 - Discovering the coolest class of stars.
- WISE was placed in hibernation in February 2011 after completing its primary astrophysics

mission, but in late 2013, the spacecraft was reactivated, renamed NEOWISE.

- It also discovered many asteroids and continues to map the infrared sky today as **NEOWISE, searching for near-Earth asteroids**.
- **NEOWISE project** – Is the asteroid-hunting portion of the Wide-field Infrared Survey Explorer (WISE) mission.
- NEOWISE harvests measurements of asteroids and comets from the WISE images and provides a rich archive for searching WISE data for solar system objects.

4. b

Mariner 4.0 Platform

- Mariner 4.0 platform represents a significant advancement in maritime technology, with potential implications for global shipping, naval operations, and marine research.
- It aims to address the age-old problem of motion sickness at sea through real-time monitoring and data analysis.
- Motion sickness occurs due to a conflict between visual and vestibular sensory inputs, causing various symptoms like nausea, dizziness, and fatigue.
- The system was **developed by researchers at Stellenbosch University** and tested on the South African polar supply and research vessel, SA Agulhas II.
- **Key Features of Mariner 4.0:**
 - **Dual Monitoring System** – Ship-mounted sensors to measure vessel motion.
 - Mobile app for passengers to log symptoms and location.
 - **Real-time Data Dashboard** – Provides visual representation of motion sickness incidence and severity.
 - Accessible to ship's medical staff and command.
 - The **data is displayed on a dashboard**, which can be accessed by:
 - The ship's doctor to identify who might need medical attention.
 - The captain to potentially alter course to minimize motion sickness cases.
- **Potential Applications:**

- **Medical support** – Identifying passengers needing attention
- **Navigation** – Informing course adjustments to minimize discomfort
- **Technological Innovation** – Demonstrates the application of digital technology to solve practical maritime challenges.
- **Health and Safety** – Highlights advancements in occupational health and safety in the maritime sector.
- **International Cooperation** – The platform was developed and tested on South Africa's polar research vessel, showcasing international scientific collaboration.

17-08-2024

1) Consider the following statements with respect to Sea Fan Coral

1. They are rare flowering marine organisms that serve as a habitat for marine species and fish.
2. It is listed as a Schedule I under the Wild Life (Protection) Act (WPA), 1972.
3. It is traded illegally due to its medical reasons.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements:

1. Muger crocodiles is listed as 'vulnerable' in the red list of IUCN and also protected under the Schedule I of the Wildlife (Protection) Act, 1972.
2. Marsh crocodiles can live only in the lagoons and estuaries and cannot survive in the coastal saltwater.
3. Vishwamitri is Perennial River that originates in Parasnath Hills of Jharkhand.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three

d. None of the above

3) Consider the following statements with respect to Krishi-Decision Support System

1. It is a digital geospatial platform that provides seamless access to comprehensive all-India data to serve as a support system for agriculture sector.
2. The platform is developed jointly by the Ministry of Agriculture and the Department of Space.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Oeko-Tex Certification

1. It is a rigorous standard that ensures textiles are tested for harmful substances and produced in environment friendly conditions.
2. This certification is provided by the Global Organic Textile Standard.
3. The North Eastern Handicrafts and Handlooms Development Corporation was facilitated with this certification for its Eri Silk.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. b

Sea Fan Coral (Gorgonians) or Indrajal

Recently four persons were arrested by the Gujarat forest department for illegal wildlife trade of sea fans corals and it was seized by the officials.

- Sea fan coral (gorgonians) or Indrajal are rare flowering marine organisms and serve as a habitat for a number of marine species and fish.

- It is a member of a genus of invertebrate marine animals of the suborder Holaxonia (class Anthozoa, phylum Cnidaria).
- In India, they are known to be found in waters off the coasts of Gujarat, Lakshadweep, Tamil Nadu and the Andaman and Nicobar Islands.
- It is listed as a **Schedule I species** under the **Wild Life (Protection) Act (WPA), 1972**.
- Schedule I species, which include Bengal tigers and Indian elephants, are endangered and demand protection of the highest order.
- Hunting or trade in any parts of these listed animals can result in imprisonment for three to seven years, with a minimum fine of Rs 25,000.
- Gujarat is a key market for sea fan, which sees high demand among all economic sections of buyers, **due to superstitious beliefs**.
- There are **no medical reasons or problem-solving benefits associated with this**.
- It is primarily sold by astrologers for framing and display in homes to attract good luck.



2. a

Mugger crocodiles or Marsh crocodiles

A recent study has found that mugger crocodiles living in urban areas (specifically Vadodara) have significantly higher stress hormone levels compared to those in rural areas (Charotar) or in captivity.

- Mugger or Marsh (*Crocodylus palustris*) is a species of freshwater crocodile known for its broad head and snout and robust body.
- Muggers inhabit freshwater streams, ponds, and marshes, as well as saltwater lagoons and **coastal saltwater** in South Asia.
- It can be found in the Indian subcontinent as well as other countries in southern Asia.

- Muggers are primarily carnivorous, eating mostly fish, frogs, crustaceans, insects, mammals, birds and sometimes monkeys and squirrels.
- The **Moyar River** is home to one of the largest mugger populations in Tamil Nadu.
- Mugger crocodiles is listed as 'vulnerable' in the red list of IUCN and also protected under the Schedule I of the Wildlife (Protection) Act, 1972.
- Among all crocodylian species, muggers rank third in terms of human–crocodile conflict, after the saltwater (*Crocodylus porosus*) and Nile (*Crocodylus niloticus*) crocodiles.
- India saw a fivefold increase in human–mugger conflict (HMC) incidences over the last two decades, from 57 incidents in 2001–2010 to 338 reported incidents in 2011–2020”.
- Factors contributing to stress of Mugger crocodiles in Vadodara:
 - Urban environment with high population density
 - Presence of chemical industries
 - Sewage pollution in rivers
 - High dependency of locals on rivers for daily activities
 - Increased human-crocodile conflict
- **Vishwamitri** – Is a **seasonal river** that originates in the hills of Pavagadh in the district of Panchmahal, **Gujarat** and flows through Vadodara, before ending in the Gulf of Khambhat.
- It have large crocodile populations.

3. c

Krishi-Decision Support System(Krishi-DSS)

Krishi-Decision Support System (Krishi-DSS) is a new digital geo-spatial platform specifically designed for Indian agriculture that was recently launched by the Minister of State for Agriculture & Farmers' Welfare.

- Krishi-Decision Support System is a digital geospatial platform that provides seamless access to comprehensive all-India data to serve as a support system for agriculture sector.
- It provides real-time data on weather, soil conditions, crop health, and so on.
- It includes several advanced modules designed to support comprehensive agricultural

management and from the vast expanse of fields to the smallest soil particle.

- Krishi-DSS is **developed jointly by the Ministry of Agriculture and the Department of Space**.
- With crop mapping and monitoring, it aids to understand cropping patterns by analysing parcel-level crop maps over the different years.
- Krishi-DSS is more than just a tool, it's a catalyst for innovation and sustainability in agriculture.
- Together, we'll build a resilient, sustainable, and prosperous agriculture for India.
- Features of Krishi-DSS:
 - Crop mapping and monitoring
 - Drought monitoring
 - Crop weather watch
 - Field parcel segmentation
 - One nation-one soil information system
 - Ground truth data library
 - Flood impact assessment and crop insurance solutions
- Benefits and Applications:
 - Enables targeted interventions for sustainable agriculture.
 - Provides early disaster warnings (e.g., pest attacks, heavy rain).
 - Supports precision agriculture and crop monitoring.
 - Aids in disaster management and soil health management.

4. b

Oeko-Tex Certification

The North Eastern Handicrafts and Handlooms Development Corporation (NEHHDC) has recently received the Oeko-Tex Certification for its Eri Silk.

- The Oeko-Tex certification is a rigorous standard that ensures textiles are tested for harmful substances and produced in environment friendly conditions.
- **Oeko-Tex Certification is provided by the OEKO-TEX organisation.**

- OEKO-TEX consists of **independent textile and leather testing institutes** located in Europe and Japan.
- The institutes work together to develop test methods and define limit values that form the basis of OEKO-TEX standards.
- The testing institutes carry out accredited testing processes.
- These institutes are active in research and development and are committed to innovation in the textile and leather industries.
- They conduct both laboratory tests and company audits in accordance with global OEKO-TEX guidelines.
- The North Eastern Handicrafts and Handlooms Development Corporation (NEHHDC) has successfully obtained the prestigious Oeko-Tex certification for its Eri Silk.
- NEHHDC works under the aegis of the Ministry of Development of North Eastern Region (DoNER).
- **Significance of Oeko-Tex Certification:**
 - This achievement further cements the silk's status as a Geographical Indication (GI) product of Assam, highlighting its authenticity and regional importance.
 - This certification marks a pivotal step in bringing Eri Silk closer to penetrating the global export market, expanding its reach, and establishing a strong international presence.
 - **Eri silk** – Is one of the most durable and strong fibres. It is cooling in the summer and warming in the winter.
 - Eri Silk, celebrated as the **world's only vegan silk**, distinguishes itself through an ethical production process where the silk moth is allowed to naturally emerge from its cocoon, leaving the silk intact.
 - This compassionate method sets Eri Silk apart from other from other silks, aligning with growing global demands for sustainable and eco-friendly textiles.
 - It is **mostly found in tribal areas of Assam.**

19-08-2024 & 18-08-2024

1) Consider the following statements with respect to Green Tug Transition Program (GTTP)

1. It is set to drive the transition from conventional fuel-based harbour tugs to greener, more sustainable alternatives.
2. It is an initiative under the 'Panch Karma Sankalp'.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements with respect to Rapid Innovation and Start-up Expansion (RISE) Accelerator

1. It is a purpose-built program to support and accelerate start-ups between India and USA.
2. It is an initiative under INDUS-X.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following pairs:

<i>Plant Pathogens</i>		<i>Causes</i>
1. Phakopsora pachyrhizi	–	Soybean Rust
2. Zymoseptoria Tritici	–	Wheat Blotch
3. Cochliobolus miyabeanus	–	Brown Spot Disease

How many of the pair(s) given above is/are **incorrectly matched**?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

4) Consider the following statements with respect to Cyanide

1. Cyanide is a chemical compound that can exist in many forms.
2. It is a potent toxin that is present in various plants, fruits and microorganisms.
3. Cyanide sensor can enhance safety of water and food products.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

5) Consider the following statements with respect to Humayun's Tomb

1. It was the first garden-tomb on the Indian subcontinent.
2. It is an example of the charbagh with pools joined by channels.
3. It is included in the list of world heritage convention.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. c

Green Tug Transition Program (GTTP)

- The Green Tug Transition Program (GTTP) is designed to phase out conventional fuel-based harbour tugs operating in Indian Major Ports and replace them with green tugs.
- Green tugs are powered by cleaner and more sustainable alternate fuels.
- The first set of tugs will be **battery-electric**, with provisions for adopting other emerging green technologies such as **hybrid**, **methanol** and **green hydrogen** as the industry evolves.
- GTTP is an **initiative under the 'Panch Karma Sankalp'**.

- Phase 1 of the GTTP will begin on October 1, 2024 and continue until December 31, 2027.
- During phase 1, Four Major Ports will procure or charter at least two green tugs each, based on standardized designs and specifications issued by the Standing Specification Committee (SSC).
- Four Major Ports include:
 - Jawaharlal Nehru Port Authority
 - Deendayal Port Authority
 - Paradip Port Authority
 - V.O. Chidambaranar Port Authority
- It is a pivotal initiative towards realizing our vision of a sustainable and green maritime sector in India.
- Harbor tugs, vital for port operations like:
 - Berthing, un-berthing, and ship assist functions,
 - Ideal candidates for adopting green technologies, such as electric propulsion and alternative fuels and
 - Significantly cut emissions while maintaining operational efficiency.
- By the end of 2040, all tugs operating in Indian Major Ports are envisioned to transition to green tugs, ensuring a standardized and eco-friendly fleet across the country.
- The **Maritime India Vision 2030 (MIV 2030)**, launched by the Prime Minister Shri Narendra Modi in 2020.

2. d

Rapid Innovation and Start-up Expansion (RISE) Accelerator

India Australia RISE Accelerator has recently called for Start-ups and MSMEs in Climate Smart Agritech.

- Rapid Innovation and Start-up Expansion (RISE) Accelerator is a purpose-built program to support and accelerate start-ups from **India and Australia**.
- It provides support to start-ups and small- to medium-sized enterprises that works on innovative technology and are considering overseas expansion between India and Australia.
- It is a nine-month accelerator program that enables Australian and Indian innovators and industry partners to tackle shared national and global challenges.

