

UPSC

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1. Andaman to get India's first coral reef research centre

1. Establishment of the National Coral Reef Research Institute (NCRRI)

- The government is set to establish the National Coral Reef Research Institute (NCRRI) in the Andaman and Nicobar Islands.
- With an allocation of Rs 120 crore, the institute will serve as:
- A nodal agency for coral reef research across India.
- A monitoring authority for reef health and conservation initiatives.
- This decision underlines the urgent need to understand coral ecosystems and threats such as coral bleaching.



2. Understanding Corals

2.1 What Are Corals?

- Corals are sessile marine organisms, meaning they remain permanently attached to the ocean floor.
- They capture food using small tentacle-like appendages, directing nutrients toward their mouth.
- Each coral individual is known as a polyp.
- Polyps live in large groups consisting of hundreds to thousands of genetically identical individuals called colonies.

2.2 Types of Corals

- **Corals are broadly classified into two categories:**
- **Hard corals (stony corals)**
 - These are the reef builders responsible for constructing complex three-dimensional structures over thousands of years.
 - Hard corals possess limestone (calcium carbonate) skeletons produced by the coral polyps.
 - When polyps die, their skeletons form a foundation for new coral growth, enabling reef expansion.
- **Soft corals**
 - Unlike hard corals, they lack stony skeletons and do not contribute significantly to reef formation.
 - They are more flexible, often resembling plants or trees underwater.

3. Coral Reefs and Their Characteristics

3.1 Ancient and Diverse Ecosystems

- Coral reefs are often referred to as the “rainforests of the sea” due to their exceptional biodiversity.
- These ecosystems have existed for nearly 450 million years, making them some of the oldest on Earth.
- The Great Barrier Reef (Australia) is the world’s largest reef system, extending over 2,028 kilometres and hosting unparalleled marine life.

3.2 Biodiversity Supported by Coral Reefs

- A single reef can support thousands of marine species.
- **Example:** The Great Barrier Reef contains:
 - 400+ coral species
 - 1,500 fish species
 - 4,000 mollusc species
- Six out of seven of the world’s sea turtle species
- Reefs act as habitats, nurseries, and feeding grounds for a vast range of marine organisms.

4. Significance of Coral Reefs

4.1 Ecological Importance

- Reefs support complex marine food webs and are essential for maintaining ecological balance in the oceans.
- They influence coastal biodiversity, contributing to the survival of fish, crustaceans, marine mammals, and microorganisms.

4.2 Economic Value

- Coral reefs generate commercial goods and ecosystem services worth approximately \$375 billion annually.
- Their economic contributions include:
 - **Fisheries:** Source of food and livelihood for millions.
 - **Tourism:** Major attraction for snorkelling, diving, and coastal recreation.
 - **Pharmaceutical potential:** Many marine organisms on reefs have medicinal properties.

4.3 Human Dependence and Coastal Protection

- Over 500 million people worldwide rely directly on reefs for:
 - Food security
 - Employment
 - Shoreline protection
- Coral reefs can absorb up to 97% of the energy from waves, storms, and floods, thereby:
 - Preventing coastal erosion
 - Reducing fatalities and property damage
 - Acting as natural barriers against climate-driven extreme weather events



5. Understanding Coral Bleaching

5.1 Global Bleaching Crisis

- According to the International Coral Reef Initiative (ICRI), as of April this year, 84% of the world's coral reef areas have been affected by severe, mass bleaching.
- Triggered by abnormally high ocean temperatures, this marks the fourth global bleaching event since 1998.
- The current event has surpassed the 2014–2017 bleaching period, which had already affected two-thirds of coral reefs globally.

5.2 Role of Zooxanthellae

- Most corals host zooxanthellae, plant-like algae that live within coral tissues.
- This relationship is mutualistic:
 - Corals provide the algae with shelter and nutrients.
 - Zooxanthellae provide oxygen and photosynthetic products, enabling coral growth and survival.
 - They also give corals their distinctive bright colours.



5.3 What Causes Bleaching?

- Corals are extremely sensitive to changes in light, temperature, and water quality.
- When stressed, corals expel the zooxanthellae, resulting in:
- Loss of colour → corals turn white
- Loss of nutrient supply
- This phenomenon is known as coral bleaching.

5.4 Impact and Recovery

- Bleaching does not immediately kill corals.
- However, prolonged stress can cause:
 - Reduced reproductive capacity
 - Higher vulnerability to diseases
 - Increased mortality
 - If the stress is temporary or mild, corals may recover by reabsorbing zooxanthellae.

QUESTIONS

- With reference to the **National Coral Reef Research Institute (NCRR)** proposed in India, consider the following statements:
 - It is to be established in the Andaman and Nicobar Islands.
 - It will function as a nodal agency for coral reef research across India.
 - It has been allocated more than Rs. 2000 crore in the Union Budget.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

2. With reference to **corals and coral reefs**, consider the following statements:

1. Corals are sessile marine organisms composed of individual units called polyps.
2. Hard corals possess calcium carbonate skeletons and are responsible for reef formation.
3. Soft corals play a major role in building coral reef structures.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

3. With reference to **coral reefs in India and globally**, consider the following statements:

1. India's coral reefs are found mainly in the Gulf of Kutch, Gulf of Mannar & Palk Bay, Lakshadweep Islands, and Andaman & Nicobar Islands.
2. Lakshadweep Islands represent India's only atoll reef system.
3. The Great Barrier Reef, off Australia's Queensland coast, is the world's largest coral reef system.

Which of the statements given above are correct?

A. 1 and 2 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

4. Consider the following statements regarding **coral reefs**:

1. Most of the world's coral reefs are located in tropical waters.
2. More than one-third of the world's coral reefs are found within the territories of Australia, Indonesia, and the Philippines.
3. Coral reefs support a greater number of animal phyla than tropical rainforests.

Which of the statements given above is/are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 3 only	D. 1, 2 and 3

5. Which of the following regions in India have **coral reefs**?

1. Andaman and Nicobar Islands	3. Gulf of Mannar
2. Gulf of Kachchh	4. Sunderbans

Select the correct answer using the code given below:

A. 1, 2 and 3 only	C. 1 and 3 only
B. 2 and 4 only	D. 1, 2, 3 and 4

6. “Biorock technology” is talked about in which one of the following situations?

- Restoration of damaged coral reefs
- Development of building materials using plant residues
- Identification of areas for exploration/extraction of shale gas
- Providing salt licks for wild animals in forests/protected areas

2. Why a new govt directive means your WhatsApp Web could soon log you out every 6 hours

1. What the New Directive Requires

- The Department of Telecommunications (DoT) has ordered apps like WhatsApp, Signal, Telegram, Snapchat, Sharechat, Arattai, JioChat, Josh to bind their services to the SIM card used during registration.
- Users will not be able to access these apps without the original SIM present in their device.
- Companion web versions (e.g., WhatsApp Web) must auto-logout every 6 hours.
- Companies have 90 days to implement SIM binding and 4 months to submit compliance.
- Apps will now need to access the SIM's IMSI (International Mobile Subscriber Identity) instead of relying only on OTP verification.



2. Legal and Regulatory Background

- Based on Telecommunication Cybersecurity Amendment Rules, 2025, notified in October.
- Introduced the concept of Telecommunication Identifier User Entity (TIUE) – entities using telecom identifiers (e.g., mobile numbers) for user identity.
- Messaging platforms fall under TIUE and hence must follow SIM linkage rules.

3. Government's Rationale

- Aims to curb cyber fraud, especially frauds originating from outside India using Indian numbers via apps without SIM presence.
- DoT says apps allowing use without SIM presence pose “telecom cybersecurity challenges”.

4. Impact on Users

- Travelers abroad will face difficulty since using messaging apps with local foreign SIMs may not work.
- Multi-device usage becomes difficult; users must keep the SIM active in their primary device.
- WhatsApp Web / desktop use will become inconvenient due to 6-hour periodic logouts.
- Professionals relying on long WhatsApp Web sessions will experience workflow disruptions.

5. Industry Reaction

Telecom Industry

- Earlier supported SIM binding, saying apps currently disconnect from the SIM after initial OTP only.
- Now raising concerns about user inconvenience during international travel and multi-device usage.

Tech Platforms and Experts

- **See the policy as:**
 - A privacy risk due to deeper SIM-based tracking.
 - A deterrent to user convenience and multi-device flexibility.
 - A rule requiring platforms like WhatsApp to re-engineer India-specific systems.

6. Questions and Limitations

- Fraudsters often use illegally procured SIMs (forged or mule identities), which SIM binding may not stop.
- Concerns that policy imposes extra friction without guaranteeing fraud reduction.
- India-specific SIM-binding requirements do not align with global practices.

