

MANTHAN

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Manu Bhaker to receive Dhyan Chand Khel Ratna, Gukesh among four recipients

- India's twin-Olympic medallist Manu Bhaker and chess prodigy D Gukesh have been named among the four recipients of the prestigious Major Dhyan Chand Khel Ratna Award.
- India's men's hockey captain Harmanpreet Singh and para-athlete Praveen Kumar are the other two recipients of this year's Khel Ratna Award, which is the country's highest sporting honour.
- Bhaker made history at the Paris Olympics becoming independent India's first athlete to win two medals in a single edition, securing bronze in both the 10m air pistol individual and 10m air pistol mixed team events.
- In the same Games, Harmanpreet led the Indian men's hockey team to its second consecutive bronze medal, further cementing his legacy in Indian sports.
- Meanwhile, the 18-year-old chess prodigy Gukesh made headlines by becoming the youngest-ever World Champion, while also contributing to India's historic gold medal win at the Chess Olympiad last year.
- The fourth recipient, Praveen Kumar, was honoured for his extraordinary performance in the Paris Paralympics, where he clinched the T64 high-jump title. The T64 classification is for athletes with one or both legs missing below the knee, who rely on a prosthetic leg for running.
- The awardees will receive their accolades from the President of India during a special ceremony at Rashtrapati Bhavan on January 17, 2025.

Major Dhyan Chand Khel Ratna Award

- The Major Dhyan Chand Khel Ratna Award, previously known as the Rajiv Gandhi Khel Ratna Award, is the highest sporting honor in India.
- It was renamed in 2021 to honor the legendary hockey player Major Dhyan Chand, who is widely regarded as one of the greatest hockey players in history.
- To recognize and reward outstanding performances in sports and games at the international level.

Eligibility:

• Open to athletes across all sports disciplines recognized by the Ministry of Youth Affairs and Sports.

Criteria:

- Performance at international competitions such as the Olympics, World Championships, and other prestigious tournaments.
- Leadership, consistency, and contribution to the growth of the sport.

Award Components:

- A medal.
- A certificate.
- A cash prize of ₹25 lakh (as of recent updates).

Selection Process:

• Nominations are invited from various national sports federations, Indian Olympic Association (IOA), Sports Authority of India (SAI), and others.

• The selection is done by a committee appointed by the Ministry of Youth Affairs and Sports.

Significance of the Name:

- Major Dhyan Chand led India to three Olympic gold medals in hockey (1928, 1932, and 1936) and is remembered for his exceptional skills, earning him the title "The Wizard of Hockey."
- The Arjuna Awards are one of the most prestigious sports honors in India. They are given annually by the Ministry of Youth Affairs and Sports to recognize outstanding achievements in the field of sports.

Arjuna Award

- The Arjuna Award is given to athletes for their exceptional performance in their respective sports over the past four years at the national and international levels.
- It is named after Arjuna, the legendary archer from the Indian epic Mahabharata, symbolizing excellence in sports and the virtues of discipline, dedication, and hard work.

Criteria for Selection

- The award is presented to athletes who have shown exceptional performance and made notable contributions to their respective sports.
- The selection is based on achievements in the past four years and the overall impact of the athlete on their sport, with a strong focus on their consistent performance in international competitions.

Award Components

- Medal: A bronze statuette of Arjuna.
- **Certificate:** A scroll with the details of the award.
- **Cash Prize:** ₹15 lakh (as of 2023).

Eligibility

- Athletes who have represented India at the international level and demonstrated exceptional skill and excellence in their sport.
- The award is not restricted to any particular sport, and it spans a wide range of disciplines including cricket, football, athletics, wrestling, badminton, boxing, and more.

History

- The Arjuna Award was instituted in 1961 by the Indian Government.
- It was first awarded to K. D. Jadhav (wrestling), who won a bronze medal in the 1952 Helsinki Olympics.

Recent Updates

- The Arjuna Award is typically announced on National Sports Day (August 29) in India, which commemorates the birth anniversary of Major Dhyan Chand, India's greatest hockey player.
- Over time, the award has evolved, and recently, it has been given in conjunction with the Rajiv Gandhi Khel Ratna (now known as the Major Dhyan Chand Khel Ratna Award), which is the highest sporting honor in India.

QUESTIONS

Fill in the Blank:

1. The prestigious Major Dhyan Chand Khel Ratna Award is India's ______ sporting honor.

- 2. The Major Dhyan Chand Khel Ratna Award was renamed in ______ to honor the legendary hockey player Major Dhyan Chand.
- **3.** Manu Bhaker made history at the _____ Olympics, becoming independent India's first athlete to win two medals in a single edition.
- 4. _____ led the Indian men's hockey team to its second consecutive bronze medal at the Paris Olympics.
- 5. D Gukesh became the ______ ever World Champion in chess at the age of 18.
- 6. Praveen Kumar won the T64 high-jump title at the _____ Paralympics.
- 7. The Major Dhyan Chand Khel Ratna Award was previously known as the _____ Khel Ratna Award.
- The Major Dhyan Chand Khel Ratna Award consists of a medal, certificate, and a cash prize of ₹_____ lakh.
- 9. The Arjuna Award is named after _____, the legendary archer from the Indian epic _____.
- **10.** The Arjuna Award was instituted by the Indian Government in _____.

2. Lighthouse Tousrism in India

- With a coastline spanning over 7,500 kilometres, India is home to 204 lighthouses that silently guard its rich maritime heritage.
- Traditionally serving as navigational aids for seafarers, these iconic structures are now being reimagined as tourism destinations under the Government of India's developmental vision.
- This initiative aims to preserve the historical and architectural significance of lighthouses and unlock their potential for economic growth and community empowerment.

What is Lighthouse Tourism?

- Lighthouse tourism involves transforming lighthouses and their surrounding areas into vibrant tourist attractions.
- These structures, often located in scenic coastal or island settings, offer visitors a unique combination of natural beauty, maritime history, and recreational opportunities.
- The Central Government is actively promoting lighthouse tourism as a part of its broader Maritime India Vision (MIV) 2030 and Amrit Kaal vision 2047 to enhance India's cultural heritage and maritime legacy.
- By developing these sites, the government seeks to enhance India's tourism offerings while creating employment opportunities and fostering local economic growth.

The Potential of Lighthouse Tourism in India

- India's lighthouses are not merely functional structures but repositories of history and culture.
- Strategic Locations: Many lighthouses are situated in breathtaking locations along India's coastline or remote islands, offering panoramic sea views.
- **Cultural Importance:** Some lighthouses date back centuries and are near UNESCO World Heritage Sites like Mahabalipuram in Tamil Nadu or other prominent cultural landmarks.

- Adventure and Leisure: These sites can host activities such as trekking, boating, and water sports, appealing to adventure seekers.
- **Economic Impact:** Developing lighthouse tourism can generate hospitality, transportation, and handicraft employment while boosting local economies.
- Recognising this potential, the government has identified lighthouse tourism as a priority area for development.
- The initiative aligns with the broader objectives of enhancing India's global appeal as a travel destination while promoting sustainable tourism practices.
- In February 2024, PM Narendra Modi dedicated 75 Lighthouses with tourist facilities in 10 states & UTs.
- With an investment of ₹60 crore, these 75 iconic lighthouses have been developed. Each lighthouse has become a beacon of both heritage and recreation, with modern amenities such as museums, amphitheaters, children's parks, and more.
- In the fiscal year 2023-24 alone, these 75 dedicated lighthouses attracted an impressive 16 lakh visitors, a rise of more than 400% footfall of tourists from 4 lakhs in 2014.
- As of September 2024, the current fiscal year 2024-25 has already welcomed more than 10 lakh visitors.
- More than 500,000 tourists visited the Lighthouses between April and June, 2024, validating the vision of transforming these iconic maritime structures into vibrant tourists hotspots as envisioned by PM Narendra Modi.
- These developments have also resulted in job creation, with 150 direct and 500 indirect employment opportunities emerging in nearby hotels, restaurants, tour operators, transportation services, and local shops and artisans.