- It is a **flagship initiative under the Atal Innovation Mission (AIM)** of NITI Aayog to promote a culture of innovation and entrepreneurship in the country.
- From Australia, this program is supported by the *Commonwealth Scientific and Industrial Research Organisation (CSIRO)*, Australia's national science agency.
- There is **no charge** for start-ups / SMEs to participate in the program, with a number of opportunities to travel between Australia and India.
- Selected start-ups / SMEs may also be eligible for up to **INR 45 lakhs in non-equity grant**.
- Focus Themes** – The program **focuses on environment and climate technologies**.



3. d

Plant Pathogens

Plant pandemics could be the next big contagion and pose threats to global food security.

- Past plant disease outbreaks that led to humanitarian crises, such as the Irish Potato Famine (1845-1852) and the Bengal famine (1943).

Pathogens	Causes & its Impacts
Phakopsora pachyrhizi	<ul style="list-style-type: none"> It is a fungus that causes soybean rust. It is one among the most destructive diseases on these crops.

Zymoseptoria Tritici	<ul style="list-style-type: none"> • It is a fungus that causes wheat blotch. • Wheat blotch is a common disease of wheat, often occurring alongside other foliar diseases.
Cochliobolus miyabeanus	<ul style="list-style-type: none"> • It causes brown spot disease in rice that led to the death of over 2 million people.
Fusarium oxysporum	<ul style="list-style-type: none"> • It is a soil fungus that ruins banana plantations across the world.

• **Current vulnerabilities:**

- Lack of genetic diversity in crops due to the pursuit of high-performing cultivars.
- Monoculture farming practices.
- Climate change exacerbating disease spread and plant susceptibility.

• **Climate change effects:**

- Extreme weather events spreading diseases across continents.
- Rising temperatures increasing disease risk and suppressing plant immunity.
- Elevated CO₂ levels increasing pathogen severity.

• **Surveillance and management strategies:**

- Genomic surveillance to control disease spread.
- Open data sharing platforms like Open-Wheat-Blast.
- Early warning systems like Wheat DEWAS.

• **Research efforts:**

- Identifying resistant genes (e.g., Rmg8 for wheat blast).
- International collaboration on disease surveillance.

• **Call to action:**

- Need for an overhaul in food production methods.
- Importance of coordinated efforts and active surveillance in a warming, globalized world.
- Coordinated effort and active surveillance are the only ways to beat pathogens in this warming and globalised world.

4. c

Cyanide

A research team at the Central University of Kerala has recently achieved a significant breakthrough in chemical sensing by developing a highly sensitive and selective cyanide sensor.

- Cyanide is a chemical compound that can exist in many forms, including gas, liquid, or solid.
- It can be a colourless gas or liquid, such as hydrogen cyanide (HCN) or cyanogen chloride (CNCl).
- Cyanide is **extremely poisonous** and can *interfere with the body's ability to use oxygen*.
- The World Health Organisation (WHO) has set strict guidelines for its presence in potable water, *limiting cyanide concentrations to below 0.19 mg/L* due to its lethal effects on humans and aquatic life.
- Cyanide exposure can occur through consumption of certain foods like cassava (tapioca) and even common items like apple and apricot seeds, sprouting potatoes and almonds.
- The risk is particularly severe in regions where cyanide-rich foods are staples.
- It is sometimes described as having a “bitter almond” smell, but does not always give off an odour, and not everyone can detect this odour.
- **Signs and Symptoms** – It includes:
 - Chest pain, Chest tightness, Confusion, Dizziness, Eye pain and Eye tearing,
 - Excitement, Difficulty breathing, Headache, Nausea, Rapid or slow heart rate and
 - Rapid or slow breathing, Restlessness, Shortness of breath and Vomiting, Weakness and Wheezing.
- It can progress very rapidly when exposed to a large amount of cyanide.

- It causes health effects such as:
 - Coma, Death, High or low blood pressure, Loss of consciousness, Lung injury and Seizures.
- **Treatment** – Cyanide poisoning is treated with specific antidotes and supportive medical care in a hospital setting or by trained emergency personnel.
- **Long-term Health Effects** – Survivors of significant cyanide exposure may develop heart, brain and nerve damage.
- **Cyanide Sensor developed by the Central University of Kerala** – It is a highly sensitive and selective cyanide sensor.
- The sensor *can detect toxic cyanide at low concentrations*, improving safety for drinking water and food products.
- The sensor material **changes colour from yellow to colourless** when it detects cyanide, providing a visual cue.
- It selectively *detects cyanide without interference from other ions*, ensuring accuracy in various testing environments.
- The sensor has been successfully tested on tapioca extracts, where it changes colour from yellow to bluish-green.
- A strip for qualitative detection has also been developed, changing colour upon cyanide exposure.
- The research is particularly relevant given recent incidents of cyanide poisoning, such as the death of 13 cows in Idukki district after consuming tapioca hulls.

5. c

Humayun's Tomb

- Humayun's Tomb is built in 1570 AD and commissioned by Humayun's son, Emperor Akbar.
- It is the **first garden-tomb on the Indian subcontinent**.
- **Architectural Features:**
- **Charbagh pattern** – Four quadrant garden representing the four rivers of Quranic paradise.
- Double dome structure, 42.5 meters high and red sandstone with white and black inlaid marble borders.

- Octagonal chamber with vaulted roof.
- **Cultural Importance:**
- Blend of Persian and Indian architectural styles.
- Represents the syncretic culture of the Mughal era.
- Located in the culturally significant Nizamuddin area.
- **UNESCO World Heritage Site:**
- It was **inscribed in the list of world heritage convention** in 1993.
- Recognized for its architectural innovations and influence on later Mughal architecture.
- **Conservation Efforts:**
- Managed by Archaeological Survey of India (ASI).
- Conservation project in partnership with Aga Khan Trust for Culture since 1997.
- Focus on using traditional materials and techniques in restoration.
- **Legal Protection:**
- Protected under various legislations including Ancient Monuments and Archaeological Sites and Remains Act 1958.
- **Cultural Context:**
- Known as the 'dormitory of the Mughals' with over 150 Mughal family members buried there.
- Represents the power and grandeur of the Mughal dynasty.
- **Architectural Innovations:**
- Introduction of the garden-tomb concept in India and use of a high, wide terraced platform.
- Incorporation of chhatris (domed pavilions) in the design.

20-08-2024

1) Consider the following statements with respect to Shaurya Sampravah 1.0

1. It is a formal interaction with senior veteran officers to harness the rich experience and insights of the veteran community.

- It is an initiative by Indian army that aids to foster collaboration between veterans and current leaders for nation-building and transformation goals.

Which of the above statement(s) is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

2) Consider the following statements with respect to First Policy Makers' Forum

- It aims to elevate India's position in the global pharmaceutical sector by recognizing the Indian Pharmacopoeia.
- It is hosted by the Indian Pharmacopoeia Commission in collaboration with the Ministry of Parliamentary Affairs.
- Adverse Drug Reaction Monitoring System (ADRMS) software, India's first indigenous medical product safety database was launched at the event.

How many of the statements given above are correct?

- Only one
- Only two
- All three
- None of the above

3) Consider the following statements with respect to Godda Project

- It is India's first transnational power project supplying all generated power to another country.
- The plant utilizes advanced ultra-supercritical technology for efficient power generation.
- It provides reliable and affordable electricity to Nepal.

How many of the statements given above are correct?

- Only one
- Only two
- All three
- None of the above

4) Consider the following pairs

Terms in News	Countries
1. Sabina Shoal	– Bangladesh
2. Donetsk	– Paris
3. Krugersdorp	– Ukraine

How many of the pair(s) given above is/are correctly matched?

- Only one
- Only two
- All three
- None of the above

Answers

1. c

Shaurya Sampravah 1.0

The event Shaurya Sampravah 1.0 was recently launched by the General Upendra Dwivedi, Chief of the Army Staff at the Manekshaw Centre in Delhi.

- Shaurya Sampravah 1.0 aims to harness veterans' experience for the Army's transformation initiatives and national development.
- It is an **initiative by Indian army** that aids to foster collaboration between veterans and current leaders for nation-building and transformation goals.
- It also allowed veterans to interact with General Officers Commanding-in-Chief of all Army commands, deepening their understanding of the Army's operational landscape and strategic priorities.
- The "Decade of Transformation" roadmap was presented, outlining the Army's strategic vision for the next 10 years.
- The discussions at the event covered modernization efforts, technology absorption, and the Army's role in achieving Viksit Bharat@2047.
- The Agnipath Scheme and other human resource management initiatives were also discussed.
- Veterans had the opportunity to interact with current leadership, including Commanding-in-Chiefs of all Army commands.

2. b

First Policy Makers' Forum

The First Policy Makers' Forum was inaugurated by the Union Minister of Health & Family Welfare that aims to elevate India's position in the global pharmaceutical sector.

- First Policy Makers' Forum is an international delegation of policymakers and drug regulators from **15 countries** participated in the forum.
- 15 countries includes nations from Africa, Latin America, Southeast Asia, and the Pacific.
- The forum aimed to foster discussions on recognizing the Indian Pharmacopoeia (IP) and implementing the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP).
- The IP Online Portal and ADRMS software are expected to enhance the accessibility and efficiency of drug safety monitoring and standards compliance.
- ADRMS software is **India's first indigenous medical product safety database** tailored to the needs of the Indian population.
- It was **developed as part of the Pharmacovigilance Programme of India**.
- The forum witnessed the launch of innovative digital platforms: the Indian Pharmacopoeia Online portal and the **Adverse Drug Reaction Monitoring System (ADRMS) software**.
- The forum was *hosted by the Indian Pharmacopoeia Commission (IPC)*, in collaboration with the **Ministry of Health & Family Welfare and the Ministry of External Affairs**.
- **India's Global Health Contributions:**
 - India is known as the 'pharmacy of the world'.
 - Supplies generic drugs for diseases like malaria, HIV-AIDS, and tuberculosis.
 - Produces about 60% of global vaccine supply.
 - Supplied COVID-19 vaccines globally under the Vaccine Maitri Programme.
- **Key Government Initiatives:**
 - **Jan Aushadhi Scheme** – Providing affordable generic medicines.
 - **Ayushman Bharat** – Large-scale health insurance program.

3. b

Godda Project

- Godda Project is India's first transnational power project supplying all generated power to another country.
- It is located at **Godda**, a district in **Jharkhand**.
- It is **owned by Adani Power Jharkhand Limited (APJL)**, a subsidiary of Adani Power Limited.
- **Power supply to Bangladesh** – APJL will supply 1,496 MW of net capacity power to **Bangladesh** under a 25-year Power Purchase Agreement (PPA).
- **Ultra-supercritical technology** – The plant utilizes advanced ultra-supercritical technology for efficient power generation.
- **Power Supply Agreement** – 25-year Power Purchase Agreement (PPA) with Bangladesh Power Development Board (BPDB).
- Power is transmitted via 400 kV dedicated transmission system.
- **Environmental benefits** – The plant is equipped with Flue Gas Desulphurizer (FGD) and Selective Catalytic Converter (SCR) systems to minimize emissions.
- **Significance** – Enhances energy security in Bangladesh
- Replaces costly power generated from liquid fuel in Bangladesh.
- Expected to reduce average cost of power purchased by Bangladesh.

4. d

Sabina Shoal, Donetsk & Krugersdorp

- **Sabina Shoal** – It is a disputed atoll in the North East of Dangerous Ground in the Spratly Islands of **South China Sea**.
- It is also known as Bai Sa Bin, Escoda Shoal and Xianbin Jiao.
- **Donetsk** – It is an industrial city in eastern **Ukraine** located on the Kalmius River.
- It was formerly known as Aleksandrovka, Yuzivka, Stalin, and Stalino.
- **Krugersdorp** – A mining city at West Rand in **South Africa**.

- In recent times there are serious health risks faced by young children in Krugersdorp due to *abandoned legacy mines*.

21-08-2024

1) Consider the following statements with respect to Hay-flick Limit

1. It refers to the maximum number of times a cell can divide before entering senescence.
2. Hay-flick found that normal somatic cells can only divide a limited number of times.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements with respect to National Geoscience Awards

1. It is awarded to individuals or team(s) in recognition of meritorious contribution in disciplines such as basic geosciences and natural hazard investigations.
2. National Young Geoscientist Award is one of the categories under it.
3. The Award for Lifetime Achievement and the Young Geoscientist Award can be awarded only to the individuals and not teams.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

3) Consider the following statements with respect to PROMPT Portal

1. It automates the process for newspaper registration and related procedures.
2. It serves as a unified bilingual platform hosting videos on the government's development and citizen welfare measures.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Exotic Animals

1. It refers to a species not found in a concerned habitat or geographical area.
2. They are listed under Schedule I of the Wild Life (Protection) Act, 1972.
3. Asiatic Lion is an exotic species that can be found only in India.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

5) Hema Committee, sometimes seen in the news is associated with?