Telecommunication Cyber Security (TCS) Amendment Rules, 2025

What's New Under the 2025 Amendment?

Creation of a Mobile Number Validation (MNV) Platform

- The law mandates the establishment of a centralized MNV platform by the government (or an authorized agency) to verify mobile numbers against verified telecom databases.
- This aims to prevent “mule accounts,” fake or fraudulent identities, and misuse — especially in financial, e-commerce, and other digital services that rely on mobile numbers.

Expansion of Regulatory Scope — Introduction of TIUEs

- **The rules define a new category:**
 - Telecommunication Identifier User Entities (TIUEs).
 - This includes any business that uses mobile numbers (or other telecom identifiers) to identify or authenticate users — such as fintech apps, e-commerce platforms, ride-hailing services, OTT platforms, messaging services, etc.
 - TIUEs are now subject to similar cybersecurity obligations and compliance requirements as licensed telecom operators.

Stricter Device (IMEI) Controls & Resale Regulations

- **The amendment targets sale/resale and second-hand markets:** before resale, any phone must have its International Mobile Equipment Identity (IMEI) number checked against a central database to ensure it is not blacklisted, tampered, or previously misused.
- Manufacturers are directed not to re-issue IMEIs already in use. This is aimed at curbing circulation of stolen, cloned or unauthorized devices.

Enhanced Cybersecurity & Oversight Obligations for TIUEs

- **TIUEs** — since they now fall under this regulatory framework — may need to adhere to security standards, possibly including data security, incident reporting, and compliance obligations similar to telecom operators.
- The government (or authorized agencies) are empowered to suspend or disconnect telecom identifiers in case of suspicious or fraudulent use — sometimes without prior notice — especially when there's a threat to public interest.

What's the Goal — Why These Changes Were Deemed Necessary

- With increasing use of mobile numbers, SIMs and device identifiers across not only telecom but banking, fintech, e-commerce, social media and other digital platforms — the risk of fraud, identity theft, mule accounts, and misuse has risen sharply.
- The amendments aim to restore traceability, accountability, and security — ensuring that mobile numbers/devices are legitimately tied to real people, making digital transactions more secure.
- The IMEI-tracking and resale device checks are intended to stop circulation of stolen/blacklisted devices, reducing device-related fraud.

Some Points of Concern / Wider Impacts

- Since many non-telecom digital services (e.g. fintech apps, ride-hailing, e-commerce, messaging, OTT platforms) now come under regulation via being TIUEs — this broad scope may impact how these services handle user verification, data sharing, authentication.
- For users buying second-hand phones: resale device scrubbing may make resale/resale of older phones more regulated.
- The rules involve more centralized verification and record-keeping by the government (MNV platform, device registration/blacklist), which raises questions about privacy, data handling, and user consent — especially given the wide scope of TIUEs.

QUESTIONS

7. With reference to the **new directive issued by the Department of Telecommunications (DoT)** regarding messaging applications, consider the following statements:

1. Messaging apps must be bound to the SIM card used at the time of user registration.
2. Companion web versions of messaging apps must automatically log out every 6 hours.
3. Apps will continue to rely solely on OTP-based verification for user authentication.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

8. With reference to the **Telecommunication Cybersecurity Amendment Rules, 2025**, consider the following statements:

1. The rules introduce the concept of Telecommunication Identifier User Entities (TIUEs).
2. Messaging platforms and fintech apps fall outside the scope of TIUEs.
3. TIUEs may be subjected to cybersecurity obligations similar to licensed telecom operators.

Which of the statements given above are correct?

A. 1 and 2 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

9. With reference to the **objectives and implications of the SIM-binding directive**, consider the following statements:

1. The directive aims to curb cyber fraud, especially frauds originating from outside India using Indian mobile numbers.
2. SIM binding is expected to completely eliminate frauds involving illegally procured or mule SIM cards.
3. The directive may create difficulties for international travellers and multi-device users.

Which of the statements given above are correct?

A. 1 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

10. In India, under **cyber insurance for individuals**, which of the following benefits are generally covered, **in addition to payment for the loss of funds and other benefits?**

1. Cost of restoration of the computer system in case of malware disrupting access to one's computer
2. Cost of a new computer if some miscreant wilfully damages it, if proved so
3. Cost of hiring a specialized consultant to minimize the loss in case of cyber extortion
4. Cost of defence in the Court of Law if any third party files a suit

Select the correct answer using the code given below:

A. 1, 2 and 4 only	C. 2 and 3 only
B. 1, 3 and 4 only	D. 1, 2, 3 and 4

3. Commonwealth Games 2030

- **Event:** XXIV Commonwealth Games (Amdavad 2030)
- **Location:** Ahmedabad, Gujarat, India
- **Date:** October 2030



Significance:

- Second time India hosts (first: Delhi 2010)
- Third edition hosted in Asia
- Centenary edition of the Commonwealth Games

Host Selection Process

Early Exploration & Deadlines

- Potential hosts explored bids starting 2021.
- Expression of Interest deadline: 31 March 2025
- Bid dossier deadline: 31 August 2025

Bidding Countries

- India and Nigeria submitted formal proposals by the deadline.

Evaluation & Election

- **15 October 2025:** Indian bid recommended by the Commonwealth Sport evaluation commission.
- **26 November 2025 (Glasgow):** Ahmedabad officially elected as host city during the Commonwealth Sport General Assembly.

Participation

- **Expected CGAs:** All 74 Commonwealth Games Associations anticipated to participate.

Sports Programme Changes (New Framework)

1. Compulsory Sports

- Athletics
- Swimming
- Plus their Para-sport versions
- **Note:** The traditional “Core Sports” category has been discontinued.

2. Host Selection Freedom

- Hosts may select from an approved list up to maximum 17 sports.
- Option to propose new or traditional sports that align with local interests.
- Confirmed Sports for Amdavad 2030

First Eight Confirmed Sports

- Athletics
- Swimming
- Table Tennis
- Bowls
- Weightlifting
- Para-sport equivalents for the above
- Artistic Gymnastics
- Netball
- Boxing

Optional Sports (7 to 9 to be chosen)

- **From the list of 15 optional sports:**
 - Archery
 - Badminton
 - 3x3 Basketball
 - Beach Volleyball
 - T20 Cricket
 - Cycling
 - Diving
 - Hockey
 - Judo
 - Rhythmic Gymnastics
 - Rugby Sevens
 - Shooting
 - Squash
 - Triathlon
 - Wrestling

Additional Host-Proposed Sports

- Up to two additional sports may be added
- Could include traditional Indian sports such as Kabaddi

Commonwealth Games

- The Commonwealth Games is a major international multi-sport event involving athletes from the Commonwealth of Nations—a group of countries, most of which were formerly part of the British Empire.

Key Facts

- **First held:** 1930 (as the British Empire Games)
- **Held every:** 4 years
- **Participants:** Over 70 nations and territories

- **Sports:** A mix of Olympic sports and uniquely Commonwealth sports (e.g., netball, lawn bowls)
- **Host country:** Rotates among Commonwealth nations

QUESTIONS

11. With reference to the **Commonwealth Games 2030**, consider the following statements:

1. India will host the Commonwealth Games for the second time in 2030.
2. The 2030 edition will be the centenary edition of the Commonwealth Games.
3. Ahmedabad was officially elected as the host city in November 2025.

Which of the statements given above are correct?

A. 1 and 2 only C. 2 and 3 only
B. 1 and 3 only D. 1, 2 and 3

12. With reference to the **sports programme framework** for Amdavad 2030, consider the following statements:

1. Athletics and Swimming, along with their para-sport versions, are compulsory sports.
2. The traditional “Core Sports” category has been retained under the new framework.
3. Host cities may select up to a maximum of 17 sports from an approved list.

Which of the statements given above are correct?

A. 1 and 2 only C. 2 and 3 only
B. 1 and 3 only D. 1, 2 and 3

13. With reference to **participation and host selection** for the Commonwealth Games 2030, consider the following statements:

1. All 74 Commonwealth Games Associations are expected to participate in the 2030 edition.
2. Both India and Nigeria submitted formal bids by the prescribed deadline.
3. Up to two additional sports, including traditional Indian sports, may be proposed by the host.

Which of the statements given above are correct?

A. 1 and 2 only C. 1 and 3 only
B. 2 and 3 only D. 1, 2 and 3

14. Consider the following statements with respect to the **first Kho Kho World Cup**:

1. The event was held in New Delhi, India.
2. Indian men beat Nepal with a score of 78–40 in the final to become the World Champion in the men’s category.
3. Indian women beat Nepal with a score of 54–36 in the final to become the World Champion in the women’s category.

Which of the statements given above is/are correct?