Steps Taken By The Indian Government To Boost Lighthouse Tourism

1. Indian Lighthouse Festival Series

- The 1st Indian Lighthouse Festival, "Bharatiya Prakash Stambh Utsav", was inaugurated on 23rd September, 2023 by the Union Minister of Ports, Shipping & Waterways, Shri Sarbananda Sonowal and Goa Chief Minister, Shri Pramod Sawant at the historic Fort Aguada in Goa.
- It has been held annually since then, serving as a key platform to celebrate and promote lighthouse tourism.
- The 2nd Indian Lighthouse Festival was held in Odisha. Union Minister of Ports, Shipping & Waterways, Shri Sarbananda Sonowal, was also joined by Odisha Chief Minister, Mohan Charan Majhi.
- Shri Sonowal dedicated two new lighthouses at Chaumuck (Balasore) and Dhamra (Bhadrak) and emphasized empowering coastal communities to preserve and promote lighthouses as part of India's rich maritime heritage.

2. Stakeholders Meet

- Shri Sarbananda Sonowal chaired a Stakeholders Meeting to boost Lighthouse Tourism in Kerala in July 2024.
- The meet was aimed at conceptualising & strategising to showcase the unique tourism potential of lighthouses as spots of historical, cultural and scenic confluence.
- This meet underscored government's commitment to promote lighthouse tourism and revitalise these iconic structures as vibrant tourist destinations.

- The government's commitment to lighthouse tourism is also evident from its efforts under the Sagarmala Programme and its focus on fostering partnerships with private stakeholders.
- It exemplifies integrated development, blending infrastructure growth, sustainability, and community welfare to drive India's maritime and economic progress.
- The Directorate General of Lighthouses and Lightships (DGLL) actively collaborates with private players to ensure these projects meet international standards while safeguarding environmental sustainability.
- The government plans to establish a national framework to empower the coastal communities and ensure sustainable development around lighthouses.

To fully realise the potential of lighthouse tourism in India, the government has outlined several forward-looking strategies:

- **Sustainable Development:** Emphasis on eco-friendly practices to protect fragile coastal ecosystems while promoting responsible tourism.
- **Integration with Coastal Circuits:** Lighthouses are incorporated into broader coastal tourism itineraries to enhance their appeal.
- Awareness Campaigns: Digital initiatives are being launched to showcase lighthouse destinations to domestic and international audiences.
- **Skill Development:** Training programs are being introduced to equip local communities with skills required for employment in hospitality and tourism-related sectors.

These initiatives align with Prime Minister Modi's vision of "Atmanirbhar Bharat" (self-reliant India) and aim to integrate India's rich maritime history into its economic growth strategy.

- Lighthouse tourism exemplifies the harmonious blend of heritage conservation and modern tourism development, transforming these iconic maritime landmarks into thriving tourist destinations.
- By preserving India's rich maritime history while unlocking new economic opportunities, this initiative fosters both community empowerment and sustainable growth.
- Under the Sagarmala Programme, with active participation from private stakeholders, lighthouse tourism is set to become a cornerstone of India's booming travel industry.
- These revitalized sites offer visitors a unique experience that combines history, adventure, and the breathtaking beauty of India's coastline.
- Over 9 lakh tourists visited lighthouses in the first half of the current fiscal, and it is evident, that the growing trend of lighthouses as tourists hotspots to continue.
- As hubs of cultural and historical significance, lighthouses also serve as platforms for showcasing local crafts, cuisine, and traditions, further enriching the visitor experience.
- With continued efforts and innovation, lighthouse tourism not only preserves the past but also illuminates a bright future for India's coastal regions.

QUESTIONS

Fill in the Blank:

- 1. India has a coastline spanning over ______ kilometres, home to 204 lighthouses that are now being reimagined as tourism destinations.
- **3.** Lighthouse tourism involves transforming lighthouses and their surrounding areas into ______ tourist attractions.

- 4. The Central Government is actively promoting lighthouse tourism as a part of its broader _______ India Vision (MIV) 2030.
- 5. In February 2024, PM Narendra Modi dedicated ______ lighthouses with tourist facilities in 10 states & UTs.
- 6. The first Indian Lighthouse Festival, "_____ Prakash Stambh Utsav," was inaugurated on 23rd September 2023 in Goa.
- 7. The government's commitment to lighthouse tourism is also evident from its efforts under the ______ Programme.
- 8. The Directorate General of Lighthouses and Lightships (DGLL) collaborates with _____ players to meet international standards.
- **9.** The government plans to establish a national framework to empower the ______ communities around lighthouses.
- **10.** Under the Sagarmala Programme, lighthouse tourism is set to become a cornerstone of India's ______ industry.

3. Former Supreme Court judge Justice Madan Lokur appointed chairperson of U.N. Internal Justice Council

- Former Supreme Court judge Justice Madan B. Lokur was appointed Chairperson of the United Nations Internal Justice Council for a term ending on November 12, 2028.
- In a communication to Justice Lokur, U.N. Secretary-General António Guterres said the retired judge would head the council which also comprises other distinguished jurists.
- "I have the pleasure to appoint you, with immediate effect, as a member of the Internal Justice Council, in the capacity of Chairperson, for a term ending on 12 November 2028,".
- "The other members of the Council are: Ms. Carmen Artigas [Uruguay], distinguished external jurist nominated by staff; Ms. Rosalie Balkin [Australia], distinguished external jurist nominated by management; Mr. Stefan Brezina [Austria], staff representative; and Mr. Jay Pozenel [United States of America], management representative," it added.
- Born in 1953, Justice Lokur was appointed a judge of the Supreme Court on June 4, 2012. He demitted office on December 30, 2018, upon attaining the age of superannuation.
- In 2019, Justice Lokur was appointed to the Supreme Court of Fiji as a judge of its non-resident panel.
- He was the first Indian judge to be appointed as a judge in the Supreme Court of another country.
- The United Nations Internal Justice Council (UN IJC) is an independent body established to help maintain the fairness, transparency, and effectiveness of the UN's internal justice system.
- It plays a crucial role in ensuring accountability and the resolution of employment-related disputes within the UN system.

Establishment and Role

- The UN IJC was created to uphold principles of justice and due process for employees of the United Nations.
- It oversees the internal justice mechanisms, including the UN Dispute Tribunal (UNDT) and the UN Appeals Tribunal (UNAT).

Composition

The council is composed of five members

- Two judges from the internal justice tribunals.
- A staff representative.
- A management representative.
- An external independent member appointed by the UN General Assembly.

Responsibilities

- **Nominating Judges:** The council proposes candidates for judges to the UNDT and UNAT for appointment by the General Assembly.
- **Oversight and Review:** It ensures the efficient and effective operation of the internal justice system.
- Monitoring Independence: Safeguards the independence and impartiality of the UNDT and UNAT.
- **Recommendations:** Advises the Secretary-General and the General Assembly on matters related to the internal justice system.

Internal Justice System

- UN Dispute Tribunal (UNDT): Handles first-level disputes related to employment contracts, decisions of the administration, and other employment-related issues.
- UN Appeals Tribunal (UNAT): Functions as the appellate body to review decisions made by the UNDT.

Independence and Transparency

• The council ensures that the internal justice mechanisms operate free from undue influence and are transparent in their functioning.

Significance:

- Protects the rights of UN staff while balancing the organization's operational needs.
- Helps maintain trust and integrity within the UN's administrative processes.

United Nations

The United Nations (UN) is an international organization founded in 1945, consisting of several key components:

1. General Assembly (GA)

- Membership: All 193 member states of the UN.
- **Functions:** It serves as the main deliberative body, where member states discuss and make decisions on a range of international issues such as peace and security, development, and human rights.
- **Decision-making:** Each member has one vote, and decisions on most issues require a two-thirds majority.

2. Security Council

- **Membership:** 15 members 5 permanent members (China, France, Russia, the United Kingdom, and the United States) and 10 elected members, serving two-year terms.
- **Functions:** Responsible for maintaining international peace and security. The permanent members hold veto power over substantive resolutions.
- **Decision-making:** Requires the concurrence of at least 9 members, including all 5 permanent members.

3. International Court of Justice (ICJ)

- **Membership:** Composed of 15 judges, elected for 9-year terms by the General Assembly and Security Council.
- **Functions:** It is the principal judicial body of the UN, resolving legal disputes between states and offering advisory opinions on legal questions referred to it by the UN organs and specialized agencies.

4. Secretariat

- **Head:** Led by the Secretary-General, who is appointed for a five-year term by the General Assembly on the recommendation of the Security Council.
- **Functions:** Carries out the day-to-day work of the UN, implementing decisions and policies adopted by other organs. The Secretariat supports the work of other UN organs and agencies, manages peacekeeping missions, and provides technical and policy advice.