- a. Reforms in the Indian Council for Cultural Relations (ICCR).
- b. To examine stalled real estate projects and to recommend ways to complete the stalled projects.
- c. To study the challenges faced by women in the Malayalam film industry.
- d. To recommend a roadmap for implementation of Euro norms based on emission standards for India.

Answers

1. c

Hay-flick Limit

- In the early 1960s, Hay-flick found that normal somatic cells can only divide a limited number of times (about 40-60).
- This challenged the previous belief that cells were potentially immortal and that aging was solely due to external factors.
- **The Hay-flick limit** – It refers to the maximum number of times a cell can divide before entering senescence (stopping division).

- This limit varies among species, correlating with their lifespans.
- For humans, the "ultimate Hay-flick limit" is around **125 years**.
- **Telomeres and aging** – Telomeres are protective DNA sequences at the ends of chromosomes.
- They shorten with each cell division, eventually reaching a critical point where division stops.
- While telomere shortening is related to aging, the exact relationship is not fully understood.
- **Implications and future research** – Cancer cells can overcome the Hay-flick limit by activating telomerase.
- While telomerase synthesis has shown promise in slowing telomere loss in vitro, practical applications remain distant.

2. c

National Geoscience Awards

President of India recently conferred National Geoscience Awards- 2023 to the awardees.

- The National Mineral Awards Scheme was instituted in the year 1966 by the Ministry of Mines, Government of India.
- The scope of the awards has been expanded and the name changed to National Geoscience Awards (NGA) from 2009.
- The objective of the scheme is to honour individuals and teams for extraordinary achievements and outstanding contributions in the field of fundamental / applied geosciences mining and allied areas.
- **Eligibility** – Any citizen of India with significant contribution in any field of earth sciences is eligible for the Award.
- The Award for Lifetime Achievement and the Young Geoscientist Award can be awarded only to the individuals and not teams.
- **Categories** – There are **3 categories** of awards under National Geoscience Awards:
 1. National Geoscience Award for Lifetime Achievement
 2. National Geoscience Award and
 3. National Young Geoscientist Award
- The awards are given only for the following disciplines:

Broad Disciplines	Fields
Mineral Discovery & Exploration	1. Mineral Discovery & Exploration 2. Coal, Lignite and Coal Bed Methane Discovery & Exploration
Mining, Mineral Beneficiation & Sustainable Mineral Development	1. Mining Technology 2. Mineral Beneficiation 3. Sustainable Mineral 4. Development
Basic Geosciences	Basic Geosciences including Stratigraphy, Structural geology & Paleontology, Geodynamics, Geochemistry, geochronology and Isotope Geology, Ocean Development.
Applied Geosciences	1. Applied Geology 2. Geophysics / Applied Geophysics 3. Natural Hazard Investigations

• National Geoscience Awards, 2023:

- It was awarded to 21 Geoscientists, including academicians and professionals from across the country, were honoured under 3 categories in various specialized fields of geosciences such as:
- National Geoscience Award for Lifetime Achievement (01 award),
- National Geoscience Award (10 awards) and
- National Young Geoscientist Award (01 award)

Awards	Recipients or Teams	Contributions
National Geoscience Award for Lifetime Achievement	Prof. Dhiraj Mohan Banerjee	Distinguished and pioneering work on phosphorites, isotope geology, and organic geochemistry of Precambrian sedimentary rocks of India.
National Young Geoscientist Award	Dr. Ashutosh Pandey	For his research on the Eastern Dharwar Craton and Paleoproterozoic Lesser Himalayan mafic rocks.

National Geoscience Award	Two teams from the Geological Survey of India (GSI).	Mineral Discovery & Exploration (excluding fossil fuels) of economic and/or strategic importance and application of innovative techniques.
National Geoscience Award	Pawan Dewangan	Strategic importance and application of innovative techniques and Oil, Natural Gas, Shale Gas and Gas Hydrates Discovery & Exploration
National Geoscience Award	Harsh Kumar Verma	Development and application of new methods and technologies, research & development. Conservation of mineral resources, systematic mine planning, mine safety, mine fires, mine hazards, mine reclamation & rehabilitation.
National Geoscience Award	Narasimha Mangadoddy	Mineral processing, project development for utilization of low-grade ores & production of value-added mineral products and mineral economics) and Sustainable Mineral Development

3. d

PROMPT (Portal for Online Monitoring of Projects – Thermal) Portal

The Union Minister of Power has recently launched a new online platform named PROMPT Portal to enable transparent, coordinated, and effective working of the power sector in the country.

- Portal for Online Monitoring of Projects – Thermal (PROMPT) is part of a broader effort to enhance the efficiency and transparency of thermal power project management in India.
- The PROMPT portal is introduced **to streamline the monitoring process for thermal power projects.**
- It aims to facilitate *real-time tracking, transparent reporting, and coordinated efforts among stakeholders* to address project issues promptly.
- **Key Features of the PROMPT:**

- **Real-Time Tracking** – Allows for centralized monitoring and swift identification of issues.
- **Transparency** – Enhances accountability and project management efficiency.
- **Resource Optimization** – Helps in managing resources predictably, aiding in maintaining a balance between demand and supply.
- **Press Sewa Portal** – Developed under the Press and Registration of Periodicals Act, 2023 (PRP Act, 2023).
- **It automates the process for newspaper registration and related procedures.**
- **NaViGate Bharat Portal** – Is developed by the New Media Wing of the Ministry.
- **It serves as a unified bilingual platform hosting videos on the government's development and citizen welfare measures.**

4. b

Exotic Animals

The Union government has recently stated that the last date for declaring Exotic animals listed under Schedule IV of the Wild Life (Protection) Act, 1972 is 28 August 2024

- 'Exotic species' is a term used to refer to a species not found in a concerned habitat or geographical area and hence it is non-native.
- The trade of exotic species occurs globally, with a growing market for the species.
- While the trade negatively impacts habitat, the targeted species are often extracted from their natural habitats in the wild.
- These living specimens of exotic animals **listed under Schedule IV of the Wild Life (Protection) Act, 1972** are to be reported and registered by the concerned individuals, organizations and zoos.
- The registration of these exotic animal species is to be done in the PARIVESH 2.0 portal.
- Anyone who owns or keeps an animal species listed in Schedule IV of the Wild Life (Protection) Act 1972 must do two things:
 1. Report details about these animals
 2. Apply for registration
- They need to do this online through the PARIVESH 2.0 website.

- The application should be sent to their state's Chief Wild Life Warden.
- There are two deadlines to remember:
 - If you already have the animal: Within 6 months after the official notice is published
 - If you get the animal later: Within 30 days of getting the animal
- This rule helps track protected species and ensures they're properly registered with wildlife authorities.
- Exotic wildlife species can be found only in India are:
 - One-horned rhino, Assam
 - Great Indian Bustard, Gujarat and Rajasthan
 - Nilgiri Tahr, Kerala and Tamil Nadu
 - Andaman Cobra, Andaman Islands
 - Barasingha, Assam and other locations
 - Asiatic Lion, Gujarat
 - Snow Leopard, Himalayan National Park

5. c

Hema Committee

The Justice Hema Committee recently published a report revealing sexual exploitation in the Malayalam film industry seven years after the brutal rape of an actress in Kochi.

- Hema Committee was formed to *study the challenges faced by women in the Malayalam film industry.*
- **Key findings from the report:**
- **Systemic sexual harassment** – The report revealed a pervasive culture of sexual harassment within the Malayalam film industry, often perpetrated by those in positions of power.
- **Casting couch culture** – The report highlighted the prevalence of the casting couch, where aspiring actors and actresses are expected to engage in sexual favours in exchange for roles.
- **Gender inequality** – Deep-rooted gender inequalities were identified, with women facing discrimination and limited opportunities compared to their male counterparts.

- **Powerful 'boys' club'** – The report pointed to a dominant 'boys' club' that controls the industry, making it difficult for women to succeed.
- **Recommendations from the report:**
- **Mandatory written contracts** – To ensure transparency and protect the rights of artists and technicians.
- **Internal complaint committees** – On all film sets to address complaints of harassment and discrimination.
- **Tribunal with judicial powers** – To handle cases related to sexual harassment, service conditions, and contract breaches.
- **Government's role:**
- **Delayed release** – The government's delay in releasing the report was criticized, as it hindered the process of addressing the issues.
- **Investigation** – The government should have investigated the allegations raised in the report, even if legal action was not possible.
- Industry bodies' response:
- **Guarded silence** – The Association of Malayalam Movie Artists and Film Employees Federation of Kerala were criticized for their lack of action and transparency.
- **Opportunities for change:**
- **Correct systemic issues** – The release of the report presents an opportunity to address the deep-rooted problems within the industry.
- **Implement recommendations** – The government and industry bodies should work together to implement the recommendations of the Hema Committee.
- **Create a more equitable environment** – The goal is to create a Malayalam film industry where women have equal opportunities and are treated with respect.
- Overall, the Hema Committee report is a significant step towards addressing the systemic issues plaguing the Malayalam film industry.
- By implementing the recommendations and fostering a culture of accountability, the industry can strive to create a more equitable and inclusive environment for all.

22-08-2024

1) Consider the following statements with respect to Building and other Construction Workers (BoCW) Management Information System (MIS) Portal

1. The construction workers can avail benefits of various schemes once they register in this portal.
2. It was launched by the Ministry of Micro, Small and Medium Enterprises.
3. The portal will function as the centralised data management system for compilation and analysis of the data obtained from BoCW welfare boards of the states.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements with respect to Multi-cancer Early Detection (MCED) Test

1. It is a type of liquid biopsy that detects circulating tumour DNA or cells released by cancers at early stages.
2. The test can detect up to 50 types of cancer, including those like ovarian, liver, stomach, pancreatic, and esophageal cancers.
3. It is similar to genetic testing that looks for inherited genes that may increase cancer risk over a lifetime.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

3) Consider the following statements with respect to Jumping Genes

1. Jumping genes are parts of a genome that can move from one location to another.
2. Jumping genes is found only in humans.
3. TnpB is a protein made up of around 400 amino acid units that belongs to a family of transposable elements.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

4) Orangutan diplomacy, sometimes seen in the recently, is an initiative by?

- a. Indonesia
- b. Malaysia
- c. India
- d. Maldives

5) Consider the following pairs:

Projects	Countries
1. Punatsangchhu	– Bhutan
2. Three Gorges Dam	– China
3. Teesta V	– India

How many of the pair(s) given above is/are correctly matched?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. c

Building and other Construction Workers (BoCW) Management Information System (MIS) Portal

Ministry of Labour & Employment has recently launched BoCW MIS Portal for the welfare of the BoC workers and unorganized workers.

- Building and other Construction Workers (BoCW) Management Information System (MIS) aims at welfare of the BoC workers and unorganized workers
- It will function as the centralised data management system for compilation and

analysis of the data obtained from BoCW welfare boards of the states.

- In this portal the construction workers can register themselves to avail benefits of various schemes.
- **The portal was launched by the Ministry of Labour & Employment.**
- The details of the following can be obtained from the website:
 - Fund utilisation and on boarding of data on registration of the workers under various central and state schemes,
 - Pertaining to social security benefits, insurance, health benefits and housing schemes among others.

2. b

Multi-cancer Early Detection (MCED) Test

Early detection is crucial to address the growing incidents of cancer and multi-cancer early detection (MCED) test plays a significant role in early detection of cancer.

- A multi-cancer early detection (MCED) test is a **type of liquid biopsy** that **detects cancer signals** such as circulating tumour DNA (ct-DNA) and circulating tumour cells (CTCs).
- It can spot circulating tumour DNA or circulating tumour cells early and help ensure treatment can be more effective.
- The test can **detect up to 50 types of cancer**, including those like ovarian, liver, stomach, pancreatic, and esophageal cancers.
- It can also alert individuals to difficult-to-detect and aggressive cancers and is particularly recommended for adults and those at higher risk.
- It is **different from genetic testing**, which looks for inherited genes that may increase cancer risk over a lifetime.
- The MCED test does not assess genetic predispositions or inherited genetic changes related to cancer.
- MCED tests are *still new and are not in the approved Central Drugs Standard Control Organisation (CDSCO) list yet.*
- In India, the CDSCO is responsible for drug, medical devices and diagnostic kits.