- A. 1 only
- C. 1 and 3 only
- B. 2 and 3 only
- D. 1, 2 and 3

15. Consider the following statements:

- 1. In the finals of the **45th Chess Olympiad (2024)**, **D Gukesh** became the world's youngest winner after defeating the Russian player **Ian Nepomniachtchi**.
- 2. **Abhimanyu Mishra**, an American chess player, holds the record of becoming the world's youngest-ever Grandmaster.

Which of the statements given above is/are correct?

- A. 1 only
- C. Both 1 and 2
- B. 2 only
- D. Neither 1 nor 2

4. Kerala-Based Names Approved for Martian Landforms

1. Major Milestone: Martian Crater Named 'Krishnan'

- A 3.5-billion-year-old crater on Mars has been officially named 'Krishnan Crater' after M.S. Krishnan, a pioneering Indian geologist.
- Approved by the International Astronomical Union (IAU).
- Krishnan was the first Indian Director of the Geological Survey of India and a foundational figure in Indian geology.

2. Kerala Names Find a Place on Mars

- The IAU also approved several Kerala-based names for smaller associated landforms:
 - Valiamala
 - Thumba
 - Bekal
 - Varkala
 - Periyar
- These are now used for smaller craters and a vallis (valley) around the Krishnan Crater.



3. Cultural and Scientific Significance of the Names

- **Valiamala:** Location of the Indian Institute of Space Science and Technology (IIST).
- **Thumba:** Birthplace of India's space programme in the 1960s.
- **Varkala:** Known for unique cliff formations; a potential Martian analogue site.

- **Bekal:** Named after the historic Bekal Fort in Kasaragod.
- **Periyar:** Kerala's longest river, now commemorated as 'Periyar Vallis' on Mars.

4. Official Designations within the Crater

- The plain inside the crater is named 'Krishnan Palus'.
- A channel passing through the plain is officially 'Periyar Vallis'.

5. Researchers behind the Naming Proposal

Asif Iqbal Kakkassery

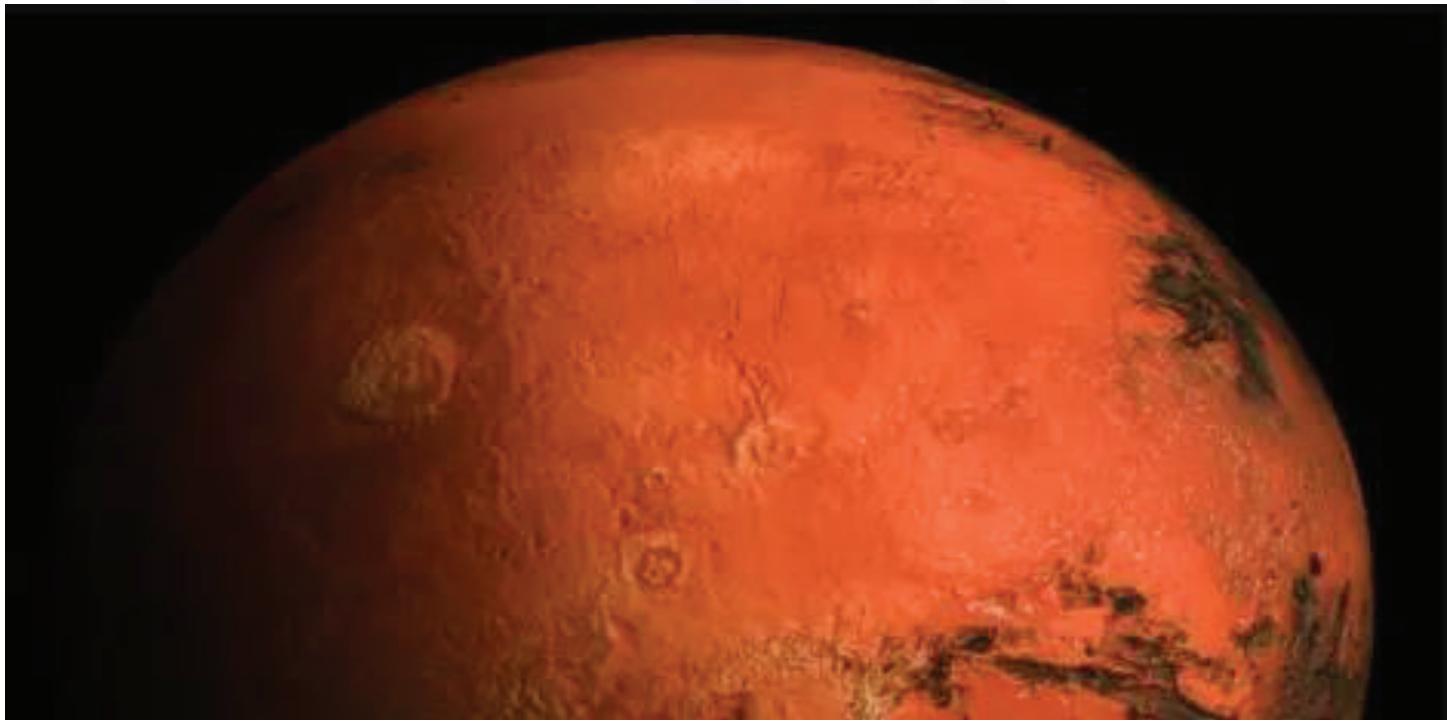
- Former IIST research scholar;
- Now Assistant Professor of Geology, Government College, Kasaragod.

Rajesh V.J.

- Department of Earth and Space Sciences, IIST.
- Their work is published in Meteoritics & Planetary Science.

6. Scientific Basis of Their Work

- The researchers identified ancient glacial and fluvial features on an unnamed crater in the Xanthe Terra region of Mars.
- The crater lies in a region where evidence of ancient glaciation is well established.
- Their findings justified naming the crater after Dr. M.S. Krishnan.



7. IAU Naming Guidelines Followed

- **Large craters:** Named after deceased scientists with major contributions to planetary science.
- **Smaller craters:** Named after towns/villages with population < 100,000, culturally significant and easy to pronounce.
- Kerala names initially faced pronunciation and compliance issues, but were later approved after persistent documentation and revision.

8. Duration and Challenges of the Project

- The research and naming process took six years, including disruptions during the COVID-19 pandemic.
- Many names were initially rejected but later accepted after repeated refinement.

Mars

- Mars is the fourth planet from the Sun.

Planet Mars

- **Nickname:** The Red Planet
- **Reason for the color:** Iron oxide (rust) on its surface
- **Size:** About half the size of Earth
- **Moons:** Phobos and Deimos
- **Atmosphere:** Thin, mostly carbon dioxide
- **Temperature:** Very cold—average around -63°C (-81°F)
- **Day length:** Close to Earth's—24.6 hours
- **Year length:** 687 Earth days

Why Mars is Important

- **Potential past water:** Evidence of ancient rivers, lakes, and possibly oceans
- **Astrobiology:** A prime candidate for past microbial life
- **Future exploration:** Space agencies hope to send humans there in coming decades

QUESTIONS

16. With reference to the **naming of Martian landforms approved by the International Astronomical Union**, consider the following statements:

1. A 3.5-billion-year-old crater on Mars has been named after M. S. Krishnan.
2. The crater was named because M. S. Krishnan was India's first Director of the Geological Survey of India.
3. The naming was approved based on evidence of ancient glacial and fluvial features in the region.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

17. With reference to **Kerala-based names used for Martian landforms**, consider the following statements:

1. Valiamala, Thumba, Bekal, Varkala and Periyar have been approved for smaller craters and valleys around Krishnan Crater.
2. 'Periyar Vallis' refers to a channel passing through the crater plain.
3. 'Krishnan Palus' is the official name given to the plain inside the crater.

Which of the statements given above are correct?

A. 1 and 2 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

5. Italy Makes Femicide a Distinct Crime

- Italian parliament unanimously passed a law defining femicide—the murder of a woman motivated by gender—as a distinct crime.
- The law carries an automatic life sentence for perpetrators.

- Approved on International Day for the Elimination of Violence Against Women, symbolizing commitment to gender-based violence prevention.

Triggering Event: Giulia Cecchettin's Murder

- Giulia Cecchettin, 22, was murdered by her ex-boyfriend, Filippo Turetta, in November 2023.
- Her murder shocked Italy and spurred national debate on gender violence.
- Giulia's sister, Elena Cecchettin, highlighted that perpetrators are often products of a patriarchal society, not monsters.

Legislative Details

- Introduced by Prime Minister Giorgia Meloni and supported by both ruling and opposition parties.
- Italy joins Cyprus, Malta, and Croatia in legally defining femicide in EU law.
- Femicide covers murders motivated by:**
 - Hatred, discrimination, domination, control, or subjugation of women.
 - Acts to punish women for leaving relationships or limiting their freedom.
- Purpose:** to recognize, study, and document femicide, distinguishing it from other murders.