5. Economic and Social Council (ECOSOC)

- **Membership:** 54 member states, elected for three-year terms by the General Assembly.
- **Functions:** It coordinates the economic and social work of the UN and its specialized agencies. It holds sessions in which various topics related to economic, social, and health issues are discussed.

6. Trusteeship Council

- **Function:** Established to oversee the administration of trust territories and ensure that their inhabitants were prepared for self-government.
- **Current Status:** The Trusteeship Council has effectively been inactive since the last trust territory, Palau, became independent in 1994.

7. Specialized Agencies and Programs

- The UN system includes numerous specialized agencies, such as the World Health Organization (WHO), UNESCO, the International Labour Organization (ILO), and the World Bank, each with specific mandates and functions.
- Programs and funds like UNICEF, UNDP, and UNHCR work on issues like humanitarian aid, development, and refugee assistance.

8. Regional Commissions

• There are five regional commissions (*e.g.*, the Economic Commission for Africa or ECA, Economic Commission for Latin America and the Caribbean or ECLAC), which focus on specific geographic regions to promote economic cooperation and development.

QUESTIONS

Fill in the Blank:

1. Former Supreme Court judge Justice Madan B. Lokur was appointed Chairperson of the United Nations ______ Council for a term ending on November 12, 2028.

- 2. The United Nations Internal Justice Council is an independent body established to maintain the ______, transparency, and effectiveness of the UN's internal justice system.
- **3.** The UN Internal Justice Council (UN IJC) oversees the internal justice mechanisms, including the UN Dispute Tribunal (UNDT) and the ______ Tribunal (UNAT).
- 4. Justice Madan B. Lokur was the first Indian judge to be appointed as a judge in the Supreme Court of
- **5.** The UN Internal Justice Council is composed of five members: two judges from the internal justice tribunals, a staff representative, a management representative, and an external _____ member.
- 6. The UN Dispute Tribunal (UNDT) handles ______ disputes related to employment contracts, decisions of the administration, and other employment-related issues.
- 7. The UN Appeals Tribunal (UNAT) functions as the _____ body to review decisions made by the UN Dispute Tribunal.
- 8. The UN IJC proposes candidates for judges to the UNDT and ______ for appointment by the General Assembly.
- **9.** The _____ Council ensures the independence and impartiality of the UN Dispute Tribunal (UNDT) and UN Appeals Tribunal (UNAT).
- **10.** The UN system includes numerous specialized agencies such as the World Health Organization (WHO), UNESCO, and the International Labour Organization (ILO), each with specific ______ and functions.

4. SpaDeX Deployed

- SpaDeX mission is a cost-effective technology demonstrator mission for the demonstration of in-space docking using two small spacecraft launched by PSLV.
- This technology is essential for India's space ambitions such as Indian on Moon, sample return from the Moon, the building and operation of Bharatiya Antariksh Station (BAS), etc.
- In-space docking technology is essential when multiple rocket launches are required to achieve common mission objectives.
- Through this mission, India is marching towards becoming the fourth country in the world to have space docking technology.

Objectives

- The primary objective of the SpaDeX mission is to develop and demonstrate the technology needed for rendezvous, docking, and undocking of two small spacecraft (SDX01, which is the Chaser, and SDX02, the Target, nominally) in a low-Earth circular orbit. Secondary objectives include:
- Demonstration of the transfer of electric power between the docked spacecraft, which is essential for future applications such as in-space robotics, Composite spacecraft control, and Payload operations after undocking.

Mission Concept

- The SpaDeX mission consists of two small spacecraft (about 220 kg each) to be launched by PSLV-C60, independently and simultaneously, into a 470 km circular orbit at 55° inclination, with a local time cycle of about 66 days.
- The demonstrated precision of the PSLV vehicle will be utilized to give a small relative velocity between the Target and Chaser spacecraft at the time of separation from the launch vehicle.

- This incremental velocity will allow the Target spacecraft to build a 10-20 km inter-satellite separation with respect to the Chaser within a day.
- At this point, the relative velocity between the Target will be compensated using the propulsion system of the Target spacecraft.
- At the end of this drift arrest maneuver, the Target and Chaser will be in the same orbit with identical velocity but separated by about 20 km, known as Far Rendezvous.
- With a similar strategy of introducing and then compensating for a small relative velocity between the two spacecraft, the Chaser will approach the Target with progressively reduced inter-satellite distances of 5 km, 1.5 km, 500 m, 225 m, 15 m, and 3 m, ultimately leading to the docking of the two spacecraft.
- After successful docking and rigidization, electrical power transfer between the two satellites will be demonstrated before undocking and separation of the two satellites to start the operation of their respective payloads for the expected mission life of up to two years.

New Technologies

The indigenous technologies developed for enabling this docking mission are as follows:

- Docking mechanism,
- A suite of four rendezvous and docking sensors,
- Power transfer technology,
- Indigenous novel autonomous rendezvous and docking strategy,
- Inter-satellite communication link (ISL) for autonomous communication between spacecraft, incorporated with inbuilt intelligence to know the states of the other spacecraft,
- GNSS-based Novel Relative Orbit Determination and Propagation (RODP) processor to determine the relative position and velocity of the other spacecraft, Simulation test beds for both hardware and software design validation and testing.
- In addition, SpaDeX, because of its small size and mass, is even more challenging due to the finer precision required for the rendezvous and docking maneuvers compared to docking two large spacecraft.
- This mission will be a forerunner for autonomous docking needed for future lunar missions like Chandrayaan-4 without the support of GNSS from Earth.

Docking Mechanism

- The docking mechanism is a low-impact docking system (approach velocity is in the order of 10 mm/s), androgynous (docking systems are identical for both spacecraft, Chaser & Target), and is a peripheral docking system (concept similar to the International Docking System Standard used by other agencies for human missions).
- The mechanism is smaller (450 mm) with one degree of freedom for extension and uses two motors compared to the IDSS (800 mm) on a hexapod with 24 motors.
- Multiple test beds were established to test the hardware and software simulation of the docking kinematics to verify and finalise the docking approach parameters.

Sensor Suite

• The additional sensor suite in this mission includes Laser Range Finder (LRF) and Corner Cube Retro Reflectors to work for a range of 6000 to 200 m for determining range (R). The set of Rendezvous Sensors (RS) is used in the range of 2000 to 250 m and from 250-10 m. RS provides the relative position (x, y, z) while LRF determines both relative position and velocity independently.

• Proximity and Docking Sensor (PDS) provides relative position and velocity over a range of 30 m to 0.4 m. Laser Diodes (LDs) are used as targets for RS & PDS. A video monitor is used in the 20 to 0.5 m range and it will capture the video of the docking event. A Mechanism Entry Sensor (MES) is used from 8 cm to 4 cm to detect chaser entry into the target spacecraft during docking. Multiple test beds were used to calibrate and validate these sensors before accepting them for the mission.

ISL-Enabled GNSS-Based RODP

- Like all ISRO satellites in low-Earth orbit, both the SpaDeX spacecraft carry a differential GNSS-based Satellite Positioning System (SPS), which provides PNT (Position, Navigation, and Timing) solutions for the satellites. In SpaDeX, a novel RODP processor is included in the SPS receiver, which allows accurate determination of the relative position and velocity of the Chaser and the Target.
- By subtracting the carrier phase measurements from the same GNSS satellites in both Chaser and Target SPS receivers, highly accurate relative states of the two satellites are determined.
- The VHF/UHF transceivers in both satellites aid this process by transferring the GNSS satellite measurements from one satellite to the other.
- Hardware and software test beds, including closed-loop verifications, were carried out to characterise the RODP performance.

Rendezvous and Docking Algorithms

- Up to an inter-satellite distance (ISD) of 5 km, standard orbit maintenance and attitude control algorithms employed in ISRO LEO spacecraft are used.
- As the spacecraft are in circular orbit, and any addition or reduction of velocity to the satellites will result in orbit change, the V-bar strategy using n-Pulse, Glideslope and PV guidance algorithms are employed to reduce the ISD between the satellites, hold at fixed ISDs to evaluate the sensors and software, and finally docking.
- These algorithms were converted into software for achieving the rendezvous and docking. These software solutions were tested and validated in multiple digital, hardware-in-loop, onboard-in-loop, software-in-loop, and robotic simulations.