- **Challenges:**
- **False positives** – A significant risk of MCED tests is **false positives**, where the test indicates cancer when there is none.
- When multiple tests are used for screening, the false positive rate can be as high as 50%.
- However, combining MCED tests with traditional screening methods can reduce this rate significantly.
- **Variable sensitivity** – While MCED tests generally have high specificity (>96%), their sensitivity can vary.
- Factors influencing sensitivity include study design, population, reference standard test used, and duration of follow-up.
- **Over-diagnosis and overtreatment** – There's a risk of detecting cancers that may never have caused symptoms or required treatment in a person's lifetime.
- This can lead to unnecessary physical, psychological, and financial strain due to additional tests and treatments.
- **Need for follow-up procedures** – A positive MCED result requires further diagnostic evaluations to confirm and understand the suspected cancer.
- This process can be anxiety-inducing and potentially costly.
- **Interpretation challenges** – As these tests are new, there's a need for specialized training for healthcare providers to interpret results accurately.
- **Post-test support** – Comprehensive post-testing support is crucial, especially in places like India where these tests are new.
- This includes patient education, counselling services, and decision support tools.
- **Expensive** – The tests can be expensive (up to Rs 15,000 per instance in India), which may limit accessibility.

Cancer
<p><i>Cancer is responsible for 18% of deaths from non-communicable diseases, making it the second leading cause of mortality in the country.</i></p> <ul style="list-style-type: none"> • In 2022 alone, an estimated 14 lakh new cancer cases occurred in India, a number expected to rise by 12% by 2025.

- There is strong evidence that organised cancer screening can reduce mortality.
- **Challenges:**
- India lacks in organized cancer screening.
- According to the recent National Family Health Survey (NFHS-5, 2019-21), cancer screening in India is limited to cervical, breast, and oral cancers, with only 0.2-2% of people having undergone any form of screening.
- Structural barriers like limited health infrastructure.

- **Improvements made** – Codon optimization to match plant cells.
- Tweaking regulatory elements (promoters and terminators) to enhance TnpB expression.
- **Potential applications** – Removing anti-nutrient factors from food crops.
- Reducing crop susceptibility to pests.
- Developing shorter rice crops less prone to cyclone damage.
- **Limitations and future work** – Most data obtained from protoplasts; results might differ in whole plants.
- Lower efficiency observed in dicot plants (0.2-0.46% in Arabidopsis).
- Further development and testing in various crop species needed.

3. b

Jumping Genes & TnpB

- Jumping Genes is also called as transposable elements or transposons that was discovered by the Barbara McClintock.
- They are parts of a genome that can move from one location to another.
- They can change their position within a genome, sometimes creating or reversing mutations.
- They can be **found** in an array of life-forms, including **bacteriophages, bacteria, plants, worms, fruit flies, mosquitos, mice, and humans**

TnpB

- **TnpB** is a protein made up of around 400 amino acid units that belongs to a family of transposable elements.
- TnpB is guided by RNA to target DNA sequences.
- TnpB is **significantly smaller than Cas9 and Cas12**, making it easier to deliver into plant cells.
- While **TnpB may not be as efficient as Cas9 or Cas12 in all cases**, it can still achieve significant editing rates in plant genomes.
- It binds to and eliminates undesirable sequences, which are then replaced with desirable ones.
- **Efficiency** – Achieved 33.58% editing efficiency in average plant genomes.
- Effective on both monocots (e.g., rice) and dicots (e.g., Arabidopsis).

4. b

Orangutan Diplomacy

Malaysia has recently proposed sending of critically endangered Orangutans as gifts to palm oil-purchasing countries.

- In an attempt to bolster its international image and strengthen diplomatic ties, **Malaysia** has announced plans to **gift Orangutans to key economic partners**.
- The move comes in the wake of the European Union's decision to ban agricultural imports from deforested lands after 2020, which could have a significant impact on Malaysia's palm oil industry.
- The palm oil sector is a major contributor to the country's economy, but its expansion has often come at the expense of orangutan habitats.
- Critics argue that gifting orangutans to foreign nations is a morally questionable and ineffective strategy.
- Moreover, they warn that the initiative could incentivize illegal wildlife trade and further endanger orangutan populations.
- **Orangutans, known as "people of the forest" in Malay and Indonesian, are found exclusively in Malaysia and Indonesia.**
- These great apes are **critically endangered due to habitat loss, poaching, and the illegal pet trade.**

- The palm oil industry, which has driven extensive deforestation in both countries, is a major threat to their survival.
- While Malaysia has taken some steps to protect orangutans and their habitats, critics argue that more needs to be done to address the root causes of their decline.
- **Orang-utans** – Are the *world's largest tree-climbing mammals*.
- But their forest habitat in Indonesia and Malaysia is rapidly disappearing, putting the future of Asia's only great ape in peril.
- Orang-utans have a characteristic ape-like shape, shaggy reddish fur and grasping hands and feet.
- It is listed as **Critically Endangered** in the red list of the IUCN.
- They can live up to 50 years in the wild.
- 3 species of orang-utan are:
 1. The Bornean
 2. Sumatran
 3. Tapanuli
- All 3 species differ a little in appearance and behaviour.
- Sumatran orang-utans are also reported to have closer social bonds than their Bornean cousins.



5. c

Punatsangchhu, Three Gorges Dam and Teesta V

- **Punatsangchhu** – It is located in **Bhutan**.
- It is jointly implemented by the Bhutanese government and the government of India.

- **Three Gorges Dam** – It is China's hydropower ecosystem that features smarter, greener and more creative.
- It was the first large-scale water control project on the main artery of the Yangtze River and was a milestone of China's hydropower generation.
- **Teesta V** – It is located in the state of **Sikkim of India**, on the Teesta River.
- Recently it was damaged due to the Landslide.
- It was also damaged in 2023 during a glacial lake outburst flood.
- It is owned and operated by the National Hydroelectric Power Corporation.

26-08-2024 & 25-08-2024

1) With reference to India & Australia, consider the following statements

1. India-Australia Agri Tech Forum (IAATF) is a newly constituted forum by India in New Delhi.
2. Both India and Australia are members of Indo Pacific Economic Forum for Prosperity and Trilateral Supply Chain Resilience Initiative.
3. The first negotiations for a Comprehensive Economic Cooperation Agreement (CECA) were first launched in May 2011.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements with respect to Whistler Wave

1. It is an electromagnetic wave that originate during lightning discharges.
2. They propagate only through the ionosphere.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements with respect to Vaccine-derived Polio

1. It is a rare condition that occurs when the attenuated strain of poliovirus used in the oral polio vaccine mutates and regains the ability to cause paralysis.
2. More than 90% of vaccine-derived poliovirus outbreaks are due to the type 2 virus present in oral polio vaccines.
3. Vaccine-associated paralytic poliomyelitis (VAPP) is a rare event that can occur in people who receive the oral polio vaccine (OPV).

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

4) SNA-SPARSH is a cash management initiative to ensure real-time quick transfers through integration of which of the following?

1. Public Financial Management System (PFMS) of Union.
2. Integrated Financial Management and Information System of states.
3. e-kuber platform of Reserve Bank of India (RBI).

Select the correct answer using the code given below:

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

5) Consider the following statements with respect to Atacama Salt Flat

1. The lake under the salt flat has one of the largest lithium reserves in the world.
2. It is the biggest salt deposit in the world.
3. It is sinking at a rate of 1 to 2 centimetres per year due to lithium brine extraction.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. b

India-Australia Relationship

10th Round of India-Australia CECA Negotiations was recently held at in Sydney in the areas of Goods, Services, Digital Trade, Government Procurement, Rules of Origin and Agri tech.

- The India-Australia bilateral relationship is underpinned by shared values of a pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement and increasing high level interaction.
- Australia and India upgraded bilateral relationship from 'Strategic Partnership' in 2009 to Comprehensive Strategic Partnership (CSP).
- **Both India and Australia are part of the 14 country Indo Pacific Economic Forum for Prosperity (IPEF) and Trilateral Supply Chain Resilience Initiative (SCRI).**
- Indo Pacific Economic Forum for Prosperity (IPEF) aims to contribute to cooperation, stability and prosperity in the region.
- To know more about IPEF [click here](#) .
- The Supply Chain Resilience Initiative (SCRI) was launched in April 2021 is a trilateral initiative of **Australia-Japan-India**.
- It aims to ensure global supply chains remain resilient to future "black swan" events, such as pandemics and geopolitical tensions.
- **Australia-India Comprehensive Economic Cooperation Agreement (CECA):**
- **Australia and india first launched negotiations for a Comprehensive Economic Cooperation Agreement in May 2011.**
- **India is Australia's 6th largest trading partner** with two-way trade in goods and services valued at USD 46.5 billion in 2022.

- The 10th Round of India-Australia CECA Negotiations was recently held at Sydney in the areas of Goods, Services, Digital Trade, Government Procurement, Rules of Origin and Agri tech.
- **India-Australia Agri Tech Forum (IAATF):**
- India-Australia Agri Tech Forum (IAATF) is a newly **constituted forum by Australia** in New Delhi.
- The forum includes Indian agricultural stakeholders namely industry, research institutions and Government.
- It aids to build on mutually beneficial relationship by exploring opportunities for focused activity around technology transfer and knowledge sharing in agriculture and horticulture sectors.

2. a

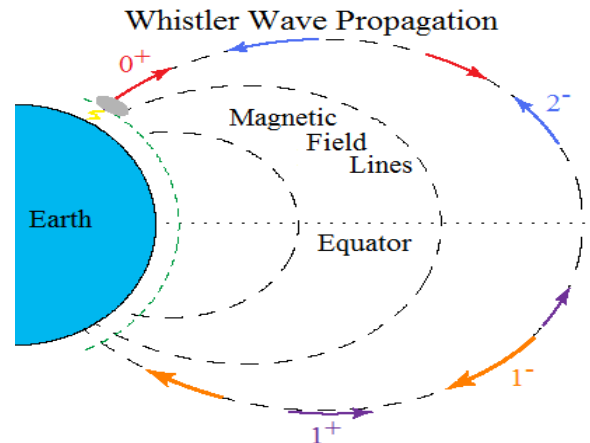
Whistler Wave

Scientists have recently reported discovering a new type of whistler wave produced by a previously unknown wave generation mechanism.

- Whistler Wave are produced when lightning strikes emit electromagnetic energy across a range of frequencies.
- **Propagation path** – Some of this energy can be guided by the Earth's magnetic field lines up into the **ionosphere and magnetosphere**, traveling between the northern and southern hemispheres.
- **Frequency characteristics** – Whistlers typically have frequencies *within the human audible range (20-20,000 Hz)*.
- Higher frequency components travel faster than lower frequency ones.
- **Sound** – When received and converted to audio, they produce a distinctive descending tone or whistle, hence the name "whistler".
- **Dispersion** – The descending tone is due to dispersion - lower frequency waves travel more slowly and arrive later, creating the characteristic falling pitch.
- **Significance** – Whistlers are used to study the properties of the magnetosphere, including electron density and the structure of the plasma pause.
- **New discovery** – Recent research has identified a new type of whistler wave that can be generated when lightning energy is reflected

from the ionosphere into the magnetosphere at low latitudes, contrary to previous understanding.

- **Impact on magnetosphere** – This new mechanism may significantly increase estimates of how much lightning energy enters the magnetosphere, potentially affecting models of radiation belt dynamics.



3. c

Vaccine-derived Polio

A two-year-old child from Meghalaya's West Garo Hills district was recently tested positive for Vaccine-derived Polio, in rare occasion can trigger the disease in children with weak immune systems.

- Vaccine-derived polio is a rare condition that occurs when the weakened (also called attenuated) strain of poliovirus used in the oral polio vaccine mutates and regains the ability to cause paralysis.
- The oral polio vaccine (OPV) contains a live, attenuated virus that is used for immunisation against the disease.
- This weakened virus triggers an immune response when administered, thus protecting people from the disease.
- The *attenuated virus replicates in the intestines for a limited period* and is excreted in the stool.
- In rare cases, the virus can mutate enough to cause the disease again, and circulate in areas where either immunisation is low, or where immunocompromised persons reside, or regions with poor sanitation and hygiene.
- This is how vaccine-derived poliovirus (VDPV) spreads.
- According to the World Health Organization (WHO), **the virus is classified as "circulating" (cVDPV2)**.

- If it is detected in at least two different sources and at least two months apart, that are genetically linked, showing evidence of transmission in the community.
- **More than 90% of vaccine-derived poliovirus outbreaks are due to the type 2 virus present in oral polio vaccines.**
- **Vaccine-associated _____ paralytic poliomyelitis (VAPP) is a rare adverse event that can occur in people who receive the oral polio vaccine (OPV).**
- It particularly affects immune-deficient individuals.
- **Types of polioviruses** – The 3 types of the poliovirus are:
 1. Wild poliovirus type 1 (WPV1)
 2. Wild poliovirus type 2 (WPV2)
 3. Wild poliovirus type 3 (WPV3)
- Symptomatically, all these strains are identical.
- **Jonas Salk** – The first successful polio vaccine for poliovirus was developed by him.
- Inactivated Polio Vaccine (IPV) uses formaldehyde-inactivated virus.
- It induces systemic immunity when injected into muscles.