Importance and Social Context

- Judge Paola di Nicola, one of the law's authors, emphasized the need to challenge cultural myths about "jealousy" or "exasperated love" as motives.
- The law addresses power and hierarchy as root causes.
- Police data:** 116 women killed in Italy last year; 106 motivated by gender.
- Creates visibility and societal recognition of gender-based murders.

Education and Prevention Efforts

- Giulia's father, Gino Cecchettin, founded a foundation for prevention and awareness.
 - Focus on emotional and sexual education for young people to prevent future violence.
 - Challenges include resistance from far-right MPs to mandatory early education programs.

The Global Gender Gap Index 2025 Rankings

WORLD
ECONOMIC
FORUM



● Europe ● Eastern Asia and the Pacific ● Sub-Saharan Africa

Source: World Economic Forum. (2025). *Global Gender Gap Report 2025*.

Criticism and Challenges

Critics argue:

- The law's definition of femicide may be too vague for legal enforcement.
- Proving gender motive is difficult, as most murders involve current or former partners.
- Law alone may be symbolic without broader efforts addressing economic and social gender inequality.
- Italy ranks 85th in the Global Gender Gap Index, indicating significant inequality challenges.

Cultural and Societal Awareness

- Museum of the Patriarchy in Rome highlights gender-based violence and inequality.
- Activists argue prevention requires addressing root societal inequalities, not just punishing extreme outcomes.
- Law approval signals a national political consensus to confront violence against women and start public dialogue.

What is the Global Gender Gap Index

- The Global Gender Gap Index was launched in 2006 by the World Economic Forum (WEF).
- Its aim is to assess how well countries are dividing resources and opportunities between men and women, regardless of absolute levels of resources.
- The Index (or “report”) provides a framework to compare gender equality across countries — showing which countries are doing relatively well, which have large gaps, and in what aspects (economy, health, politics, etc.)

What the Index Measures — Its Four Key Dimensions

- The Global Gender Gap Index evaluates gender parity in four major areas:
 - **Economic Participation & Opportunity** — measures gender gaps in labour-force participation, pay, senior positions, earned income, etc.
 - **Educational Attainment** — measures parity in access to education, literacy, enrolment across levels, etc.
 - **Health & Survival** — includes indicators like sex ratio at birth, healthy life expectancy, survival rates, etc.
 - **Political Empowerment** — measures representation of women in political leadership: parliament seats, ministerial roles, etc.
 - **Scores in each dimension** — and an overall aggregated score — show how close a country is to “gender parity.” A score of 1 (or 100%) would mean full parity (no gap).

Global Situation (2025)

- According to the 2025 report, the global gender gap is 68.8% closed — i.e. globally, about 68.8% of the gap between men's and women's opportunities has been eliminated.
- That means there is still a gap of ~31.2% — a long way from parity.
- The report notes that no country in the world has achieved full gender parity yet.
- Among the four dimensions globally, Economic Participation & Opportunity remains one of the biggest gaps to bridge.

Where India Stands (2025)

According to the 2025 edition

- India ranks 131 out of 148 countries.
- Its overall gender parity score is roughly 64.4% (or 64.1% in some sources) — below the global average.

Education & Health

- India does relatively well — Educational Attainment in particular shows strong parity (e.g. nearly equal literacy/enrolment rates), and Health & Survival shows improvement.

Economic Participation & Opportunity

- Still a major weak point. India's subindex score here is ~40.7%, with earned - income parity only ~29.9%.
- Labour-force participation remains low compared to parity (45.9%).

Political Empowerment

- This is the worst-performing dimension for India — female representation in parliament and ministerial positions remains very low, and in 2025 it declined further.
- Thus — while India has made progress in education and health parity — there remains a significant overall gender gap, especially when it comes to economic opportunity and political representation.

Why It Matters — and What It Signals

- The Index provides a clear, comparable measure to see which countries are making progress and where — helping shape policy, highlight gaps, and guide social change.
- For countries like India, the 2025 results show that structural gaps remain, particularly in workforce participation, income equality, and representation. Those need focused policy attention if gender parity is to improve.

QUESTIONS

21. With reference to **Italy's new law on femicide**, consider the following statements:

1. Italy has legally defined femicide as the murder of a woman motivated by gender.
2. The law mandates an automatic life sentence for perpetrators.
3. Italy is the first country in the European Union to define femicide as a distinct crime.
4. The law was approved on the International Day for the Elimination of Violence Against Women.

How many of the above statements are correct?

A. Only one	C. Only three
B. Only two	D. All the four

22. With reference to the **Global Gender Gap Index**, consider the following statements:

1. The Global Gender Gap Index was launched by the World Economic Forum in 2006.
2. The Index measures absolute levels of income, education, and health across countries.
3. A score of 1 (or 100%) in the Index indicates full gender parity.
4. Economic Participation & Opportunity is one of the four dimensions assessed by the Index.

How many of the above statements are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All the four

23. With reference to **India's performance in the Global Gender Gap Index 2025**, consider the following statements:

1. India ranks 131 out of 148 countries in the 2025 Index.
2. India's overall gender parity score is higher than the global average.
3. Political Empowerment is India's weakest-performing dimension in the Index.
4. India performs relatively better in Educational Attainment and Health & Survival compared to Economic Participation.

How many of the above statements are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All the four

24. Which of the following gives the **Global Gender Gap Index** ranking to the countries of the world?

- A. World Economic Forum
- B. Human Rights Council
- C. UN Women
- D. World Health Organization

25. Which of the following gives 'Global Gender Gap Index' ranking to the countries of the world?

- A. World Economic Forum
- B. UN Human Rights Council
- C. UN Women
- D. UNESCO

6. India Undertakes Operation Sagar Bandhu for Emergency HADR Assistance to Sri Lanka following Cyclone Ditwah

Launch of Operation Sagar Bandhu:

- India initiated a major Search & Rescue and Humanitarian Assistance & Disaster Relief (HADR) mission to support Sri Lanka after Cyclone Ditwah caused severe flooding, casualties, and massive disruption.

Immediate Relief Supplies Delivered (Total: 53 tons):

- 9.5 tons of emergency rations from two Indian Navy ships in Colombo.
- 31.5 tons of relief material airlifted by three Indian Air Force (IAF) aircraft, including tents, tarpaulins, blankets, hygiene kits, ready-to-eat food, medicines, surgical supplies, two BHISHM cubes, and a 5-member medical team for on-site assistance.
- 80-member NDRF Urban Search & Rescue (USAR) team deployed to assist operations.
- Additional 12 tons of relief supplies sent aboard INS Sukanya.



Extensive Rescue Operations

- Coordinated missions with the Sri Lanka Air Force using Chetak helicopters from INS Vikrant and IAF MI-17 helicopters.
- Evacuated stranded people, including pregnant women, infants, injured individuals, and foreign nationals from 11 countries.

Evacuation of Indian Nationals

- Special IAF and commercial flights organized to bring home stranded Indians.
- Over 2000 Indian nationals safely evacuated.

India's Continued Commitment

- Efforts guided by India's Neighbourhood First policy and Vision MAHASAGAR.
- India reaffirms its role as the First Responder in the region.
- Ongoing support pledged for rescue, relief, and early recovery in Sri Lanka.

Cyclone Ditwah

- Cyclone Ditwah formed from a low-pressure area over the southwest Bay of Bengal / southeast of Sri Lanka around 26 November 2025.
- The name "Ditwah" was contributed by Yemen; it refers to the "Detwah Lagoon" on Socotra Island.
- The system intensified into a "cyclonic storm" — with sustained winds reaching ~ 65 km/h (gusts up to 90–100 km/h) at peak.

Where and When It Hit

- The cyclone first impacted Sri Lanka — moving across the island while at cyclonic-storm intensity.
- After crossing Sri Lanka, Ditwah entered the Bay of Bengal (around November 29) and tracked north-northwest, running roughly parallel to the Coasts of Tamil Nadu / Puducherry / southern Andhra Pradesh.
- The system weakened over the Bay — from cyclonic storm → deep depression → depression — by around December 2.

Impact & Damage

In India (South coast: Tamil Nadu / Puducherry / Andhra etc.)

- As Ditwah approached, authorities issued alerts (yellow / orange / red depending on area), warning of heavy rain, strong winds, rough seas.

Preventive steps:

- Flights were cancelled, schools & colleges shut (in parts of Tamil Nadu and Puducherry), and disaster-relief teams were readied.

Expected/Observed impacts:

- Flooding of low-lying areas, damage to huts/houses and agricultural fields, danger for fishermen due to rough seas, strong wind damaging infrastructure or vegetation.