Post-Docking Activities

- After the docking and undocking events, the spacecrafts will be separated and used for application missions.
- A High-Resolution Camera (HRC) with a 4.5 m IGFOV and a swath of 9.2 x 9.2 km (snapshot mode) and 9.2 × 4.6 km (video mode) from a 450 km altitude is mounted in SDX01. This is a miniature version of the surveillance camera developed by SAC/ISRO.
- A Miniature Multi-Spectral Payload (MMX) is mounted in SDX02, developed by SAC/ISRO. This has four VNIR bands (B1/B2/B3/B4) at 450 nm to 860 nm and a 25 m IGFOV with a swath of 100 km from a 450 km altitude. The imaging is useful for natural resource monitoring and vegetation studies.
- A Radiation Monitor (RadMon) payload is mounted in SDX02, which will measure radiation dose encountered in space.
- This will help in generation of a radiation database for future Total Ionization Dosimeter (TID) and Single Event Upset (SEU) measurements for space science studies, with applications in human spaceflight.

Spacecraft Development

• The SpaDeX spacecraft were designed and realized by the UR Rao Satellite Centre (URSC) with the support of other ISRO centers (VSSC, LPSC, SAC, IISU, and LEOS).

- The spacecraft, in its orbital phase, will be controlled from ISTRAC using ISRO ground stations and other externally hired ground stations.
- The full integration and testing of the satellite were carried out at M/s Ananth Technologies, Bangalore, under the supervision of URSC.
- Presently, after completing all tests and clearances, the spacecraft has moved from URSC to SDSC and is undergoing preparations for launch.

QUESTIONS

Fill in the Blank:

- 1. The SpaDeX mission is a cost-effective technology demonstrator mission for the demonstration of _______ using two small spacecraft launched by PSLV.
- 2. The primary objective of the SpaDeX mission is to develop and demonstrate the technology needed for rendezvous, docking, and ______ of two small spacecraft in a low-Earth circular orbit.
- 3. The SpaDeX mission will use two spacecraft, SDX01 () and SDX02 (), to demonstrate docking technology.
- **4.** The docking mechanism used in the SpaDeX mission is an ______ system with low-impact docking and one degree of freedom for extension.
- 5. The SpaDeX mission will demonstrate ______ transfer between the two spacecraft, which is essential for future applications such as in-space robotics and payload operations.
- 6. The SpaDeX spacecraft will be launched into a _____ km circular orbit at a 55° inclination by PSLV-C60.
- 7. The docking approach between the two spacecraft in the SpaDeX mission involves the relative velocity being ______ using the propulsion system of the Target spacecraft.
- 8. The SpaDeX mission will employ ______ technology to determine the relative position and velocity of the Chaser and Target spacecraft.
- 9. The Rendezvous and Docking Sensors (RS) are used to determine the relative position over a range of ______ to 250 m.
- **10.** After docking, the SpaDeX mission will demonstrate the ______ of a High-Resolution Camera (HRC) and a Miniature Multi-Spectral Payload (MMX) for natural resource monitoring and radiation measurement.

5. Montana Supreme Court upholds landmark youth climate ruling: What was the case?

- The Montana Supreme Court upheld a lower court's judgment which had favoured 16 young activists who argued that the state violated their right to a clean environment.
- In a six-to-one ruling, the apex court found that the plaintiffs, between ages five and 22, had a "fundamental constitutional right to a clean and healthful environment".
- This is the first of its kind judgment by a state supreme court in the United States.

Why did Montana's youth sue their state?

- The case revolved around a provision of the Montana Environmental Policy Act that bars officials from evaluating "greenhouse gas emissions and corresponding impacts to the climate in the state or beyond the state's borders" when deciding whether to approve new energy projects.
- In their lawsuit, the young plaintiffs said the law enabled the government to promote and support fossil fuel extraction and burning, which is accelerating climate change and severely impacting their health and well-being.
- Furthermore, the law violated the Montana Constitution, which guarantees residents "the right to a clean and healthful environment," and specifies that the state and individuals are responsible for maintaining and improving the environment "for present and future generations", the petitioners argued.
- Montana has a long history of mining oil, gas and coal, and it currently has 5,000 gas wells, 4,000 oil wells, four oil refineries and six coal mines, according to a report by The New York Times. Notably, annual average temperatures, including daily minimums, maximums, and averages, have spiked across the state between 1950 and 2015, a 2017 report by the Montana Climate Assessment (MCA) said. "The increases range between 2.0-3.0°F (1.1-1.7°C) during this period," it added.
- The plaintiffs, represented by non-profit law firm Our Children's Trust and other law firms, sued their state in 2020 when they were aged 2 to 18. The trial the first-ever constitutional climate trial in US history began in June this year, during which 10 climate experts and 12 out of 16 petitioners gave their testimonies.

What did the district court ruling say?

- The district court rejected the state government's defence that Montana's emissions are negligible in comparison to the rest of the world's. In her judgment, Judge Kathy Seeley said the state is a "major emitter of greenhouse gas emissions in the world, in absolute terms, in per person terms, and historically" and noted that it releases carbon dioxide as much as produced by Argentina, the Netherlands or Pakistan.
- The judge added that Montana authorised new fossil fuel projects without evaluating their greenhouse gas emissions or climate impact, which has caused and contributed "to climate change and Plaintiffs' injuries and reduce the opportunity to alleviate Plaintiffs' injuries". Therefore, she held the previously mentioned provision of the Montana Environmental Policy Act unconstitutional.

Why is this significant?

- Experts believe that the Montana Supreme Court judgment would further encourage people to bring in similar cases and hold countries and companies accountable for their climate mitigation efforts and historical contributions to climate change.
- As global temperatures continue to soar, there has been a rise in climate litigation in recent years. As of December 2022, there have been 2,180 climate-related cases filed in 65 jurisdictions, including international and regional courts, tribunals, quasi-judicial bodies, or other adjudicatory bodies across the world, according to the Global Climate Litigation Report: 2023 Status Review. This is a steady increase from 884 cases in 2017 and 1,550 cases in 2020.

QUESTIONS

Fill in the Blank:

- 1. The Montana Supreme Court upheld a lower court's judgment, which favored 16 young activists who argued that the state violated their right to a _____.
- **2.** In their lawsuit, the young plaintiffs claimed that a provision of the Montana Environmental Policy Act allowed the government to promote ______ and fossil fuel extraction, contributing to climate change.

- **3.** The plaintiffs argued that the law violated the Montana Constitution, which guarantees residents the right to a ______ environment.
- **4.** The district court rejected the state's defense, stating that Montana is a ______ emitter of greenhouse gases, comparable to countries like Argentina, the Netherlands, or Pakistan.
- 5. Experts believe the Montana Supreme Court ruling could inspire similar cases worldwide, holding countries and companies accountable for their _____ contributions to climate change.

6. COP29, climate finance and its optical illusion

- Finance has been a major point of climate change negotiation since the launching of the United Nationsled climate change negotiations in 1991, producing the United Nations Framework Convention on Climate Change (UNFCCC) 1992.
- Article 4 (7) of the UNFCCC clearly says "that the extent to which the developing country Party will be fulfilling their climate action commitments is contingent on how much finance and technology they get from developed country Parties".
- The Paris Agreement retains, in Article 9(1), the provision relating to finance, binding the developed countries to mobilise finance for the developing countries.
- The sixth assessment report of the Intergovernmental Panel on Climate Change (IPCC) has described finance, capacity-building and a transfer of technology as critical enablers of climate action in developing countries in the backdrop of anthropogenic greenhouse gas emissions responsible for 1.1° Celsius of warming (above what it was in 1850-1900) in 2011-20.

Falling short

- In pursuance of their responsibility, the developed countries agreed in 2009 that they would collectively mobilise \$100 billion a year by 2020.
- The \$100 billion mark, met by the developed countries only in 2022, does not match the growing needs of climate finance corresponding to the developing countries' nationally determined contributions (NDCs).
- Second, the mark has been considered in many reports to be well-short of estimated finance to fund the actions needed across different sectors to keep the average global temperature rise within 1.5° Celsius by the end of this century.
- The 29th Conference of the Parties (COP 29) meeting at Baku, Azerbaijan, in November 2024, was meant for the Parties to the Paris Agreement to have a New Collective Quantified Goal on Climate Finance (NCQG), replacing a \$100 billion floor and laying a new floor taking into account the needs and the priorities of developing countries to tackle the climate crisis.
- In response to persistent demand by all the major negotiating groups belonging to the developing south that the developed north mobilise \$1.3 trillion by 2030, the developed north agreed to release only \$300 billion per year by 2035.
- The \$300 billion mark ignores the estimation by the UNFCCC's Standing Committee on Finance (SFC) relating to the annual financial needs of developing countries, which it derived from their NDCs.