4. d

SNA-SPARSH

- SNA-SPARSH aims to ensure real-time quick transfers through the integration of:
 1. Public Financial Management System (PFMS) of Union.
 2. Integrated Financial Management and Information System of states.
 3. e-kuber platform of Reserve Bank of India (RBI).
- SNA-SPARSH has been developed under Government Integrated Financial Management Information System (GIFMIS) on the PFMS platform.
- It is a major cash management initiative for Centrally Sponsored schemes introduced as an alternative fund flow mechanism for CSS funds.
- **E-Kuber** – Is the Core Banking Solution (CBS) platform of Reserve Bank of India's (RBI).

- The members of the electronic platform include:
 - Commercial banks, scheduled UCBs, Primary Dealers, insurance companies and
 - Provident funds, who maintain funds account (current account) and securities accounts (Subsidiary General Ledger (SGL) account) with RBI.
- All members of E-Kuber can place their bids in the auction through this electronic platform.



SINGLE NODAL ACCOUNT - SNA-SPARSH

- > SNA SPARSH has been developed under GIFMIS on the PFMS platform to facilitate 'Just-in-time' releases under Centrally Sponsored Schemes and is currently being piloted.
- > Aims to achieve 'Just-in-time' fund flow from Centre and State Consolidated Funds through an integrated network of State IFMIS and e-kuber of RBI.
- > Facilitates more effective cash management.

KEY FEATURES:

- > The Union Government's share in fund release based only on incurred actual expenditure followed by a claim against the expenditure.
- > State's account to be pre-funded with Union Government's share before making the payment to the end beneficiary.

5. b

Atacama Salt Flat

According to a new study, Chile's Atacama salt flat is sinking at a rate of 1 to 2 centimetres per year due to lithium brine extraction.

- Atacama Salt Flat is the biggest salt deposit in Chile.
- It has a rough white surface below which there is a large Salt Lake.
- The lake under the salt flat has one of the largest lithium reserves in the world.
- **The world's largest salt deposit is situated at Sifto Salt Mine in Goderich, Ontario, Canada.**
- This lithium mineral is highly used in the technology industry and it is exploited in the southern area of the flat.
- This salt layer has holes which have become small lagoons which are home several quatic birds, such as flamingoes, red-gartered coots, and guallatas.
- There are also fauna species like the Chilean and the Andean Flamingo, Puna Plover, Hudson Mohawk, Andean Seagull, Austral

Negrito, Burrowing Owl, and some types of Swallows.

- The surroundings of the salt flat also have many attractions.
- On the North and West side there is the Cordillera de la Sal (Salt Mountain Range), a chain of hills within the shape of dinosaurs located by the route connecting Calama and San Pedro de Atacama.
- Atacama salt flat is sinking at a rate of 1 to 2 centimetres per year due to lithium brine extraction.
- **Lithium** is also known as “white gold”, is one of the most sought-after metals on Earth.
- It is used in rechargeable batteries, which power not only laptops and mobile phones but also electric vehicles, a crucial part of the world’s plan to tackle climate change.
- **Impacts of lithium extraction on environment:**
- The **brine evaporation method** used to produce lithium requires massive quantities of fresh water, which is already scarce, especially in the Atacama Desert.
- Chemicals such as sulphuric acid and sodium hydroxide that are used for lithium extraction contaminate soil and water, poisoning ecosystems and endangering species.
- It has led to a decline in the number of flamingos in the area due to a drop in water levels in the Atacama, fewer flamingos are reproducing.



27-08-2024

1) Tomb of the Unknown Soldier, sometimes seen in the news recently, is situated in?

- a. India
- b. Poland
- c. North Korea
- d. Afghanistan

2) Consider the following statements with respect to Rail Force One

1. It aims to integrate stations with nearby cities and improve station structures to make stations more accessible to people with disabilities.
2. It aims to provide insurance to all rail passengers in India.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements with respect to Van Allen Belts

1. It is a two belts radiation formed by the high energy radiation particles trapped by the earth’s magnetosphere.
2. The inner belt is made up of high-energy particles that originate from the Sun and the outer belt results from interactions of cosmic rays with Earth’s atmosphere.
3. The ‘Artemis I mission’ was a significant initiative of NASA to understand the impacts to life beyond the Van Allen Belts.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

4) MARXAN, sometimes seen in the news recently, is associated with?

- A marine monitoring and surveillance robot developed by the National Institute of Oceanography (NIO).
- First mission by a private space agency to probe the far side of the moon.
- Platform designed to map and inform conservation decisions around the world.
- A new cryptocurrency backed by China to support steel trade.

- Prime Minister Narendra Modi's tribute to the tomb underscores the deep respect and solidarity shared between India and Poland.
- To know more about India-Poland Bilateral Relationship [click here](#).
- The countries that have honoured their fallen soldiers by building Tomb of the Unknown Soldier include:
 - Arlington National Cemetery in Virginia, **United States**.
 - National War Memorial in Ottawa, Canada.
 - Hall of Memory, Australia.
 - Monument to the Unknown Hero on Avala Mountain, Serbia.
 - Libingan ng mga Bayani, Philippines and
 - Chile, Ukraine, Britain, Italy and Greece.

5) Consider the following Agreements:

- Logistics Exchange Memorandum of Agreement
- Basic Exchange and Cooperation Agreement
- Asia-Pacific Trade Agreement
- Memorandum of Intent for Defence Innovation Cooperation
- Cultural Property Agreement

Which of the above mentioned agreements are signed between India and United States?

- Only two
- Only three
- Only four
- All five

2. d

Rail Force One

Prime Minister Narendra Modi recently arrived in Ukraine's capital Kyiv from neighbouring Poland by Rail Force One.

- Rail Force One is a train that is run by the state-owned Ukrainian Railways or Ukrzaliznytsia**, is painted blue and yellow, the colours of Ukraine's flag.
- The train has several luxury compartments and was previously used to ferry wealthy tourists to the peninsula on the Black Sea.
- The train's 10-hour, begins at Przemysl G?owny station in Poland, located around 400 km southeast of Warsaw, close to the country's border with Ukraine, and ends at Kyiv.
- The first foreign dignitaries to travel to Kyiv by the train were the prime ministers of Poland, Slovenia and the Czech Republic, who visited in 2022.
- This train represents 'Iron diplomacy' to refer to the world leaders' train trips.
- According to a CNN report, *Ukrzaliznytsia is the 6th largest railway passenger transporter in the world and 7th for freight.*

3. b

Van Allen Belts

Answers

1. b

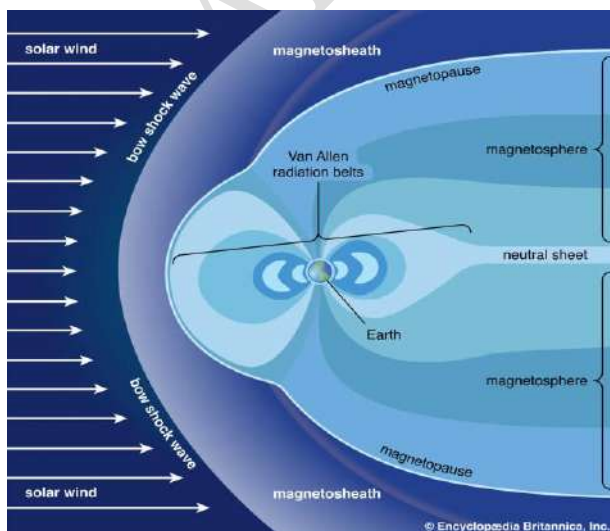
Tomb of the Unknown Soldier

Recently Prime Minister Narendra Modi paid tribute at the Tomb of the Unknown Soldier in Warsaw.

- The Tomb of the Unknown Soldier is a monument dedicated to the memory of Polish soldiers who gave their lives in service to their country.
- It is **located at Pi?sudski Square, Warsaw of Poland** and is a significant symbol of national remembrance and honour in Poland.
- The idea of building the Tomb of the Unknown Soldier in Warsaw was launched in 1923.
- It is a place of honour and respect.

SpaceX's Polaris Dawn mission will be the first non-government mission to perform a spacewalk in the hazardous Van Allen Belts.

- The Van Allen Belts consist of charged particles locked in place by Earth's magnetosphere, which includes its magnetic field.
- They were discovered by American physicist James Van Allen in 1958.
- It is two belts radiation namely inner belt and outer belt and **situated beyond the beyond low-Earth orbit.**
- **The outer belt is made up of billions of high-energy particles that originate from the Sun and the inner belt results from interactions of cosmic rays with Earth's atmosphere.**
- The Van Allen Belts range from about 680 kilometres above Earth's surface to what some estimates suggest is about 40,000 kilometres from the surface of the planet.
- And there's a gap between the first and second belt.
- The inner "proton" zone is centred at about 3,000 kilometres from Earth's surface and the outer "electron" zone is centred about 15-20,000 kilometres from Earth's surface.
- **The Artemis I mission – An initiative by NASA to understand the impacts to life beyond the Van Allen Belts by flying model organisms around the Moon and back.**
- This research could help identify which crops to grow on the Moon, alternative sources of fuel.
- It also aids to ensure crew health during long periods of exposure to the harsh conditions of space beyond the protective layers of the Van Allen Belts.



4. c

MARXAN

A recent study using MARXAN have found that the population of Sunda clouded leopards have reduced in the Borneo's wildlife of Indonesia, Malaysia and Brunei.

- Marxan is a planning platform designed to map and inform conservation decisions around the world.
- It is the **world's first cloud-hosted, free and open-source spatial conservation platform.**
- It is developed by the **Nature Conservancy (TNC) and Microsoft** in collaboration with European Commission's Joint Research Centre and the University of Queensland.
- It is a flagship application of the Planetary Computer, a Microsoft's comprehensive compendium of international ecosystem data.
- Marxan uses mathematics, economics and ecology to analyse spatial data and identify cost-efficient priority areas for conservation action.
- It became the world's leading decision-support tool for conservation, assisting governments, scientists and nongovernmental organizations in land and seascape planning.
- Maps of the distribution of biodiversity, human activities, traditional land uses and socio-economic data can be brought into a common collaborative and shared workspace.
- The **Nature Conservancy** is a global environmental non-profit working to create a world where people and nature can thrive.

5. c

Agreements between USA and India

India and the US have recently signed a Security of Supply Arrangement (SOSA) and Memorandum of Agreement regarding the Assignment of Liaison Officers, the latest in a series of bilateral military agreements.

- India and United States enjoy a comprehensive global strategic partnership covering almost all areas of human endeavour.
- The partnership is driven by shared democratic values, convergence of interests on a range of issues, and vibrant people-to-people contacts.

- **USA is India's largest trading partner** with bilateral trade in goods and services crossing USD 191 billion in 2022.
- Important **defence agreements** between India and USA are:
 - Security of Supply Arrangement (SOSA) and Reciprocal Defence Procurement (RDP) Agreement,
 - General Security of Military Information Agreement (GSOMIA),
 - Logistics Exchange Memorandum of Agreement (2016),
 - Communications, Compatibility and Security Agreement (2018),
 - Industrial Security Annex (ISA) to the GSOMIA (2019),
 - Basic Exchange and Cooperation Agreement (2020) and
 - Memorandum of Intent for Defence Innovation Cooperation (2018).
- The **India-US Defense Acceleration Ecosystem (INDUS X)** is a network of universities, incubators, corporates, think tanks, and private investment stakeholders was launched in June 2023.
- Other agreements between India and United States include:
 - 123 Agreement (Agreement for Co-operation between two concerning Peaceful Uses of Nuclear Energy),
 - **Cultural Property Agreement**,
 - Defence Trade and Technology Initiative (DTTI), 2012 to promote industrial cooperation and defence trade between the two countries and
 - Migration and mobility agreement (2020)
 - To facilitate the mobility of workers, students, academics, researchers, business people, and artists, based on the needs of each country's labour markets.
- Important **bilateral exercises** between India and United States include:
 - Yudh Abhyas (Army), Vajra Prahar (Special Forces), Malabar (Navy), Cope India (Air Force) and Tiger Triumph (tri-services).

- Red Flag, RIMPAC, CUTLASS Express, Sea Dragon and Milan are some multilateral exercises in which the two countries participate.

- **Asia-Pacific Trade Agreement (APTA)** – Is a preferential regional trade agreement formerly known as the **Bangkok Agreement**.
- It aims to promote economic development of its members through the adoption of mutually beneficial trade liberalization to regional trade expansion and economic cooperation.
- **United States is not a member of it** and members include Japan, China, Singapore, Philippines, **India** and Indonesia.

28-08-2024

1) Consider the following statements with respect to National Human Rights Commission (NHRC)

1. It is a statutory multi-member body consisting of a chairperson and five members.
2. It is in conformity with the Paris Principles, mandated by the General Assembly of the United Nations.
3. It has no power to punish the violators of human rights nor award any relief including monetary relief to the victim.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements with respect to Anubhav Awards

1. It recognizes the contribution made by retired officials to nation building while working in Government.
2. Anubhav Portal was launched by the Department of Pension & Pensioners' Welfare (DoPPW).
3. Each awardee will be given a cash award, a medal and a certificate.