India's Neighbourhood First Policy

- Neighbourhood First is a key pillar of India's foreign policy that prioritizes constructive engagement, stability, and prosperity in the South Asian region.
- It aims to strengthen relations with India's immediate neighbours through political, economic, security, and cultural cooperation.

Objectives

- Promote regional stability and security
- Strengthen cooperation against terrorism, extremism, and cross-border crime.

Enhance economic integration

- Improve trade, investment, connectivity, and energy cooperation.

Build goodwill through development partnerships

- Provide lines of credit, grants, capacity building, and humanitarian assistance.

Strengthen people-to-people ties

- Cultural links, educational exchanges, and tourism.

Counter external influence in the region

- Maintain India's traditional leadership role in South Asia.

Key Instruments of the Policy

1. Connectivity Projects

- BBIN (Bangladesh-Bhutan-India-Nepal) Motor Vehicle Agreement
- India-Nepal cross-border railways
- India-Bangladesh inland waterways
- Kaladan Multimodal Transit Project (with Myanmar)
- Chabahar Port access for Afghanistan and Central Asia (via Iran)

2. Development Assistance

- Lines of credit to Nepal, Bhutan, Bangladesh, Sri Lanka, Maldives, and Myanmar
- Hydropower projects in Bhutan and Nepal
- Housing, infrastructure, and education projects in Sri Lanka and Maldives



3. Security Cooperation

- Joint military exercises (e.g., Mitra Shakti, Sampriti, Surya Kiran)
- Coastal surveillance radar systems in Maldives, Mauritius, Sri Lanka, and Seychelles
- Defense equipment supplies and capacity building

4. Humanitarian Assistance

- Operation Maitri (Nepal earthquake 2015)
- COVID-19 vaccine supplies (Vaccine Maitri)
- Disaster relief operations in Sri Lanka, Maldives, and others

Engagement with Specific Neighbours

Bangladesh

- Best phase of bilateral ties; border settlement (2015)
- Trade growth, energy cooperation, connectivity revival

Nepal

- Shared culture and open border
- Irritants: constitutional issues (2015), boundary disputes
- Recent efforts toward energy and connectivity enhancement

Bhutan

- Hydropower partnership is the pillar
- Long-standing friendly relations

Sri Lanka

- Support during economic crisis (2022)
- Infrastructure and energy cooperation

Maldives

- Defense cooperation, tourism links
- Recent strains due to political shifts (2023–24), but engagement continues

Myanmar

- Connectivity for Northeast India
- Security cooperation along border; challenges due to political instability

Afghanistan

- Development projects, humanitarian aid
- Engagement affected post-2021 Taliban takeover

QUESTIONS

30. La Niña is suspected to have caused recent floods in Australia. How is La Niña different from El Niño?

Consider the following statements:

1. La Niña is characterized by unusually cold ocean temperatures in the equatorial **Indian Ocean**, whereas El Niño is characterized by unusually warm ocean temperatures in the equatorial **Pacific Ocean**.
2. El Niño has an adverse effect on the south-west monsoon of India, but La Niña has no effect on the monsoon climate.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

7. Kerala masala bond probe

WHERE IS THE MASALA?

Masala bonds are rupee-denominated bonds through which Indian companies can raise money from foreign markets in rupee, and not in foreign currency.

The masala comes from the obviously wider investor base and the risk cover for foreign exchange risk.

IFC, the first issuer of such bonds named them 'Masala' bonds as 'masala' is a globally recognized term that evokes the culture and cuisine of India.



1. Background: What Triggered the Latest Row?

Enforcement Directorate (ED) issued show-cause notices to:

- Kerala Chief Minister Pinarayi Vijayan
- Former Finance Minister T.M. Thomas Isaac

- KIIFB CEO K.M. Abraham
- **Allegation:** Violation of FEMA and RBI directions in KIIFB's masala bond transactions.
- Comes just days before the 2025 local body elections, making it a politically charged issue.

2. What Is a Masala Bond?

- A rupee-denominated bond issued internationally.
- Designed to bring foreign investment in Indian rupees but reduce exchange-rate risk for the issuer.
- KIIFB issued such a bond in March 2019, raising Rs. 2,150 crore.
- Listed on London Stock Exchange and Singapore Stock Exchange.
- Government states the entire amount was fully repaid in March 2024.

3. ED's Allegations

- ED issued notices on November 12, 2025.
- Claims there was a Rs. 466.91 crore violation, involving:
- Using bond funds for land purchase, this was prohibited under FEMA/RBI conditions.
- Focus is on end-use of funds and compliance with FEMA and RBI rules.

4. Previous Audit and Regulatory Concerns

- CAG report (2019) questioned the validity of RBI's approval for the bond.
- Suggested it may violate the Constitution and invade Centre's authority.
- The controversy is tied to the larger issue of off-budget borrowing:
- Centre treats KIIFB borrowings as direct State liabilities.
- Kerala wants them treated as contingent liabilities.

5. Legal Developments

- In 2023, Kerala High Court asked ED to show verifiable information justifying ongoing investigations.
- Court noted that ED can conduct an inquiry but cannot engage in a "roving inquiry."

6. Political Angle

Opposition (UDF) Stand

- **Accuses KIIFB and the LDF government of:**
 - Corruption in issuing the masala bond.
 - Agreeing to an exorbitant interest rate of 9.723%.

LDF Government's Stand

- Claims the probe is politically motivated by the BJP-led Centre.

Maintains that:

- KIIFB followed all RBI guidelines and ECB norms.
- Bond was issued under RBI's approval route.
- **The interest rate was the best available:**
 - **Internal market:** 10.15%
 - **Andhra Pradesh masala bond:** 10.72%
 - CPI(M) alleges ED revives the issue before every election (2020, 2021, 2023, now 2025).

1. Foreign Exchange Regulation Act (FERA), 1973 – India

- The Foreign Exchange Regulation Act (FERA) of 1973 was an Indian law to regulate foreign exchange transactions to conserve foreign currency and manage the economy.
- It was a strict act that placed limitations on holding foreign exchange, mandated the surrender of foreign currency earnings, and required prior RBI approval for most foreign exchange dealings.
- FERA was replaced by the more liberal Foreign Exchange Management Act (FEMA) in 1999, which became effective in 2000.

2. Foreign Exchange Management Act (FEMA), 1999 – India

- This is the current Indian law regulating foreign exchange transactions. FEMA aims to:
 - Facilitate external trade and payments
 - Promote an orderly foreign exchange market
 - Regulate transactions involving foreign currency, foreign securities, and international payments
 - Specify rules for foreign investment, remittances, and export/import of currency
 - Compared to FERA, FEMA is more liberal as it allows more autonomy to the market



QUESTIONS

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

33. With reference to the **Foreign Exchange Regulation Act (FERA), 1973**, consider the following statements:

1. FERA aimed at conserving foreign exchange and regulating foreign currency transactions in India.
2. Under FERA, holding foreign exchange and dealing in it generally required prior approval of the Reserve Bank of India.
3. FERA adopted a liberal and facilitative approach towards foreign exchange management.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

34. With reference to the **Foreign Exchange Management Act (FEMA), 1999**, consider the following statements:

1. FEMA replaced FERA and came into effect in the year 2000.
2. FEMA focuses on facilitating external trade and promoting an orderly foreign exchange market.
3. Violations under FEMA are treated as criminal offences with imprisonment as the primary penalty.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

35. With reference to **IFC Masala Bonds**, sometimes seen in the news, consider the following statements:

1. The **International Finance Corporation**, which offers these bonds, is an arm of the **World Bank**.
2. They are **rupee-denominated bonds** and are a **source of debt financing** for both the public and private sectors.

Select the correct answer using the code given below:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

8. Africa heading for a continental breakup, researchers predict a future ocean basin in next 5 to 10 million years

1. Overview of the Continental Breakup

- Africa is slowly splitting into two separate landmasses due to tectonic forces.
- New magnetic data reveals persistent tearing of the Earth's crust beneath the continent.
- The entire process is extremely slow, expected to complete in 5–10 million years.

2. Resulting Future Landmasses

- **Western Africa (larger block):** Egypt, Algeria, Nigeria, Ghana, Namibia, and other nations.
- **Eastern Africa (smaller block):** Somalia, Kenya, Tanzania, Mozambique, and parts of Ethiopia.
- The separation will eventually form a new ocean basin.



3. Plate Tectonics Context

- Earth's continents continuously move due to shifting tectonic plates.
- Over millions of years, plates break apart and drift, creating new oceanic crust through seafloor spreading.
- Africa's current split fits into this long-term global pattern.