- As in the SFC's estimation, the financial needs stand at between \$455 billion-\$584 billion.
- Even these figures cover around half of the 5,760 costed and non-costed needs identified by 98 developing countries in their NDCs (Third Report of the Independent High-level Expert Group on Climate Finance, November, 2024).
- The decision on the NCQG makes reference to the financial needs of those particularly vulnerable to the adverse effects of climate change such as the least developed countries (LDC) and small island developing states (SIDS).
- But the NCQG does not make minimum allocation floors for the LDCs and SIDS.
- During the meeting, the Alliance of Small Island States demanded the allocation of \$39 billion for SIDS while the LDC demanded at least \$220 billion for them.
- It appears that the first-ever Global Stocktake (GST) in consonance with the Paris Agreement in 2023 also failed in influencing the cause of loss and damage concern in the NCQG.
- In the GST estimation, economic costs are estimated to reach \$447 billion-\$894 billion per year by 2030.

India and the NCQG

- India's perspective on the delivery of climate finance from the developed north to the developing south is derived from equity frame expressed in the principle of common but differentiated responsibility and respective capability.
- It is notable that India joined the Montreal Protocol to protect the ozone layer from further depletion, which led to setting up of a multilateral fund of \$240 million, including an additional \$80 million for use in India, China and other eligible low-income Parties.
- During COP29, India specified that the new floor should mobilise \$1.3 trillion by 2030, of which at least \$600 billion should come in the form of grants and concessional resources.
- On other major agenda items, mitigation work programme, just transition work programme and GST, India's representative called for an adequate provisioning of finance and other means of implementation to fulfil them.
- India's submission of NDC next year is contingent on a decision relating to finance (Earth Negotiations Bulletin—, November 22, 2024).
- India has expressed its extreme disappointment on the adoption of the NCQG in its present form, shape which was without its consultation.
- It made serious objections against the COP29 presidency and the Secretariat in the way it was finalised which is at the expense of trust, collaboration and in contravention of the UNFCCC's norm, on an issue which is a creation of the developed north but which affects developing countries more.
- India outrightly rejected the NCQG.
- It also added that this NCQG expects the developing world to mobilise resources.
- In India's view, the paltry sum will influence the ambition and the implementation of its NDC.

What the developed north must do

• The pith and substance of the Paris Agreement are the NDCs. In expecting the developing south to bring out more ambitious NDCs relating to the mitigation of greenhouse gases and implementing the same effectively, it is equally important on the part of the developed north to raise their scale and quality of climate finance and also make sincere efforts in putting in place a coherent climate finance architecture.

• This will ensure adequate, directly accessible and affordable climate finance to the developing countries.

30th Conference of the Parties to the UNFCCC

- COP 30 (30th Conference of the Parties to the UNFCCC) is a significant upcoming climate summit under the United Nations Framework Convention on Climate Change (UNFCCC). This conference will be the 30th meeting of the parties to the agreement, bringing together world leaders, negotiators, and experts to discuss and address global climate change issues.
 - Location: COP 30 will be hosted by the United Arab Emirates (UAE) in 2025.
 - **Purpose:** Like previous COPs, the aim is to review the progress of global climate action, set targets for future emissions reductions, and strengthen international cooperation. This conference will continue the work laid out in the Paris Agreement (2015) and other previous COP meetings.
- Agenda:
 - $\circ\,$ Strengthening global commitments to limit global temperature rise to 1.5 °C above pre-industrial levels.
 - Review of financial commitments for developing countries to mitigate and adapt to climate change.
 - Strategies for achieving net-zero emissions.
 - Addressing climate justice and equity, particularly for vulnerable populations and countries.
 - COP 30 is expected to play a pivotal role in ensuring that global climate targets are met and that the world moves toward sustainable solutions in the face of climate change.
- United Nations Framework Convention on Climate Change (UNFCCC) 1992
- The United Nations Framework Convention on Climate Change (UNFCCC), adopted in 1992, is a foundational international treaty designed to address the pressing issue of climate change. Here's an overview of its key aspects:

1. Adoption and Context

- Adopted: At the Earth Summit in Rio de Janeiro, Brazil, in June 1992.
- **Objective:** To stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system.
- Focus: Sustainable development and a precautionary approach to environmental protection.

2. The UNFCCC is underpinned by several key principles

- **Common but Differentiated Responsibilities (CBDR):** Acknowledges that while all nations share the responsibility to address climate change, developed countries bear a greater historical responsibility for emissions.
- **Precautionary Principle:** Advocates for measures to prevent climate change impacts, even in the absence of complete scientific certainty.
- Sustainable Development: Encourages nations to align climate actions with development goals.

3. Non-Binding Nature

• The treaty sets broad goals and principles but does not impose legally binding targets for greenhouse gas emissions. Binding commitments were introduced later through protocols and agreements (*e.g.*, the Kyoto Protocol and Paris Agreement).

- **Parties:** Nearly universal membership, with 197 parties, including all United Nations member states and the European Union.
- Conference of the Parties (COP): An annual meeting of parties to assess progress and negotiate further actions.

4. Obligations for Parties

- Develop and update national inventories of greenhouse gas emissions.
- Formulate and implement programs to mitigate and adapt to climate change.
- Facilitate technology transfer and capacity building in developing countries.
- Promote public awareness and education about climate change.

5. Milestones under the UNFCCC

- Kyoto Protocol (1997): Introduced binding emission reduction targets for developed countries.
- **Paris Agreement (2015):** A landmark agreement under the UNFCCC, aiming to limit global temperature rise to below 2°C, with efforts to keep it at 1.5°C.

QUESTIONS

Fill in the Blank:

- 1. The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in ______ at the Earth Summit in Rio de Janeiro.
- **2.** According to Article 4(7) of the UNFCCC, the extent to which developing countries fulfill their climate action commitments depends on the finance and technology they receive from _____ countries.
- **3.** The Paris Agreement retains a provision in Article 9(1), binding developed countries to mobilize ______ for developing countries to tackle climate change.
- 4. The sixth assessment report of the Intergovernmental Panel on Climate Change (IPCC) describes ______, capacity-building, and a transfer of technology as critical enablers of climate action in developing countries.
- **5.** In 2009, developed countries agreed to collectively mobilize \$______ billion per year by 2020 for climate finance.
- **6.** The 29th Conference of the Parties (COP 29) meeting, held in ______ in November 2024, was intended to establish a New Collective Quantified Goal (NCQG) on climate finance.
- 7. India specified that the new floor for climate finance should mobilize \$______ trillion by 2030, with at least \$600 billion coming in the form of grants and concessional resources.
- **8.** India rejected the NCQG adopted at COP29, stating that the amount was ______ and would influence the ambition and implementation of its Nationally Determined Contributions (NDCs).
- **9.** The principle of ______ under the UNFCCC recognizes that developed countries have a greater historical responsibility for emissions.
- **10.** COP 30, to be hosted by the United Arab Emirates (UAE) in _____, will focus on global climate action and strategies for achieving net-zero emissions.

7. One Nation One Subscription

- India, a land of ancient knowledge and rich tradition, has always been a beacon of innovation and discovery.
- From pioneering advancements in mathematics and astronomy to groundbreaking contributions in various fields of science, the country's legacy of intellectual achievement is unmatched.
- On August 15, 2022, Prime Minister Narendra Modi, from the ramparts of the Red Fort, reminded the nation of this proud legacy and the critical role that Research and Development (R&D) would play in shaping India's future.
- As he addressed the nation, he emphasized the importance of nurturing R&D capabilities, particularly during Amrit Kaal, and called for a renewed focus on innovation with the inspiring slogan, "Jai Anusandhan."
- This call for a vibrant R&D ecosystem resonated with the goals outlined in the National Education Policy (NEP) 2020, which identifies research as a fundamental driver of educational excellence and national progress.
- The policy seeks to cultivate a robust research culture that not only enhances academic quality but also accelerates India's growth on the global stage.
- In alignment with this vision, Union Cabinet has approved the One Nation One Subscription (ONOS) scheme on 25th Nov 2024.
- This initiative seeks to break down barriers to knowledge by providing all students, faculty, researchers, and scientists across the nation's government higher education institutions (HEIs) and central government R&D centres with access to international scholarly journals and articles.
- The goal is to ensure that India's academic and research communities are equipped with the best global resources, fostering innovation and enhancing the quality of research across disciplines.
- The ONOS scheme is a cornerstone of India's ambition to become a self-reliant and developed nation by 2047.
- This initiative is a key component of the Viksitbharat@2047 vision. This roadmap envisions India's emergence as a leading global power driven by cutting-edge research, technological advancement, and self-sustained progress.
- Through such initiatives, India is preparing to build on its rich legacy of knowledge, positioning itself at the forefront of global innovation and discovery.