How many of the statements given above are correct?

- a. Only one
- b. Only two

- c. All three
- d. None of the above

3) Consider the following statements with respect to International Buddhist Confederation (IBC)

- 1. It is a Buddhist umbrella body with its base in New Delhi that serves as a common platform for Buddhists worldwide.
- 2. Asian Buddhist Summit is an initiative of it.
- 3. Buddhaghosa introduced Tantric Buddhism to Tibet.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

4) Consider the following statements with respect to Home Management and Care Givers Sector Skill Council

- 1. It serves as an apex body supporting the government's initiative to skill 400 million workers in informal sector.
- 2. It is a not for Profit company registered under the Companies Act, 2013.
- 3. It works under the aegis of Ministry of Social Justice and Empowerment.

How many of the statements given above are **incorrect**?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

5) Consider the following statements with respect to Horseshoe Crabs

- 1. They are one of oldest living creatures on the earth and a valuable species medicinally.
- 2. In India, it can be found all along the coast of India.

- 3. They are Schedule 1 species under the Wildlife Protection Act, 1972.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answers

1. c

National Human Rights Commission (NHRC)

The National Human Rights Commission (NHRC) has recently announced the results of its online human rights photography competition, 2024 organized in collaboration with MyGov.

- The National Human Rights Commission is a statutory that was established in 1993 under a legislation enacted by the Parliament, namely, the Protection of Human Rights Act, 19931.
- The commission is the watchdog of human rights in the country.
- It is in **conformity with the Paris Principles**, mandated by the General Assembly of the United Nations.
- The objectives of the commission include:
 - To strengthen the institutional arrangements through which human rights issues could be addressed in their entirety in a more focussed manner,
 - To look into allegations of excesses, independently of the government, in a manner that would underline the government's commitment to protect human rights and
 - To complement and strengthen the efforts that have already been made in this direction.
- **Composition of the Commission** – The commission is a multi-member body consisting of a chairperson and five members.
- *The chairperson should be a retired chief justice of India or a judge of the Supreme Court.*
- The members should be a serving or retired judge of the Supreme Court.

- Three persons (out of which at least one should be a woman) having knowledge or practical experience with respect to human rights.
- In addition to these full-time members, the commission also has
- **7 ex-officio members** that include the chairpersons of:
 1. National Commission for Minorities
 2. National Commission for SCs
 3. National Commission for STs
 4. National Commission for Women
 5. National Commission for BCs
 6. National Commission for Protection of Child Rights
 7. Chief Commissioner for Persons with Disabilities.
- **Appointment** – The chairperson and members are **appointed by the president** on the recommendations of a six-member committee consisting of:
 1. Prime minister as its head
 2. Speaker of the Lok Sabha
 3. Deputy Chairman of the Rajya Sabha
 4. Leaders of the Opposition in both the Houses of Parliament
 5. Central home minister
- A sitting judge of the Supreme Court or a sitting chief justice of a high court can be appointed only after consultation with the chief justice of India.
- **Term of office** – The chairperson and members hold office for a term of three years or until they attain the age of 70 years, whichever is earlier.
- After their tenure, the chairperson and members are **not eligible for further employment** under the Central or a state government.
- **Removal** – The president can remove the chairperson or any member from the office under the following circumstances:
 - If he is adjudged an insolvent,
 - If he engages, during his term of office, in any paid employment outside the duties of his office,
 - If he is unfit to continue in office by reason of infirmity of mind or body,
 - If he is of unsound mind and stand so declared by a competent court and
 - If he is convicted and sentenced to imprisonment for an offence.

- In addition to these, the president can also remove the chairperson or any member on the ground of proved misbehaviour or incapacity.
- However, in these cases, the president has to refer the matter to the Supreme Court for an inquiry.
- **Functions and powers** – Functions of the commission are mainly **recommendatory** in nature.
- To inquire into any violation of human rights or negligence in the prevention of such violation by a public servant.
- The commission is not empowered to inquire into any matter after the expiry of one year from the date on which the act constituting violation of human rights is alleged to have been committed.
- It has **no power to punish the violators of human rights, nor to award any relief including monetary relief to the victim.**
- Notably, its **recommendations are not binding** on the concerned government or authority.

2. c

Anubhav Awards

- Anubhav Awards recognizes the contribution made by retired officials to nation building while working in Government.
- Department of Pension and Pensioners Welfare (DOPPW) had launched an on-line platform entitled 'Anubhav Portal' in March 2015.
- The portal aids for sharing experiences of retiring/retired Central Government employees while working with the Government.
- To participate in the scheme, retiring Central Government employees/pensioners are required to submit their Anubhav write ups, 8 months prior to retirement and up to 1 year after their retirement.
- All the Anubhav write-ups published on the Anubhav Portal.
- The ANUBHAV Awardees share their experiences in a national forum under the ANUBHAV Awardees Speak Webinar Series.
- DOPPW has undertaken an Outreach Campaign to reach out to every pensioner to submit his ANUBHAV experience.

3. b

International Buddhist Confederation (IBC)

International Buddhist Confederation, in collaboration with the Nava Nalanda Mahavihara is all set to organise a two-day International Conference on Guru Padmasambhava at Nalanda, Bihar.

- International Buddhist Confederation (IBC) is a Buddhist umbrella body with its base in New Delhi that serves as a common platform for Buddhists worldwide.
- It is established under the patronage of the supreme Buddhist religious hierarchy.
- IBC currently has a membership comprising more than 320 organisations, both monastic and has presence in 39 countries.
- **Asian Buddhist Summit** – It is an **initiative of International Buddhist Confederation (IBC)**.
- This platform facilitates exchange, enhances mutual comprehension, and tackles current issues confronting the Buddhist community.
- Buddhist leaders, academics, specialists, and practitioners from diverse Asian traditions convene through ABS.
- Through ABS, IBC aims to find a common link between various traditions, practices and beliefs prevalent in the Asian Buddhist circuit.
- This will enable in outlining the scope and potential areas of sustaining the Buddhist narrative in the modern world and future.
- The role of Dhamma, involving the youth will help in strengthening and nurturing a new value-based society.
- **Conference on Guru Padmasambhava** – A two-day International Conference on the Life and Living Legacy of Guru Padmasambhava Conference at Nalanda, Bihar.
- Key themes of the Conference include:
 - Biographical Insights and Mythology.
 - Teachings of Vajrayana Buddha Dhamma and the Tantras.
 - Cultural and Artistic Contributions.
 - Travels and Regional Impact.
 - Legacy and Contemporary Relevance.
- **Guru Padmasambhava** – Also known as Guru Rinpoche Guru Padmasambhava lived in the 8th century in ancient India.

- He is regarded as the second Buddha who is the famous Rishi (or Sant) of the Himalayas.
- **He introduced Tantric Buddhism to Tibet** and who is credited with establishing the first Buddhist monastery there.
- He is credited with the dissemination of Buddha Dhamma across the Himalayan belt.
- He was a member of the Yogacara sect and taught at Nalanda, a centre of Buddhist studies in India.

4. a

Home Management and Care Givers Sector Skill Council

There is a need for policy interventions in the care sector in which Home Management and Care Givers Sector Skill Council could play a crucial role.

- Home Management and Care Givers Sector Skill Council (HMCSSC) is a Section 8 **Not for Profit Company** registered under the Companies Act, 2013.
- It works under the aegis of **Ministry of Skill Development & Entrepreneurship (MSDE)** and **National Skill Development Corporation (NSDC)**.
- HMCSSC is an apex body complementing India's efforts for **skilling 400 million workforce in informal sector**.
- It is also on a mission to **create sustainable livelihood** for one of the largest growing informal sectors.
- It aids to provide workers in informal sector with dignity of labour for their contribution to their own families, households they support and to the GDP.
- It is a **key voice for the Domestic Workers sector** in terms of policy, identifying critical roles and associated skill gaps.
- The council works towards capacity building by bridging skill gaps and upgrading skills of the domestic workers including caregivers, gig workers, wage workers and self-employed as per industry standards.
- DWSSC's Governing Board is uniquely represented by its Academia, Training Organizations & Industry-Business Leaders.
- Gig economy is one of the largest growing informal sectors of work which had never been addressed before and with an estimation of over 40 million workforces (90% being women).

5. a

Horseshoe Crabs

The Zoological Survey of India and the Odisha Forest Department have joined hands to tag horseshoe crabs along the State's coast to understand the population and habitat utilisation for its conservation.

- Horseshoe Crabs are one of oldest living creatures on the earth that have lived millions of years without undergoing any morphological change.
- Horseshoe crabs are an extremely ancient group and are often **referred to as living fossils**.
- The horseshoe crab has a hard exoskeleton and 10 legs, which it uses for walking along the seafloor.
- **Horseshoe Crabs in India** – India is home to **two species** of horseshoe crabs:
 1. Tachypleus gigas
 2. Carinoscorpius rotundicauda (mangrove)
- Both the species are found **only along the north-eastern coast of India, especially along the Odisha and West Bengal coast**.
- **Medical uses** – It is known for its strong immune system.
- The blood of horseshoe crabs is very important for the preparation of **rapid diagnostic reagents**.
- All injectable and medicines are tested with the help of horseshoe crabs.
- **Habitat** – Horseshoe crabs **utilize different habitats** depending on their stage of development.
- The eggs are laid on coastal beaches in late spring and summer.
- After hatching, the juvenile horseshoe crabs can be found offshore on the sandy ocean floor of tidal flats.
- Adult horseshoe crabs feed deeper in the ocean until they return to the beach to spawn.
- Many shorebirds, migratory birds, turtles, and fish use horseshoe crab eggs as an important part of their diet.
- Horseshoe crabs are a keystone species within the Delaware Bay ecosystem.

- **Source of nutrition** – Horseshoe crab eggs are a food source for numerous birds, reptiles and fish.
- **Threats** – To horseshoe crabs include habitat loss and overharvesting.
- Beach developments hinder horseshoe crab breeding.
- **Protection** – Horseshoe crabs are a **Schedule 2 species** under the Wildlife Protection Act, 1972 so it is illegal to trade it.
- The Zoological Survey of India and the Odisha Forest Department have joined hands to **geo-tag horseshoe** to understand the population and habitat utilisation for its conservation and management.

29-08-2024

1) Consider the following statements with respect to Pharma Export Promotion Council of India (PHARMEXCIL)

1. It is the nodal agency to represent Drugs, Pharmaceutical & Healthcare industry in the global arena.
2. The products and services falling under purview of it include active pharmaceutical ingredients (API), nutraceuticals and homeopathy.
3. The International Exhibition for Pharma and Healthcare Exhibition, 2024 was organised by it, in collaboration with Ministry of Health and Family Welfare.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements with respect to Indian Port Association

1. It was constituted in 1966 under Societies Registration Act, 1860.
2. All 13 major ports in the country are member ports of this association.

Which of the above statement(s) is/are correct?

- a. 1 only

- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

3) Consider the following statements with respect to Voluntary Vehicle-Fleet Modernization Program

- 1. It is aimed at creating an eco-system for phasing out of unfit and polluting vehicles through a network of registered vehicle scrapping facilities and automated testing stations.
- 2. It was launched by the Ministry of Road Transport and Highways.

Which of the above statement(s) is/are **incorrect**?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following countries:

- 1. Samoa
- 2. Papua New Guinea
- 3. Palau
- 4. Kiribati
- 5. New Zealand

Which of the above-mentioned countries are members of the Pacific Islands Forum?

- a. Only two
- b. Only three
- c. Only four
- d. All five

5) Consider the following statements:

Statement-I: Fixed-Dose Combination (FDC) Drugs that have more than one active ingredient in medicines that influence the body.

Statement-II: Fixed-Dose Combination (FDC) Drugs increase the number of pills the patient needs to take each day and help improve adherence to the treatment.

Select the correct answer using the codes given below:

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect
- d. Statement-I is incorrect but Statement-II is correct

Answers

1. a

Pharma Export Promotion Council of India (PHARMEXCIL or CAPEXIL)

International Exhibition for Pharma and Healthcare Exhibition 2024 is a three day pharma expo that will offer the domestic industry majors from India that was recently organised by PHARMEXCIL.