4. East African Rift: The Main Tectonic Zone

- A 4,000-mile rift system stretching from Jordan to Mozambique.
- Represents a zone where Earth's crust is weakening and pulling apart.
- Expected to cut through major lakes such as Lake Malawi and Lake Turkana as it deepens.

5. Afar Triple Junction: The Cradle of the Split

- Located where the Red Sea Rift, Gulf of Aden Rift, and Main Ethiopian Rift meet.
- Considered the earliest visible region of active continental breakup.
- Shows intense volcanic and seismic activity.

6. Insights from Reinterpreted Magnetic Data

- Researchers re-analysed magnetic data from 1968–1969 airborne surveys.
- Modern techniques revealed clear magnetic patterns from ancient geomagnetic field flips.
- These "magnetic barcodes" confirm past seafloor spreading between Africa and Arabia.
- Evidence points to steady, long-term rifting of the continental crust.

7. Rate and Timescale of the Rifting Process

- Crustal movement currently progresses at 5–16 mm per year in northern segments.
- Full separation and ocean formation will take several million years.
- Though slow, the process is continuous and geologically significant.

8. Key Scientific Implications

- The revived data from the Afar survey enriches understanding of early-stage continental breakup.
- Helps scientists refine models of rift evolution and future ocean development.
- Reinforces the concept that Earth's surface is constantly shifting, even if changes are invisible in human timescales.

Africa

- Africa is the world's second-largest and second-most-populous continent.
 - **Size:** ~30.3 million km² (including nearby islands)
 - **Population:** ~1.4+ billion people

- **Number of countries:** 54 internationally recognized sovereign states
- **Largest country (by area):** Algeria
- **Most populous country:** Nigeria
- **Major languages:** Arabic, Swahili, Hausa, Amharic, Yoruba, Zulu, English, French, and many more
- **Major religions:** Islam, Christianity, and numerous indigenous belief systems

Geography

- **Africa contains:**
 - Sahara Desert — world's largest hot desert
 - Nile River — one of the longest rivers on Earth
 - Mount Kilimanjaro — highest peak in Africa
 - Great Rift Valley — major geological formation
- Huge biodiversity including savannas, rainforests, deserts, and Mediterranean climates

Regions

- Africa is typically divided into:
 - North Africa
 - West Africa
 - East Africa
 - Central Africa
 - Southern Africa

Culture & History

- Origin of humankind—some of the oldest human fossils are from East Africa.
- Home to ancient civilizations such as Egypt, Nubia, Carthage, Aksum, and the Mali Empire.
- Extremely culturally diverse, with over 2,000 languages spoken across the continent.

QUESTIONS

36. With reference to the **future continental breakup of Africa**, consider the following statements:

1. Africa is gradually splitting into two landmasses due to long-term tectonic processes.
2. The breakup is expected to result in the formation of a new ocean basin over several million years.
3. The process is sudden in geological terms and likely to complete within a few thousand years.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

37. With reference to the **East African Rift System**, consider the following statements:

1. It is a major tectonic zone where the Earth's crust is thinning and pulling apart.
2. It extends roughly from Jordan in West Asia to Mozambique in Southern Africa.
3. It is expected to deepen and affect large lakes such as Lake Malawi and Lake Turkana.

Which of the statements given above are correct?

A. 1 and 2 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

38. With reference to the **Afar Triple Junction and supporting scientific evidence**, consider the following statements:

1. The Afar Triple Junction lies at the intersection of the Red Sea Rift, Gulf of Aden Rift, and Main Ethiopian Rift.
2. Magnetic “barcodes” derived from geomagnetic field reversals provide evidence of ancient seafloor spreading.
3. The rifting process in northern Africa is currently progressing at a rate of several centimetres per year.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

9. Sanchar Saathi app

1. Government Removes Mandatory Pre-Installation of Sanchar Saathi App

- In view of increasing acceptance of Sanchar Saathi app, the Government has decided not to make the pre-installation of this app mandatory for mobile manufacturers.
- The government also clarified that citizens can remove the app whenever they want and there is no other function other than protecting the users in the app.
- The Ministry of Communications stated that so far 1.4 crore users have downloaded this app and 2000 fraud incidents are being reported every day.
- The Ministry further informed that just in the last one day, 6 lakh citizens have registered for downloading the App which is a 10 times increase in its uptake.
- The Ministry also said that the app is secure and purely meant to help citizens from bad actors in the cyber world.

The banner features the 'Sanchar Saathi' logo with the text 'Digitally Enabled' and 'Digitally Enabled'. It includes the Indian flag and the text 'Ministry of Communications and Information Technology'. Below the logo, it says 'SANCHAR SAATHI MOBILE APP'. It shows download links for Google Play and the App Store, and a QR code. On the right, a smartphone displays the app's interface with various service icons. At the bottom, it says 'Web portal available at: www.sancharsaathi.gov.in'.



2. What is Sanchar Saathi?

- A citizen-centric initiative developed by the Department of Telecommunications (DoT).
- Available as both a mobile application and a website.

Aims to:

- Empower mobile subscribers
- Strengthen security
- Increase awareness of government telecom initiatives
- Includes an information section called “Keep Yourself Aware” for updates on security and telecom issues.

3. Key Services Offered by Sanchar Saathi

A. Chakshu – Report Suspected Fraud

- Allows users to report:
 - Impersonation attempts (DoT/TRAI/police/government officials)
 - Fraudulent investment/trading calls
 - Fake KYC, banking, electricity, gas, insurance messages
 - Phishing links, malicious APKs, device cloning attempts
 - Covers fraud delivered via calls, SMS, WhatsApp, RCS, iMessage, Telegram, etc.
 - Not a cybercrime reporting tool (users must use official cybercrime portals for that).
 - Also supports reporting of spam under TRAI's TCCCP 2018 regulations.

B. Check Mobile Connections in Your Name

- Helps users track all mobile numbers issued using their identity documents.

C. Block Lost or Stolen Mobile Phones

- Enables blocking and later unblocking of lost/stolen phones.
- Generates traceability if someone tries to use a blocked device.
- Works using the phone's IMEI number, enabling nationwide tracking.

4. Availability

- The app is available on both Google Play Store and Apple App Store.
- Can also be accessed via the Sanchar Saathi website.

IMEI number (International Mobile Equipment Identity)

- An IMEI number (International Mobile Equipment Identity) is a unique 15-digit identifier assigned to every mobile device with a cellular modem (phones, tablets, some modems).

It helps:

- Identify the device on a mobile network
- Block a stolen phone from being used
- Track warranty and device information.

QUESTIONS

39. With reference to the **Sanchar Saathi** initiative, consider the following statements:

1. Sanchar Saathi is a citizen-centric initiative developed by the Department of Telecommunications (DoT).
2. The Government has made pre-installation of the Sanchar Saathi app mandatory for all mobile phone manufacturers.
3. The app allows citizens to voluntarily remove it from their devices without any restriction.

Which of the statements given above are correct?

A. 1 and 2 only	C. 2 and 3 only
B. 1 and 3 only	D. 1, 2 and 3

40. With reference to the **features and services of the Sanchar Saathi app**, consider the following statements:

1. The “Chakshu” feature allows users to report suspected telecom-related fraud and impersonation attempts.
2. Sanchar Saathi acts as an official cybercrime reporting portal for registering FIRs related to online fraud.
3. The app enables blocking and tracking of lost or stolen mobile phones using the device’s IMEI number.

Which of the statements given above are correct?

A. 1 and 2 only	C. 1 and 3 only
B. 2 and 3 only	D. 1, 2 and 3

ANSWER KEY AND EXPLANATION

1. A 1 and 2 only

- Statements 1 and 2 are correct, as the institute is proposed in the Andaman and Nicobar Islands and will serve as a nodal agency and monitoring authority for coral reef research and conservation. Statement 3 is incorrect because the allocation mentioned is **₹120 crore**, not more than ₹2000 crore.

2. A 1 and 2 only

- Statements 1 and 2 are correct. Corals are sessile organisms made up of polyps, and hard corals with limestone skeletons are the primary reef builders. Statement 3 is incorrect because **soft corals lack stony skeletons and do not significantly contribute to reef formation**.

3. D 1, 2 and 3

- Statements 1, 2 and 3 are correct. India's coral reefs are concentrated in four major regions, and Lakshadweep is the only atoll group in the country. Statement 3 is also correct because the Great Barrier Reef, off Australia's Queensland coast, is the world's largest coral reef system.

4. D 1, 2 and 3

- **Statement 1 is correct.**

Coral reefs thrive in **warm, shallow, sunlit waters**, which are characteristic of tropical regions. Hence, the vast majority of the world's coral reefs are found between the Tropic of Cancer and the Tropic of Capricorn. It required a preferred temperature range of approximately 22° to 30° C. For the growth of coral, the depth of the water should not exceed 200m. Corals can live only in saline waters, and the average salinity should be between 27 to 40% for their proper growth.