ONOS Scheme Overview

- The scheme's objective is to provide all eligible students, faculty, researchers, and scientists with access to top-tier international research articles and journals.
- It covers more than 6,300 government-managed higher education institutions and central governmentmanaged research and development institutions across the country.

The scheme provides

- Access to more than 13,000 scholarly journals from 30 major international publishers.
- Benefits about 1.8 crore students, faculty, and researchers across disciplines such as STEM (Science, Technology, Engineering, Mathematics), Medicine, Social Sciences, Finance & Accounts, etc.
- Inclusive access to research for institutions in tier 2 and tier 3 cities, ensuring equitable access to knowledge.

Key Objectives and Goals

- Access to Scholarly Knowledge: The scheme provides access to high-quality scholarly journals and publications across various fields. This aims to democratise access to knowledge to enhance the research capabilities of students, faculty, and researchers.
- **Inclusion of Diverse Institutions:** The scheme ensures that institutions, regardless of their geographic location—in urban centres or remote areas—have access to world-class research resources. This is crucial for advancing core and interdisciplinary research in the country.
- **Global Research Participation:** It aligns with the goals of Viksitbharat@2047, helping India to emerge as a global leader in research and development by enabling its academic and research institutions to engage with international scholarly communities.

Implementation Details

- National Subscription via INFLIBNET: The entire subscription process will be centrally coordinated by INFLIBNET (Information and Library Network), an autonomous inter-university centre under the University Grants Commission (UGC). INFLIBNET will manage the distribution of digital access to these journals, ensuring a seamless experience for users.
- **Digital Access:** Journals will be accessible entirely through a digital platform, ensuring convenience and ease for all users. This approach minimises administrative complexities and makes access available ondemand.
- Government Allocation: A total of ₹6,000 crore has been allocated for the PM-ONOS initiative, covering three years—2025, 2026, and 2027. The funding will cover the subscription charges for all participating institutions across the three-year period. Further, ONOS will also provide central funding support of Rs. 150 Crore per year for beneficiary authors to publish in selected good quality Open Access (OA) journals.

Funding and Financial Strategy

- The ₹6,000 crore allocated for ONOS ensures smooth implementation of ONOS from 1st January 2025 to 31st December 2027
- ONOS phase I, starting from 1 January 2025, will provide access to over 13,000 journals for more than 6,300 government academic and R&D institutes including central and state-govt universities and colleges. This translates to nearly 1.8 Crore students, faculty and researchers getting access to high quality research publications.
- The subscription charges for journals from 30 publishers under ONOS Phase I will be centrally paid by INFLIBNET, covering payments from library consortia, HEIs, and R&D institutions under central ministries. Independent subscriptions will continue for resources not included in Phase I.
- This phase will establish the program's framework and ensure that key research resources are made available to a large number of institutions across India.
- Payment of Article Processing Charges (APC) to publishers for selected high quality research publications of the researchers from these participating institutions have also been envisaged in this phase.
- Experience of ONOS phase I will be used for designing subsequent phases of ONOS.

Further Enhancements and Features

- Synergy with Existing Initiatives: The ONOS scheme will complement the existing Anusandhan National Research Foundation (ANRF), which is designed to promote R&D activities across India.
- ONOS will facilitate easy access to international research materials, supporting the foundation's goal of fostering research and innovation across government-managed institutions.

- **Discounts on Article Processing Charges (APCs):** One of ONOS's significant features is the discounts on Article Processing Charges (APCs). Journals typically levied these charges for publishing research articles.
- By negotiating lower APCs with publishers, the scheme will help Indian researchers publish their work in high-quality journals without incurring heavy financial costs.
- The One Nation One Subscription initiative is a game-changing scheme for India's research ecosystem.
- By providing digital access to over 13,000 journals from 30 international publishers, it will bridge gaps in research infrastructure across India.
- Through its phased implementation, the scheme will significantly contribute to enhancing India's academic and research excellence, fostering innovation, and helping the country emerge as a global hub for scientific research.
- By leveraging existing consortia initiatives of 10 central government Ministries and Departments as well as initiatives of many government higher education institutions, an unifying approach through the one nation one subscription will democratise knowledge dissemination and empower a new generation of researchers and students, providing them with the resources they need to excel.
- ONOS is a key part of a broader vision to transform access to knowledge in the country. As the first step in a multi-pronged approach, it expands access through the widely used subscription model.
- The other steps focus initially on promoting Indian journals and repositories and then introducing new research evaluation methods that consider both journal metrics and factors like innovation and entrepreneurship.

QUESTIONS

Fill in the Blank:

- 1. On August 15, 2022, Prime Minister Narendra Modi, from the ramparts of the Red Fort, reminded the nation of India's legacy of intellectual achievement and the critical role that _____ would play in shaping India's future.
- 2. The ______ scheme was approved by the Union Cabinet on 25th November 2024 to provide access to international scholarly journals and articles to students, faculty, researchers, and scientists across India's government higher education institutions (HEIs) and central government R&D centres.
- **3.** The goal of the ONOS scheme is to provide access to more than ______ scholarly journals from 30 major international publishers to students, faculty, and researchers across various disciplines.
- **4.** The ONOS scheme aims to break down barriers to knowledge by ensuring equitable access to research for institutions in ______ and _____ cities.
- 5. The ONOS initiative aligns with India's vision of becoming a global leader in research and development, which is part of the ______ @2047 roadmap.
- 6. The total government allocation for the ONOS scheme over three years, from 2025 to 2027, is _____ crore.
- 7. The ONOS Phase I, starting from January 1, 2025, will provide access to over 13,000 journals for more than ______ government academic and R&D institutions.
- 8. The ONOS scheme will be centrally coordinated by _____, an autonomous inter-university centre under the University Grants Commission (UGC).
- **9.** The ONOS scheme will complement the existing Anusandhan National Research Foundation (ANRF) to promote ______ activities across India.

10. ONOS will help Indian researchers publish their work in high-quality journals by negotiating lower ______ with publishers.

8. After Non-Cooperation Movement

- In February 1922, Mahatma Gandhi decided to withdraw the Non-Cooperation Movement.
- He felt the movement was turning violent in many places and satyagrahis needed to be properly trained before they would be ready for mass struggles.
- Within the Congress, some leaders were by now tired of mass struggles and wanted to participate in elections to the provincial councils that had been set up by the Government of India Act of 1919.
- They felt that it was important to oppose British policies within the councils, argue for reform and also demonstrate that these councils were not truly democratic.
- C. R. Das and Motilal Nehru formed the Swaraj Party within the Congress to argue for a return to council politics.
- But younger leaders like Jawaharlal Nehru and Subhas Chandra Bose pressed for more radical mass agitation and for full independence.
- In such a situation of internal debate and dissension two factors again shaped Indian politics towards the late 1920s.
- The first was the effect of the worldwide economic depression. Agricultural prices began to fall from 1926 and collapsed after 1930.
- As the demand for agricultural goods fell and exports declined, peasants found it difficult to sell their harvests and pay their revenue.
- By 1930, the countryside was in turmoil.
- Against this background the new Tory government in Britain constituted a Statutory Commission under Sir John Simon.
- Set up in response to the nationalist movement, the commission was to look into the functioning of the constitutional system in India and suggest changes.
- The problem was that the commission did not have a single Indian member.
- They were all British. When the Simon Commission arrived in India in 1928, it was greeted with the slogan 'Go back Simon'. All parties, including the Congress and the Muslim League, participated in the demonstrations.
- In an effort to win them over, the viceroy, Lord Irwin, announced in October 1929, a vague offer of 'dominion status' for India in an unspecified future, and a Round Table Conference to discuss a future constitution.
- This did not satisfy the Congress leaders. The radicals within the Congress, led by Jawaharlal Nehru and Subhas Chandra Bose, became more assertive.
- The liberals and moderates, who were proposing a constitutional system within the framework of British dominion, gradually lost their influence.