- Pharma Export Promotion Council of India (PHARMEXCIL or CAPEXIL) is the **nodal agency** to represent Drugs, Pharmaceutical & Healthcare industry in the global arena.
- It is *mandated to help to its members achieve excellence in exports and facilitate overseas buyers* to find suitable trade partners from the Indian pharma industry.
- PHARMEXCIL **acts as a single contact point for the overseas buyers and investors** by providing list of manufacturers / exporters of the Pharma Products.
- It provide assistance in co-ordinating appointments for the overseas buyers / investors during their visits to India through its offices at Hyderabad, Mumbai and New Delhi.
- **Functions of the council** – Represents Government of India and other agencies in India and abroad to get amicable solutions for the common problems of the Industry.
- To make suggestions to government of India on policy relating to pharma products.
- It is tasked to issue the certificate of origin and Registration cum Membership Certificate.
- It assists its members to get their MAI (Market Access Incentives) claims refunded from Government of India.
- It organizes business meetings in India and abroad and also organize trade delegations abroad.

- The products and services falling under purview of Pharmexcil include:
 - **Active Pharmaceutical Ingredients (API)** and Finished Dosage Forms (FDF),
 - Biologics, Diagnostics, Surgicals and **Nutraceuticals**,
 - Collaborative Research, Contract Manufacturing, Clinical Trials & Consultancy and .Regulatory Services.
 - The products and services such as Herbal/ Ayurveda, Unani, Siddha and **Homeopathy** falls **under the purview of Ministry of Ayush**.
 - **International Exhibition For Pharma And Healthcare Exhibition (IPHEX 2024)** – It is 3 day pharma expo that will offer the domestic industry majors from India and all across the world a great platform to connect and do business.
 - **It was organised by Pharma Export Promotion Council of India (CAPEXIL) and Ministry of Commerce and Industry.**
 - It will provide you with an opportunity to meet new and existing customers actively looking for new suppliers, or looking to assess the current progress of existing projects.
- All 13 Indian Major Ports are the member ports of it. The 13 major ports are:
 - Kolkatta Port Trust
 - Haldia Dock Complex
 - Paradip Port Trust
 - Visakhapatnam Port Trust
 - Chennai Port Trust
 - V.O.Chidambarar Port Trust
 - Cochin Port Trust
 - New Mangalore Port Trust
 - Mormugao Port Trust
 - Mumbai Port Trust
 - Jawaharlal Nehru Port Trust
 - Deendayal Port Trust
 - Kamarajar Port Limited (private port)
 - There are 13 major ports (including Kamarajar Port Limited) and 200 non-major ports (minor ports) in the country.
 - *The Major Ports are under the administrative control of Ministry of Shipping.*
 - The non-major ports are under the jurisdiction of respective State Maritime Boards/ State Government.

2. c

Indian Port Association (IPA)

Recently a Memorandum of Understanding was signed between the Bipartite Wage Negotiation Committee and the Indian Port Association to avert the indefinite strike that was set to disrupt operations across 12 major ports in India.

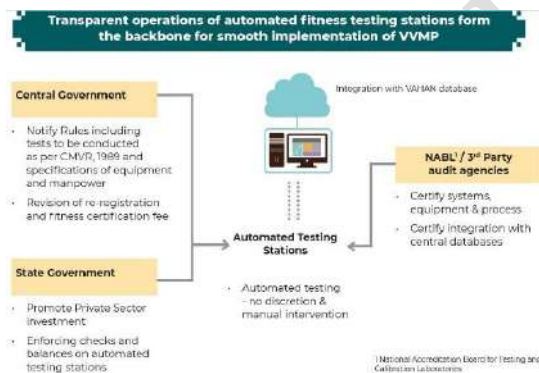
- Indian Ports Association (IPA) was constituted in 1966 under Societies Registration Act, 1860.
- It was constituted primarily with the idea of fostering growth and development of all Major Ports which are under the supervisory control of Ministry of Shipping.
- **Objectives** – To undertake and promote Techno-Economic Studies and Research into matters pertaining to the Planning Organization.
- To offer complete solutions to Port Management and to create a resource of information as a tool for decision making.
- To promote the culture of Uniformity and Standardisation in the port functioning.

3. d

Voluntary Vehicle-Fleet Modernization Program

- Voluntary Vehicle Modernization Program is aimed at creating an eco-system for phasing out of unfit and polluting vehicles.
- It was **launched by the Ministry of Road Transport and Highways**.
- It will create a robust ecosystem for safer roads and structured scrappage sector through a network of registered vehicle scrapping facilities and automated testing stations.
- Presently, there are sixty-plus (60+) RVSFs across 17 States / UTs and seventy-five (75+) ATSS across 12 States / UTs operational in the country with many more in the pipeline.
- **Objectives** – To reduce pollution by scrapping around 1 Cr vehicles without valid fitness and registration.

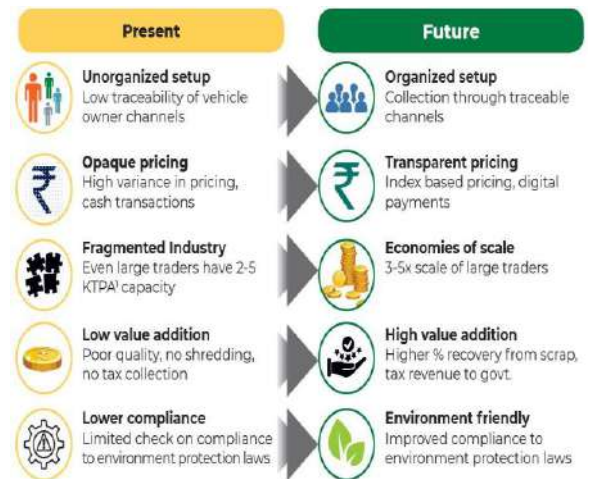
- Improvement of road, passenger and vehicular safety and to improve fuel efficiency and reduce maintenance cost for vehicle owners.
- The sales in the auto sector can be boosted and employment can be created.
- To formalize the currently informal vehicle scrapping industry and Boost availability of low-cost raw materials for automotive, steel and electronics industry.
- Various incentive under the program include:
 - Scrap Value for the old vehicle given by the scrapping centre, approximately 4-6% of ex-showroom price of a new vehicle.
 - Draft rules notified for state governments to offer concession on motor vehicle tax of up to 25% for non-transport vehicles and up to 15% for transport vehicles.
 - Registration fees to be waived off for purchase of new vehicle against the certificate of deposit - draft notification issued.
 - Auto original equipment manufacturer (OEMs) has been advised to provide 5% discount on purchase of new vehicle against the certificate of deposit.



- Criteria for Scrapping of Vehicles at RVSF include:
 - Vehicles which have *not renewed their Certificate of Registration* in accordance with Rule 52 of the CMVR, 1989.
 - Vehicles which have *not been granted a certificate of fitness* in accordance with Section 62 of the Motor Vehicles Act, 1988.
 - Vehicles which have been *damaged due to fire, riot, natural disaster, accident or any calamity*, following

which the registered owner self certifies the same as scrap.

- Vehicles that have been declared obsolete or surplus or beyond economic repair by the Central/State Organizations of the government and have been offered for scrapping.
- Vehicles *bought in auction for scrapping the vehicles* by any agency including RVSF.
- Vehicles which have outlived their utility or application particularly for projects in mining, highways, power, farms, factories, airports, etc. as may be self-certified by the owner.
- Manufacturing rejects, test vehicles, prototype, vehicles damaged during transportation from vehicle OEMs to dealers or unsold/unregistered vehicles, as may be certified by the Vehicle OEM.
- Auctioned, impounded and abandoned vehicles by any Enforcement Agency.
- *Vehicles voluntarily offered to an RVSF for scrapping*, at the discretion of the owner.



4. d

Pacific Islands Forum (PIF)

The annual meeting of the Pacific Islands Forum (PIF) just began recently in Nuku'alofa, the capital of Tonga.

- Pacific Islands Forum is an intergovernmental organisation which consists of 18 member states located in the Pacific region.
- Australia and New Zealand are among the wealthiest and largest countries which are part of the organisation.

- It was formed in the year **1971** and the 18 members are:

Australia	Cook Islands	Federated States of Micronesia,	Fiji	French Polynesia
Kiribati	Nauru	New Caledonia	New Zealand	Niue
Palau	Papua New Guinea	Republic of Marshall Islands	Samoa	Solomon Islands
	Tonga	Tuvalu	Vanuatu	

- The PIF aims to push for economic growth, enhance political governance and security for the region, and strengthen regional cooperation.
- The organisation discusses priority issues at its annual meeting, where decisions made by the member states are reached by consensus.
- The decisions are **implemented by the Pacific Islands Forum Secretariat**.
- PIF members have been pushing to raise funds for climate action.
- The **Pacific Resilience Facility (PRF)**, a regional financing facility established by PIF is currently USD 380 million short of its USD 500 million target, according to a report by Nikkei Asia.
- The Asian country signed security and policing agreements with the Solomon Islands, in particular, setting off alarm bells in Australia and the US.
- This year's PIF meeting features the **forum's largest-ever delegation** from China and a sizable deputation from the US.



5. c

Fixed-Dose Combination (FDC) Drugs

The government has recently banned 156 fixed-dose combination (FDC) drugs, including popular medicines such as Cheston Cold and Foracet, used for cold and fever and pain respectively.

- FDCs are medicines that have more than one active ingredient (chemical compounds) in medicines that have an effect on the body in a single pill, capsule or shot.
- They FDCs are meant for patients with conditions such as tuberculosis and diabetes for which they need to take multiple medicines regularly.
- FDCs **reduce the number of pills** the patient needs to take each day and help improve adherence to the treatment.
- Sometimes, however, an FDC could mean that a patient ends up taking a drug that they may not need.
- Example** – Cheston Cold contains paracetamol for fever, cetirizine for allergy relief and phenylephrine for nasal decongestion.
- So, while this drug will help people who have these symptoms because of allergies, it is not really required for a bacterial infection.
- The FDCs **recently banned by the government of India** are:
 - Several combinations of enzymes used for treatment of gastrointestinal problems,
 - Combinations of anti-allergic medicines such as **levocetirizine** with nasal decongestant, syrups that break down mucus and paracetamol,
 - Combinations used for the treatment of skin conditions, including menthol with aloe vera,
 - Aloe vera with vitamin E in the form of medicated soap,
 - Silver sulfadiazine (used for burns) with an antiseptic agent, aloe extract and vitamin,
 - Calamine lotion with aloe and a natural substance (for skin irritation),

- Combination of a migraine medicine with one to prevent nausea and
- Combination of the drug mefenamic acid that are usually used for menstrual cramps with anti-fibrotic medicine tranexamic acid.
- These “irrational” combinations have been banned because they contain ingredients that either do not work well together or have ingredients that are not needed by patients to be taken together.
- **Reasons for the ban** – Unnecessary consumption of antibiotics can lead to increase in antibiotic resistance.
- To control the price on essential medicines, since companies are known to create FDCs to escape the pricing.

30-08-2024

1) Consider the following statements with respect to Rheumatoid Arthritis (RA)

1. It is a chronic auto-immune disorder that causes pain, swelling and stiffness in the joints.
2. Ayurvedic Whole System (AWS) alleviates the symptoms of RA by inducing a metabolic shift towards normalisation in patients with RA.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

2) Consider the following statements:

Statement-I: Mars does not possess a global magnetic field.

Statement-II: The crustal field effects are much stronger during day-time and remain unaffected by seasons or Sun-Mars distance.

Select the correct answer using the codes given below:

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect

d. Statement-I is incorrect but Statement- II is correct

3) Consider the following statements with respect to Samudra Pratap

1. It is the first indigenously developed pollution control vessel.
2. It features an advanced radar system for oil spill detection and facilities to recover and store various types of oil.

Which of the above statement(s) is/are **incorrect**?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

4) Consider the following statements with respect to Retired Sportsperson Empowerment Training (RESET) Programme

1. It will support retired athletes who have played for the country by empowering them with the necessary knowledge and skills.
2. Only medal winners in the international events are eligible to participate in this programme.
3. The pilot phase of the programme will be implemented by the Sports Authority of India (SAI).

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

5) Consider the following statements with respect to Global System for Mobile Communications Association (GSMA)

1. It is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change.
2. ‘Farm-Advice’ is a national hotline for agriculture is an initiative of it.

3. Bharat Sanchar Nigam Limited is a member of it.

How many of the statements given above are correct?

- a. Only one
b. Only two
c. All three
d. None of the above

Answers

1. c

Rheumatoid Arthritis (RA)

A new scientific study has revealed the significant effectiveness of the Ayurvedic Whole System (AWS) in the management of Rheumatoid Arthritis, a chronic autoimmune disorder affecting millions worldwide.