- **Statement 2 is correct.**

A significant concentration of global coral reefs lies in the **Indo-Pacific region**, particularly within the maritime territories of **Australia, Indonesia, and the Philippines**. Collectively, these three countries account for **more than one-third of the world's coral reef area**, making the statement accurate.

- **Statement 3 is correct.**

Although tropical rainforests are renowned for their biodiversity, **coral reefs host a higher diversity of animal phyla**. This is why coral reefs are often referred to as the “**rainforests of the sea**”, reflecting their extraordinary biological richness at higher taxonomic levels. **Some scientists estimate that more than 25,000 described species from thirty-two of the world's thirty-three animal phyla live in reef habitats – four times the number of animal phyla found in tropical rain forests.**

5. A 1, 2 and 3 only

- **Statement 1: Andaman and Nicobar Islands — Correct**

The Andaman and Nicobar Islands host **extensive and diverse coral reefs**, including fringing and barrier reefs, owing to clear waters, suitable temperatures, and minimal sediment load.

- **Statement 2: Gulf of Kachchh — Correct**

The Gulf of Kachchh, located along the western coast of India, contains **patchy coral reefs**, mainly fringing reefs around islands and submerged platforms. Despite high salinity and tidal variations, corals are present.

○ **Statement 3: Gulf of Mannar — Correct**

The Gulf of Mannar is one of India's **richest coral reef regions**, supporting fringing reefs and high marine biodiversity, and is recognised as a UNESCO Biosphere Reserve.

○ **Statement 4: Sunderbans — Incorrect**

The Sunderbans is a **deltaic mangrove ecosystem** with high sedimentation, freshwater inflow, and turbid waters, which are **unsuitable for coral reef formation**. Hence, coral reefs are absent here.

6. A Restoration of damaged coral reefs

○ **Option (a) is correct.**

Biorock technology, also known as **mineral accretion technology**, is used for the **restoration of damaged coral reefs**. In this method, a low-voltage electric current is passed through submerged metal structures, causing minerals (mainly calcium carbonate) to accrete on them. This creates a solid substrate that **accelerates coral growth, enhances reef resilience, and aids ecosystem recovery**.

As noted, the **Zoological Survey of India**, in collaboration with Gujarat's forest department, implemented this technique by installing a biorock structure **off the Mithapur coast in the Gulf of Kachchh** to restore coral reefs.

7. A 1 and 2 only

- Statements 1 and 2 are correct: the directive mandates SIM binding and requires web versions like WhatsApp Web to auto-logout every 6 hours. Statement 3 is incorrect because apps are now required to access the SIM's **IMSI**, moving beyond OTP-only verification.

8. B 1 and 3 only

- **Statement 1 is correct:** TIUEs are newly defined under the 2025 amendment.
- **Statement 2 is incorrect:** messaging platforms, fintech apps, OTT platforms, and e-commerce services **are explicitly included** as TIUEs.
- **Statement 3 is correct:** TIUEs are subject to enhanced cybersecurity and compliance obligations similar to telecom operators.

9. B 1 and 3 only

- **Statement 1 is correct:** the government's stated rationale is to address telecom cybersecurity challenges and cross-border fraud.
- **Statement 2 is incorrect:** the material explicitly notes that fraudsters often use illegally procured or mule SIMs, which SIM binding may **not fully prevent**.
- **Statement 3 is correct:** the directive affects international travellers, multi-device usage, and long WhatsApp Web sessions.

10. B 1, 3 and 4 only

○ **Statement 1 is correct.**

Individual cyber insurance policies in India commonly cover **system restoration costs**, including expenses incurred to regain access to a computer affected by malware, ransomware, or similar cyber incidents.

- **Statement 2 is incorrect.**

Cyber insurance generally **does not cover physical damage or replacement of hardware**, such as the cost of a new computer. Such losses fall under property or electronics insurance, not cyber insurance.

- **Statement 3 is correct.**

Many cyber insurance policies provide coverage for **professional fees**, including hiring **specialized cyber consultants or negotiators** to manage and minimize losses arising from cyber extortion or ransomware attacks.

- **Statement 4 is correct.**

Cyber insurance typically includes **legal liability coverage**, which covers the **cost of legal defence** if a third party files a lawsuit due to data breaches or cyber incidents involving the insured individual.

11. D 1, 2 and 3

- **Statement 1 is correct** because India previously hosted the Games in **Delhi 2010**, making 2030 the second time.
- **Statement 2 is correct** as the Games were first held in **1930**, making the 2030 edition the **centenary edition**.
- **Statement 3 is correct** since Ahmedabad was officially elected on **26 November 2025** during the Commonwealth Sport General Assembly in Glasgow.

12. B 1 and 3 only

- **Statement 1 is correct: Athletics and Swimming**, along with their para-sport equivalents, are compulsory.
- **Statement 2 is incorrect:** the “**Core Sports**” category **has been discontinued** under the new framework.
- **Statement 3 is correct:** host cities can select **up to 17 sports** from an approved list.

13. D 1, 2 and 3

- **Statement 1 is correct:** participation from **all 74 CGAs** is anticipated.
- **Statement 2 is correct:** **India and Nigeria** submitted formal proposals by the bid deadline.
- **Statement 3 is correct:** hosts may propose **up to two additional sports**, potentially including traditional Indian sports such as **Kabaddi**.

14. A 1 only

- **Statement 1 — Correct**

The inaugural Kho Kho World Cup was held in **New Delhi, India**, in January 2025. Hence, Statement 1 is correct.

- **Statement 2 — Incorrect**

The Indian **men’s team** did defeat Nepal in the final, but the **scoreline was 54–36**, not 78–40. Therefore, Statement 2 is incorrect.

- **Statement 3 — Incorrect**

The Indian **women’s team** won the final against Nepal with a score of **78–40**, not 54–36 as stated. Hence, Statement 3 is incorrect.

15. B 2 only

- **Statement I — Incorrect**

The **Chess Olympiad** is a **team tournament**, not an individual world championship final. The **45th Chess Olympiad (2024)** was held in **Budapest, Hungary**, and **D Gukesh** won his **second consecutive individual gold medal** there; he did **not** defeat Ian Nepomniachtchi in an Olympiad “final.”

Separately, Gukesh became the **youngest World Chess Champion** by defeating **Ding Liren** at the **2024 FIDE World Chess Championship** in Singapore—this is a different event.

- **Statement II — Correct**

Abhimanyu Mishra is the **youngest Grandmaster in history**, achieving the title at **12 years, 4 months, and 25 days**, surpassing the previous record held by **Sergey Karjakin**.

16. D 1, 2 and 3

- **Statement 1 is correct:** the crater is officially named **Krishnan Crater** and is about **3.5 billion years old**.
- **Statement 2 is correct:** M. S. Krishnan was the **first Indian Director of the Geological Survey of India** and a foundational geologist.
- **Statement 3 is correct:** the naming was scientifically justified due to **ancient glacial and fluvial evidence** in the Xanthe Terra region.

17. D 1, 2 and 3

- **Statement 1 is correct:** multiple **Kerala place names** were approved for smaller landforms.
- **Statement 2 is correct:** **Periyar Vallis** denotes a **channel (valley)** through the crater plain.
- **Statement 3 is correct:** the plain inside the crater is officially named **Krishnan Palus**.

18. A 1 and 2 only

- **Statement 1 is correct:** IAU rules require large craters to be named after **deceased scientists of major significance**.
- **Statement 2 is correct:** smaller craters may be named after **culturally significant towns/villages with population under 100,000**.
- **Statement 3 is incorrect:** several Kerala names were **initially rejected** due to pronunciation and compliance issues and were approved only after revisions over several years.

19. C 1 and 3 only

- **Statement 1 — Correct**

Mangalyaan is officially known as the **Mars Orbiter Mission (MOM)**. It was India's first interplanetary mission, launched on **5 November 2013** aboard **PSLV-C25**.

- **Statement 2 — Incorrect**

India was **not the second country** to place a spacecraft in Mars orbit. Before India, successful Mars missions had already been carried out by:

- **Roscosmos (USSR/Russia)**
- **NASA (USA)**
- **European Space Agency (ESA)**

Thus, India became the **fourth entity globally**, not the second.

- **Statement 3 — Correct**

India became the **only country in the world** to successfully place a spacecraft in Mars orbit **on its very first attempt**, when MOM entered Martian orbit in **September 2014**.

20. C Only three

- **Statement 1 is correct.**

Sojourner was the first successful Mars rover, landing on **4 July 1997** under the **Mars Pathfinder mission**, and demonstrated wheeled robotic exploration in the **Ares Vallis** region.