- In December 1929, under the presidency of Jawaharlal Nehru, the Lahore Congress formalised the demand of 'Purna Swaraj' or full independence for India.
- It was declared that 26 January 1930, would be celebrated as the Independence Day when people were to take a pledge to struggle for complete independence.
- But the celebrations attracted very little attention. So Mahatma Gandhi had to find a way to relate this abstract idea of freedom to more concrete issues of everyday life.
- Mahatma Gandhi found in salt a powerful symbol that could unite the nation. On 31 January 1930, he sent a letter to Viceroy Irwin stating eleven demands.
- Some of these were of general interest; others were specific demands of different classes, from industrialists to peasants.
- The idea was to make the demands wide-ranging, so that all classes within Indian society could identify with them and everyone could be brought together in a united campaign.
- The most stirring of all was the demand to abolish the salt tax. Salt was something consumed by the rich and the poor alike, and it was one of the most essential items of food.
- The tax on salt and the government monopoly over its production, Mahatma Gandhi declared, revealed the most oppressive face of British rule.
- Mahatma Gandhi's letter was, in a way, an ultimatum.
- If the demands were not fulfilled by 11 March, the letter stated, the Congress would launch a civil disobedience campaign.
- Irwin was unwilling to negotiate. So Mahatma Gandhi started his famous salt march accompanied by 78 of his trusted volunteers. The march was over 240 miles, from Gandhiji's ashram in Sabarmati to the Gujarati coastal town of Dandi. The volunteers walked for 24 days, about 10 miles a day.
- Thousands came to hear Mahatma Gandhi wherever he stopped, and he told them what he meant by swaraj and urged them to peacefully defy the British.
- On 6 April he reached Dandi, and ceremonially violated the law, manufacturing salt by boiling sea water. This marked the beginning of the Civil Disobedience Movement.
- People were now asked not only to refuse cooperation with the British, as they had done in 1921-22, but also to break colonial laws.
- Thousands in different parts of the country broke the salt law, manufactured salt and demonstrated in front of government salt factories.
- As the movement spread, foreign cloth was boycotted, and liquor shops were picketed. Peasants refused to pay revenue and chaukidari taxes, village officials resigned, and in many places forest people violated forest laws going into Reserved Forests to collect wood and graze cattle.

Government of India Act of 1919

- The Government of India Act of 1919 (also known as the Montagu-Chelmsford Reforms) was a significant piece of legislation that aimed to introduce gradual reforms in the British administration of India.
- It was passed by the British Parliament and is often seen as a response to the growing demand for political reform and Indian self-governance.
- It laid the foundation for constitutional developments in India, though it fell short of fully satisfying the aspirations of the Indian nationalists.

Key Features of the Government of India Act of 1919

Dyarchy in Provinces

- One of the most notable features of the Act was the introduction of dyarchy in the provincial governments. Dyarchy meant the division of the executive into two categories:
- **Reserved subjects:** Controlled by the British government (*e.g.*, finance, law and order).
- **Transferred subjects:** Administered by Indian ministers responsible to the legislative councils (*e.g.*, education, health, local self-government).
- This system was introduced in provinces like Punjab, Bengal, and Madras, and was meant to create a system of shared responsibility between the British and Indian leaders.

Expansion of Legislative Councils

- The Act expanded the legislative councils at both the central and provincial levels:
- The Central Legislative Council was expanded to include 145 members (compared to the previous 56), with a certain number of Indian representatives.
- The Provincial Legislative Councils were also expanded and allowed a greater representation of Indians.

Introduction of Montagu-Chelmsford Reforms

- The reforms were named after the then Secretary of State for India, Edwin Montagu, and the then Viceroy of India, Lord Chelmsford, who outlined them.
- The Act recommended the idea of gradual self-governance for Indians, but did not grant full autonomy or control over key areas of governance.

Voting Rights

- Restricted franchise was introduced, where only those with a certain level of income or property could vote in elections. This meant that the Indian electorate remained limited in its representation, and the majority of Indians were excluded from the voting process.
- The idea was to encourage educated and wealthy Indians to participate in the political process.

Separate Representation for Minorities

- The Act introduced the concept of separate electorates for Muslims and other minorities, which was a significant departure from the previous electoral arrangements.
- This system was seen as a divisive measure that sought to create separate political identities along religious lines.

Viceroy's Executive Council

• The Act made provisions for a larger executive council at the centre, with some Indian representation. However, the Viceroy remained the ultimate authority, and the council's Indian members had limited power.

Public Service

• The Act allowed for a gradual increase in Indian representation in the civil services. However, senior positions continued to be dominated by the British, and Indians had limited opportunities in the higher echelons of the administration.

Fundamental Rights

• The Act did not provide for any significant guarantee of fundamental rights for Indian citizens, which continued to be one of the major demands of Indian nationalists.

Impact and Criticism

- The Government of India Act of 1919 was a step toward political reforms but was seen as insufficient by many Indian leaders, including Gandhi and Nehru. They believed that it failed to provide real power to the Indian people.
- The dyarchy system, in particular, was criticized for creating confusion and conflict between British and Indian ministers.
- It led to a lack of clear accountability and ineffective governance at the provincial level.
- The reforms fell short of granting full self-governance and were viewed by nationalists as inadequate, especially considering the sacrifices made during the First World War.
- Bengali leaders and Muslim leaders had divergent opinions on the Act, with the Muslim League seeing it as a step toward greater political recognition for Muslims, but many others considered it insufficient.

QUESTIONS

Fill in the Blank:

- **1.** In February 1922, Mahatma Gandhi decided to ______ the Non-Cooperation Movement due to the increasing violence in many places.
- 2. C. R. Das and Motilal Nehru formed the _____ Party within the Congress to argue for a return to council politics.
- **3.** The worldwide economic ______ began in the late 1920s, leading to a decline in agricultural prices and turmoil in the countryside by 1930
- **4.** The Simon Commission, set up in 1928, did not include a single _____ member, leading to widespread protests across India.
- **5.** Mahatma Gandhi sent a letter to Viceroy Irwin on 31 January 1930, stating ______ demands, some of which were aimed at different classes in Indian society.
- 6. The most stirring demand in Gandhi's letter was to abolish the ______ tax, which affected both the rich and the poor alike.
- 7. On 6 April 1930, Gandhi reached Dandi and ______ the salt law by manufacturing salt from sea water.
- 8. The Civil Disobedience Movement involved breaking _____ laws, with people defying British regulations such as the salt tax.
- **9.** The Government of India Act of 1919 introduced the concept of ______ in the provincial governments, dividing the executive into reserved and transferred subjects.
- **10.** The Act of 1919 created separate electorates for ______ and other minorities, which was a divisive measure aiming to create separate political identities.

9. Scientists are installing underwater telescopes to detect 'ghost particles

- Scientists are deploying two telescopes to detect high-energy neutrinos, also known as ghost particles, under the Mediterranean Sea.
- The two telescopes are part of the Cubic Kilometre Neutrino Telescope or KM3NeT.
- While one of the telescopes will study high-energy neutrinos from space, the other will examine neutrinos from the atmosphere.
- These telescopes are much like the IceCube Neutrino Observatory, which can detect high-energy neutrinos from deep space but is under the frozen ice in the Antarctic rather than being in the water.

What are neutrinos?

- Detected for the first time in 1959 though their existence was predicted almost three decades earlier, in 1931 neutrinos are tiny particles, very similar to electrons, but without any electric charge.
- They are one of the fundamental particles the universe is built of, and are the second most abundant subatomic particles after photons.
- Neutrinos are so numerous that about a billion of them pass through a cubic centimetre of space every second.

Why do scientists want to study high-energy neutrinos?

- Although neutrinos are everywhere, not each one of them is important to study.
- Scientists are interested in examining super-fast, high-energy neutrinos that have come from far, far away.
- Such neutrinos are rare and mostly originate from exotic events such as supernovae, gamma-ray bursts or colliding stars.
- Studying high-energy neutrinos can help astrophysicists investigate those space mechanisms and regions like the centre of our Milky Way Galaxy which are shrouded in dust.
- Dust absorbs and scatters the visible light from objects, making them difficult or impossible to observe with optical telescopes.

So why are scientists building underwater neutrino telescopes?