- Rheumatoid Arthritis (RA) is a chronic autoimmune disorder causes joint inflammation and pain.
- It happens when the immune system doesn't work properly and attacks the lining of the joints, called the synovium.
- The disease commonly affects the hands, knees or ankles and usually the same joint on both sides of the body, such as both hands and both knees.
- But sometimes RA causes problems in other parts of the body as well, such as the eyes, heart and circulatory system and/or the lungs.
- For unknown reasons, more women than men get RA, and it usually develops in middle age.
- Having a family member with RA increases the odds of developing RA.
- **Ayurvedic Whole System (AWS)** – Is effective in **alleviating RA symptoms and inducing a metabolic shift towards normalization in patients.**
- The research was conducted by senior researchers from reputable institutions in India.
- Reduction in Disease Activity Score-28 Erythrocyte Sedimentation Rate (DAS-28 ESR) and decrease in the number of swollen and tender joints.
- Metabolic profiles of RA patients showed improvements after AWS treatment, with levels

of certain metabolites shifting towards those observed in healthy individuals.

- This is reportedly the first study to clearly demonstrate the clinical efficacy of AWS in managing RA.
- The researchers emphasize the need for further studies to confirm these results and understand the mechanisms of AWS's therapeutic effects.
- **Ama Activity Measure (AAM) Score**, which assesses the presence of toxins in the body, also showed a significant reduction post-intervention.

2. b

Mars Crustal Magnetic Field

Recently scientists from the Indian Institute of Geomagnetism (IIG) found that the crustal field effects in moon are much stronger during day-time.

- Mars does not have a global magnetic field, but it does have small-scale crustal magnetic fields.
- The crustal fields are located poleward of 30°S latitude and within a longitude region of 120° E to 240° E.
- Crustal field effects on Mars are much stronger during daytime but almost non-existent during night-time.
- **Daytime crustal field effects remain unaffected by seasons or Sun-Mars distance.**
- During daytime, crustal magnetic fields strongly control the ionosphere in the southern hemisphere.
- The control is generally much stronger compared to the northern hemisphere.
- At night, crustal magnetic fields lose control over the ionosphere, eliminating hemispheric asymmetry.
- Daytime control of crustal magnetic fields over the ionosphere is independent of Sun-Mars distance (seasons).
- **Significance** – Important for understanding magnetic shielding on Mars.
- Has implications for future robotic and human missions to Mars.
- Contributes to knowledge that can help future space missions.

3. d

Samudra Pratap

- Samudra Pratap is the **first indigenously developed Pollution Control Vessel** of Indian Coast Guard (ICG).
- The Ship has been built by **Goa Shipyard Limited (GSL)** for the ICG.
- The vessel will help to check the oil spillage in the country's sea coast.
- It features *side-sweeping arms to contain oil spills* while in motion, **an advanced radar system for oil spill detection**, and facilities to *recover and store various types of oil*.
- The vessel is a crucial addition to the Indian Coast Guard's fleet, enhancing its capacity to manage oil spill response operations in India's Exclusive Economic Zone (EEZ) and beyond.
- This launch is a proud moment for India, showcasing its growing prowess in indigenous shipbuilding and maritime environmental protection.

4. a

Retired Sportsperson Empowerment Training (RESET) Programme

RESET Programme was recently launched by the Minister of Youth Affairs & Sports to support retired athletes on their career development journey by empowering them with the necessary knowledge and skills.

- RESET Programme is aimed at empowering our retired sportspersons who have played for the country and brought immense laurels to the nation.
- The programme will support retired athletes on their career development journey by empowering them with the necessary knowledge and skills and making them more employable.
- The programme will be offered in **hybrid mode** consisting of self-paced learning through a dedicated portal, along with on-ground training and internship.
- Internships will be provided in sports organizations, sporting competitions/training camps and leagues.
- Further, placement assistance, guidance for entrepreneurial ventures and so on will be provided upon successful completion of the course.
- **Eligibility** – The programme is open to all those athletes in the **20-50 age bracket**.

- **Not just medal winners, athletes participated in international events** or earned national or state-level distinctions are eligible for the program.
- The events must be recognised the National Sports Federations, Indian Olympic Association, or the Ministry of Youth Affairs and Sports.
- **The pilot phase of the programme will be implemented by Lakshmibai National Institute of Physical Education (LNIPE).**

5. b

Global System for Mobile Communications Association (GSMA)

A Report titled "AI for Africa: Use Cases Delivering Impact - Nigeria Deep Dive" was recently release by the GSMA that highlights the importance of AI in agriculture.

- Global System for Mobile Communications Association (GSMA) is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change.
- It represents mobile operators and organisations across the mobile ecosystem and adjacent industries.
- GSMA delivers for its members across 3 broad pillars:
 1. Connectivity for Good
 2. Industry Solutions
 3. Events
- The **Indian mobile operators** such as **Bharat Sanchar Nigam Limited**, Airtel, Vodafone and Jio are members of it.
- **CROP2CASH** was founded on the 18th of May 2018 with a focus on zero hunger which we aim to achieve through the empowerment of farmers in Nigeria.
- **Farm-Advice, a national hotline for agriculture was recently launched by CROP2CASH.**

31-08-2024

1) Consider the following statements with respect to Hoysala

1. The Hoysalas in Karnataka had almost been destroyed by the military expeditions of the Delhi Sultanate in the first three decades of the 14th century.
2. Harihara and Bukka were in the services of Hoysala before they founded Vijayanagar kingdom.
3. The vesara style of Architecture reached its culmination only under the Rashtrakutas and the Hoysalas.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

2) Consider the following statements:

1. Around 60% of the methane that makes it into the atmosphere comes from human activities and Methane can be released from non-human sources like wetlands.
2. Methane is unintentionally released through processes such as venting and gas flaring.
3. Methane Alert and Response System (MARS) is an initiative of the Nature Conservancy.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

3) Consider the following statements with respect to Baobabs

1. These trees can live for thousands of years, with some specimens reaching 2,500 years old.
2. Baobabs have survived erratic climate conditions throughout their long lifespans, including droughts and floods.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2

- d. Neither 1 nor 2

4) Consider the following statements with respect to Cyber Smart Heroes Programme

1. It is a volunteer-driven initiative to help children understand nuances, opportunities, and risks of online platforms.
2. It is a pan-India programme, spearheaded by National Institute of Public Cooperation and Child Development (NIPCCD).

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

5) Consider the following statements with respect to National Glacial Lake Outburst Floods Risk Mitigation Programme (NGRMP)

1. It aims to monitor and mitigate risks from glacial lakes in the Himalayas.
2. The programme is to be implemented by the National Disaster Management Authority (NMDA).

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answers

1. c

Hoysala

- Hoysala dynasty, family that ruled in India from about 1006 to about 1346 ce in the southern Deccan and for a time in the Kaveri (Cauvery) River valley.
- The first kings came from the hills northwest of Dorasamudra (present-day Halebid), which became their capital about 1060.

- Vishnuvardhana won much territory from the tough Kadambas of Hangal, but his weak son Narasimha I lost much of it.
- The Hoysalas in Karnataka had almost been destroyed by the military expeditions of the Delhi Sultanate in the first 3 decades of the 14th century.
- In 1310 the Hoysala ruler Vira Ballala III surrendered all his treasures to the Delhi forces.
- The Vijayanagar dynasty succeeded the Hoysalas.
- Harihara and Bukka, the eldest sons of one Sangama, earlier serving the Hoysala rulers of Karnataka, asserted their independence and laid foundation for a new kingdom in about 1336.
- ***The vesara style of Architecture reached its culmination only under the Rashtrakutas and the Hoysalas.***

2. b

Methane Emissions

- Methane (CH₄), the primary component of natural gas, is responsible for approximately a third of the warming we are experiencing today (IPCC).
- **Sources of Methane** – Methane does sometimes come from non-human sources like wetlands.
- These habitats contain things like permafrost, which is frozen ground that's also filled with carbon from animals and plants that have been dead for hundreds of thousands of years.
- As temperatures rise with global warming, wetland permafrost thaws and it unleashes carbon, previously locked in the ice, in the form of CO₂ and methane.
- Around 60% of the methane that makes it into the atmosphere comes from human activities.
- This source of methane is from agriculture like cows' burps and farts and manure fertilizer and also from decomposing waste in landfills and the energy sector.
- Most energy consumed by humans comes from burning fossil fuels like coal, oil and gas.
- ***Oil and gas are responsible for most energy sector methane emissions.***
- The greenhouse gas pours out when companies produce, transport and store these fossil fuels.

- **Unintentional emission of Methane** – It often escapes into the atmosphere when the equipment is rusty or damaged or even has something as simple as a loose screw.
- **Gas flaring** is the burning of the natural gas associated with oil extraction.
- Flaring turns methane into CO₂ that then goes into the atmosphere, but raw methane can still escape during the process.
- Flaring can only happen if it's not technically possible to reinject the natural gas into the ground on-site or transport it somewhere else.
- **Venting** is direct release of small amounts of natural gas into the atmosphere.
- Venting is only allowed if there is a safety emergency.
- **Venting and Gas flaring are sources of methane emitted unintentionally.**
- Operators flare and vent because it can be expensive to process and transport the relatively small amount of gas that comes out of the ground during oil extraction
- **Ways to reduce emissions** – According to the International Energy Agency, Oil and gas companies could slash their methane emissions by 75% if they spotted and fixed leaks.
- Venting is only allowed if there is a safety emergency.
- **Methane Alert and Response System (MARS)** – Is the first global satellite detection and notification system providing actionable data on very large methane emissions around the world.
- It is an ***initiative of United Nations Environment Programme (UNEP).***

3. c

Baobabs

- Baobab (genus *Adansonia*) is genus of 9 species of deciduous trees of the hibiscus or mallow, family (Malvaceae).
- Six of the species are endemic to Madagascar, two are native to mainland Africa and the Arabian Peninsula, and one is native to north-western Australia.
- They have unusual barrel-like trunks and are known for their extraordinary longevity and ethnobotanical importance.

- These trees can live for thousands of years, with some specimens reaching 2,500 years old.
 - Baobabs have survived erratic climate conditions throughout their long lifespans, including droughts and floods.
 - Your observations suggest that most baobab populations in Africa are healthy and stable, with very low mortality rates among adult trees.
 - Baobabs provide numerous resources, including food, fiber, and medicine.
 - They also support local economies through the baobab fruit trade.
 - Zimbabwe alone is estimated to have up to 4 million baobab trees.
 - **Threats** – The main threat to adult baobabs is elephants, which can cause significant damage when their populations are too high.
 - Young baobabs face browsing pressure from domestic animals and wildlife.
 - Excess water, particularly during leafless periods, can be more dangerous than drought.
 - Resilience to climate change: Unlike many other species, baobabs appear well-adapted to changes in temperature and rainfall, as evidenced by their wide geographic distribution and extreme longevity.
- **Impact of the Program** – 20% increase in children recognizing cybercrime and cyberbullying.
 - 12% increase in children identifying strong passwords and 13% increase in children identifying cyber harassment.
 - **Implementation** – Covered 274 schools across 12 states and involved over 1,200 trained CRY volunteers.
 - Collaboration with Nyaaya, SIMHA, and Cyber Security Centre of Excellence.
 - **Methodology used** – Interactive sessions with animated videos and smart modules.
 - Pre- and post-program assessments to measure impact.
 - **Significance** – Addresses growing concerns about online child safety.
 - Demonstrates the effectiveness of collaborative, volunteer-driven initiatives in education.

5. c

National Glacial Lake Outburst Floods Risk Mitigation Programme (NGRMP)

The NGRMP was recently approved by the Union government for risk mitigation, including monitoring and early warning systems.

- National Glacial Lake Outburst Floods Risk Mitigation Programme (NGRMP) aims to monitor and mitigate risks from glacial lakes in the Himalayas.
- The programme is to be implemented by the National Disaster Management Authority (NMDA) in Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh.
- 189 "high-risk" glacial lakes identified for mitigation measures and nearly 7,500 glacial lakes in the Himalayan Mountain ranges in India.
- 902 glacial lakes and water bodies currently monitored via satellite by Central Water Commission (CWC).
- **Proposed Measures** – To constitute teams to investigate high-risk lakes.
- Attempt "lake-lowering measures" to buffer against overflow.
- Mitigate potential damage in downstream States.

4. a

Cyber Smart Heroes Programme

- Cyber Smart Heroes Programme is a Volunteer-driven program to educate school children about cyber safety for 9 months, reaching 58,838 school-goers from 12 states.
- It is a **pan-India initiative by CRY (Child Rights and You)**.
- **Key Objectives** – To help children understand nuances, opportunities, and risks of online platforms.
- Make children 'digital-ready' to navigate cyberspace safely.
- **Need for the program** – Recently NCRB report highlighted that 1,823 cases of children as cybercrime victims in 2022 (32% increase from 2021).
- **CRY and CNLU study** – 33.2% of parents reported children encountering online risks.

- Conduct detailed technical hazard assessments and install automated weather and water level monitoring stations (AWWS).
- Set up early warning systems (EWS) at lakes and in downstream areas.
- **Challenges** – Lakes located in inhospitable terrain.
- Limited access window (July to September) for expeditions.
- Multiple visits often necessary for implementing lake-lowering measures.

SHANKAR IAS ACADEMY