- High-energy neutrinos, however, are not just rare but also extremely difficult to detect.
- One reason is that neutrinos barely interact with anything despite billions of neutrinos around us, an average of only about one of them will interact with a person's body during a lifetime.
- Even the IceCube, which has been operational since 2011 and was the first telescope to detect highenergy neutrinos, has been able to only spot a handful of these messengers.
- To detect high-energy neutrinos, there is a need for a large volume of optically transparent material in a place where it is extremely dark.
- The location needs to be dark because the detectors look for flashes of Cherenkov radiation: light that neutrinos produce when they interact with a water or ice molecule.
- These flashes help scientists trace the path of that neutrino, giving them details about its source, the amount of energy it contains, and its origins.
- Although both frozen ice and deep sea waters provide conducive conditions for detecting high-energy neutrinos, experts suggest that underwater neutrino telescopes could be more efficient than IceCube.
- That is because water scatters light less, which gives a more accurate idea about where the detected neutrinos came from. The one disadvantage is that water absorbs light more and as a result, there will be less light to examine.

IceCube Neutrino Observatory

- The IceCube Neutrino Observatory is a large-scale research facility located at the South Pole.
- It is designed to detect high-energy neutrinos, a type of subatomic particle that is notoriously difficult to detect because it interacts only weakly with matter.
- The observatory is part of the international IceCube project and plays a crucial role in advancing our understanding of the universe, particularly in areas like astrophysics, particle physics, and cosmology.
- Location: Situated at the South Pole, the observatory utilizes the Antarctic ice sheet as a detector medium. The ice is transparent to neutrinos, allowing for efficient detection.
- **Structure:** IceCube consists of over 5,000 basketball-sized detectors, embedded in a cubic kilometer of ice at depths between 1,450 and 2,450 meters. These detectors are arranged in a three-dimensional grid across 86 vertical strings.
- **Neutrino Detection:** When a high-energy neutrino interacts with the ice, it produces secondary particles, such as muons. These particles travel faster than the speed of light in ice and emit Cherenkov radiation, which is detected by the IceCube sensors.
- **Purpose:** IceCube aims to detect and analyze neutrinos originating from extreme astrophysical sources, such as supernovae, gamma-ray bursts, and active galactic nuclei. The data collected helps scientists study phenomena like cosmic rays, black holes, and the fundamental properties of neutrinos.
- Scientific Impact: The observatory has contributed to many discoveries, including the detection of high-energy astrophysical neutrinos, which provided new insights into the universe's most energetic processes. It also helps answer long-standing questions about the nature of neutrinos, such as their mass.

QUESTIONS

Fill in the Blank:

- 1. Neutrinos are tiny particles, similar to _____, but without any electric charge.
- 2. The Cubic Kilometre Neutrino Telescope, or _____, is a project that involves two telescopes to detect high-energy neutrinos.
- 3. Scientists are particularly interested in studying high-energy neutrinos that originate from events like ______ and gamma-ray bursts.
- **4.** Neutrinos barely interact with anything, which makes them extremely ______ to detect.

10. Winter Char Dham

• The Uttarakhand government inaugurated the winter Char Dham circuit, aimed at drawing tourists to the state in the off-season winter months.

Winter seats of Char Dham

• Nestled in the Garhwal Himalayas in Uttarakhand, are four revered Hindu shrines or dhams — Gangotri, Yamunotri, Kedarnath, and Badrinath — collectively known as Char Dham.

- Each year, from May to November, lakhs of pilgrims visit these shrines. According to Government of Uttarakhand data, more than 48 lakh pilgrims and 5.4 lakh vehicles visited Char Dham this year, accounting for roughly 8.4 per cent of Uttarakhand's annual domestic tourist footfall.
- The Char Dham yatra (pilgrimage) thus drives the state's economy.
- But during the winter months, heavy snowfall leaves these shrines inaccessible, and their gates are shut.
- In fact, during the winter months, the presiding deities of these temples are brought to shrines at lower altitudes Mukhba in Uttarkashi is the winter seat of Gangotri Dham; Kharsali in Uttarkashi is the winter seat of Yamunotri Dham; Kedarnath's winter abode is the Omkareshwar Temple in Rudraprayag's Ukhimath; and Badrinath's is at Pandukeshwar in Chamoli.
- The winter Char Dham is aimed at drawing pilgrims to these shrines, and thus attract tourist footfall to Uttarakhand during off-season months.
- As of December 30, the shrines recorded a footfall of 15,314 pilgrims with the Omkareshwar Temple seeing the highest footfall of 6,482 pilgrims followed by Pandukeshwar (5,104 pilgrims), Mukhba (3,114 pilgrims), and Kharsali (614 pilgrims).

Uttarakhand government's hope

- According to the Uttarakhand tourism department, the Char Dham nets the state more than Rs 200 crore daily.
- However, the inflow during the winter season is yet to take off, although officials remain hopeful of more footfall as the yatra progresses this year.
- "Since Char Dham occupies most of the tourism prospects in the state, once the shrines close, people have a perception that winter is not an apt time to visit the state.
- However, with the launch of winter Char Dham, people can visit lesser-known destinations in the vicinity of the four winter abodes, as we have been seeing over the last few days.

Some concerns

- Ravi Chopra, the former chairman of the Supreme Court appointed High Powered Committee on the Char Dham project, said that during winter, rare and threatened animals on the high mountain slopes and crests come down for food and water.
- "In the final report of the HPC to the SC, we had specifically made a mention that the traffic during winters can cause disturbance for wildlife like snow leopard and mountain sheep as these are shy animals," Chopra said.
- In July last year, the National Green Tribunal asked the state government to ascertain the carrying capacity of the Char Dham, and the Uttarakhand Pollution Control Board tasked the Wildlife Institute of India with assessing it and submitting a report within a year.

Tourism Circuits in India

1. Golden Triangle Circuit

- Destinations: Delhi, Agra, Jaipur
- 2. Kerala Backwaters Circuit
 - Destinations: Kochi, Alleppey, Kumarakom, Kollam

3. Rajasthan Heritage Circuit

• Destinations: Udaipur, Jodhpur, Jaisalmer, Bikaner, Pushkar

4. Himalayan Circuit

• **Destinations:** Manali, Shimla, Dharamshala, Leh, Nainital, Mussoorie

5. North-East India Circuit

• **Destinations:** Sikkim, Assam, Arunachal Pradesh, Nagaland, Meghalaya

6. South India Temple Circuit

• **Destinations:** Madurai, Thanjavur, Kanchipuram, Rameswaram, Trichy

Char Dham

- The Char Dham refers to four sacred pilgrimage sites in the Indian state of Uttarakhand, which are highly revered by Hindus. The four sites are:
- Yamunotri The source of the Yamuna River, located in the western part of Uttarkashi district. It is dedicated to Goddess Yamuna, the sister of Yama, the god of death.
- Gangotri The origin of the Ganges River, situated in the Uttarkashi district. It is dedicated to Goddess Ganga, and it is believed to be the place where Lord Shiva released the Ganga from his hair.
- Kedarnath Located in the Kedarnath range of the Himalayas, this temple is dedicated to Lord Shiva. It is one of the 12 Jyotirlingas and one of the holiest temples in Hinduism.
- Badrinath Situated in the Chamoli district, this temple is dedicated to Lord Vishnu. It is one of the 108 Divya Desams, the holiest abodes of Lord Vishnu.
- Together, these four sites are known as Char Dham, which means "four abodes" in Sanskrit. Pilgrims from all over India and the world visit the Char Dham to seek blessings and to purify themselves spiritually. The Char Dham Yatra (pilgrimage) is often considered a life-changing experience, and it usually takes place between the months of May and November when the temples are open to the public, as they are closed during the winter months due to heavy snowfall.

QUESTIONS

Fill in the Blank:

- 1. The Char Dham circuit in Uttarakhand aims to attract tourists during the off-season winter months, known as the _____ Char Dham.
- 2. The four sacred shrines in the Char Dham circuit are located in the ______ Himalayas.
- 3. The Char Dham pilgrimage includes the shrines of Gangotri, Yamunotri, Kedarnath, and ______.
- **4.** During the winter months, the gates of the Char Dham shrines are shut due to ______ snowfall.
- 5. The presiding deities of the Char Dham shrines are brought to their ______ during the winter months.
- 6. The winter seat of Gangotri Dham is _____ in Uttarkashi.
- 7. According to the Uttarakhand tourism department, the Char Dham pilgrimage contributes more than Rs ______ crore daily to the state's economy.
- 8. The Omkareshwar Temple in ______ is the winter abode of Kedarnath.
- **9.** The Char Dham Yatra is a significant part of Uttarakhand's tourism, attracting more than _____ lakh pilgrims annually.
- **10.** The Char Dham pilgrimage in Uttarakhand has been a topic of concern regarding its impact on animals like snow leopards and mountain sheep.