- **Statement 2 is correct.**

Curiosity is a **nuclear-powered rover** operating in **Gale Crater** and has confirmed that Mars once had conditions suitable for life.

- **Statement 3 is correct.**

Perseverance, which landed in **2021**, is collecting samples for future return to Earth and has successfully tested **oxygen production** from the Martian atmosphere.

- **Statement 4 is incorrect.**

The Ingenuity helicopter mission ended in 2024, so it is no longer operational.

21. C Only three

- **Statements 1, 2, and 4 are correct.** Italy has defined femicide as a distinct crime, prescribed an automatic life sentence, and approved the law on the International Day for the Elimination of Violence Against Women.
- **Statement 3 is incorrect** because **Italy joins Cyprus, Malta, and Croatia**, meaning it is **not the first** in the EU to do so.

22. C Only three

- **Statements 1, 3, and 4 are correct.** The Index was launched by WEF in 2006, a score of 1 denotes full parity, and Economic Participation & Opportunity is one of its four dimensions.
- **Statement 2 is incorrect** because the Index **measures gender gaps, not absolute levels** of resources.

23. C Only three

- **Statements 1, 3, and 4 are correct.** India ranks 131, Political Empowerment is its weakest dimension, and it performs relatively better in education and health than in economic participation.
- **Statement 2 is incorrect** because **India's overall score (~64.4%) is below the global average (~68.8%).**

24. A World Economic Forum

- The **Global Gender Gap Index** is published annually by the **World Economic Forum (WEF)**.
- It was launched in **2006** and ranks countries based on how well they have closed gender gaps in four key dimensions:
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival
 - Political Empowerment

- The Index focuses on **gender parity (relative gaps between men and women)** rather than absolute levels of development.

25. D UNESCO

- The Gender Parity Index (GPI) for education is primarily released by **UNESCO (United Nations Educational, Scientific and Cultural Organization)**, specifically by its Institute for Statistics (UIS), as a key indicator for monitoring Sustainable Development Goal 4 (SDG 4) on quality education, measuring gender equality in school enrollment.

26. D 1, 2 and 3

- **Statement 1 is correct:** Operation Sagar Bandhu was launched as a Search & Rescue and HADR mission following severe flooding caused by Cyclone Ditwah in Sri Lanka.
- **Statement 2 is correct:** The operation involved Indian Navy ships, IAF aircraft, and the deployment of an **80-member NDRF Urban Search & Rescue team**.
- **Statement 3 is correct:** Special IAF and commercial flights evacuated **over 2,000 Indian nationals** from Sri Lanka.

27. B 2 and 3 only

- **Statement 1 is incorrect:** Cyclone Ditwah formed from a low-pressure area over the **southwest Bay of Bengal / southeast of Sri Lanka** and first impacted **Sri Lanka**, not after originating in the Bay and then crossing it.
- **Statement 2 is correct:** The name “Ditwah” was contributed by **Yemen** and refers to the **Detwah Lagoon** on Socotra Island.
- **Statement 3 is correct:** After crossing Sri Lanka, the system moved into the Bay of Bengal, weakened progressively, and **did not make landfall on the Indian mainland**, instead running parallel to parts of the east coast.

28. C 2 only

- **Statement 1 — Incorrect**

Jet streams do **not** occur only in the Northern Hemisphere. They are present in **both the Northern and Southern Hemispheres**.

They are narrow bands of very strong winds located in the **upper troposphere**, driven by temperature gradients, the **Coriolis force**, and conservation of angular momentum.

- **Statement 2 — Correct**

Only some cyclones develop an eye.

- Many **extra-tropical cyclones** do not have a distinct eye.
- Even among tropical cyclones, only mature and well-developed storms usually have a clear eye.
- Rapidly intensifying cyclones may form very small “**pinhole eyes**,” while weaker systems may have none.

- **Statement 3 — Incorrect**

The temperature inside the eye of a **tropical cyclone** is **warmer, not colder**, than the surrounding areas.

This warming occurs due to **subsiding (descending) air**, and the release of latent heat is a key factor that **drives and maintains the cyclone**. Hence, saying it is 10°C lower is incorrect.

29. **B** Inter-Tropical Convergence Zone seldom occurs

- The **primary reason** for the absence of tropical cyclone formation in the **South Atlantic and South-Eastern Pacific** is the **lack of the Inter-Tropical Convergence Zone (ITCZ)** over these oceanic regions.
- **Why the ITCZ matters**
 - The ITCZ is a zone of **low pressure, strong convergence, and intense convection** near the equator.
- **It provides:**
 - **Synoptic-scale vorticity** (initial spin),
 - **Rising air and thunderstorm activity**, and
 - A favorable environment for cyclone genesis.
- In the South Atlantic and South-Eastern Pacific:
 - The ITCZ usually remains **at or north of the equator**, even during southern summer.
 - **It does not shift southward** over these ocean basins.
 - Without ITCZ-driven convergence and vorticity, **cyclone initiation becomes extremely difficult**.
- **Supporting factors (but not the primary reason)**
 - **Lower sea surface temperatures** than the ideal threshold (~27°C).
 - **High vertical wind shear**, which disrupts storm organization.
 - **Lack of tropical waves** and pre-existing low-pressure systems.

These factors reinforce the inhibition, but the **absence of ITCZ** is the **key controlling reason**.

30. **D** Neither 1 nor 2

- **Statement 1 — Incorrect**
 - **La Niña** is characterized by **unusually cold sea surface temperatures in the central and eastern equatorial Pacific Ocean**, not the Indian Ocean.
 - **El Niño** is characterized by **unusually warm sea surface temperatures in the equatorial Pacific Ocean**.
- Thus, the reference to the **Indian Ocean** in Statement 1 makes it incorrect.
- **Statement 2 — Incorrect**
 - **El Niño** generally has an **adverse effect on the Indian south-west monsoon**, often leading to weaker rainfall or drought conditions.
 - **La Niña does affect the monsoon climate** and is typically associated with a **stronger-than-normal monsoon**, often bringing above-average rainfall to India.
- Therefore, saying that La Niña has *no effect* on the monsoon is incorrect.

31. **B** 1 and 3 only

- **Statement 1 is correct:** Masala Bonds are issued overseas but denominated in Indian rupees.
- **Statement 2 is incorrect:** The **currency risk is borne by the investor**, not the issuer, which helps Indian entities manage exchange-rate risk.
- **Statement 3 is correct:** The **IFC**, part of the World Bank Group, issued the first Masala Bonds in **October 2013**.

32. A 1 and 2 only

- **Statement 1 is correct:** Investors from FATF-compliant countries, including individuals, institutions, and multilateral agencies, can invest.
- **Statement 2 is correct:** Permitted uses include infrastructure, affordable housing, refinancing rupee loans, and working capital.
- **Statement 3 is incorrect:** Use of funds for land purchase, stock market investment, or real estate speculation is prohibited, unless specifically approved by the government.

33. A 1 and 2 only

- **Statement 1 is correct:** FERA was enacted to conserve foreign exchange and regulate its use during a period of scarcity.
- **Statement 2 is correct:** FERA imposed strict controls, including mandatory RBI approval for most foreign exchange dealings and surrender of foreign currency earnings.
- **Statement 3 is incorrect:** FERA was stringent and enforcement-oriented, not liberal.

34. A 1 and 2 only

- **Statement 1 is correct:** FEMA replaced FERA and became operational in 2000.
- **Statement 2 is correct:** FEMA adopts a management-oriented and facilitative approach, focusing on trade, payments, and orderly forex markets.
- **Statement 3 is incorrect:** FEMA treats violations as civil offences, unlike FERA, which had criminal provisions.

35. C Both 1 and 2

○ **Statement 1 — Correct**

The International Finance Corporation (IFC) is a member of the **World Bank Group**. It focuses on private-sector development and was the **first issuer of Masala Bonds** in 2013 under its offshore rupee programme.

○ **Statement 2 — Correct**

Masala Bonds are **denominated in Indian rupees** but issued **outside India**, enabling Indian public and private entities to raise **debt financing** from foreign investors. The **currency risk is borne by investors**, not issuers.

36. A 1 and 2 only

- **Statement 1 is correct:** Africa is undergoing slow crustal tearing driven by plate tectonics.
- **Statement 2 is correct:** Continued rifting and seafloor spreading are expected to create a **new ocean basin** in the long term.
- **Statement 3 is incorrect:** The process is **extremely slow**, expected to take **5–10 million years**, not thousands.

37. D 1, 2 and 3

- **Statement 1 is correct:** The East African Rift represents an active zone of continental rifting.
- **Statement 2 is correct:** The rift system stretches for about **4,000 miles from Jordan to Mozambique**.
- **Statement 3 is correct:** As rifting continues, it is expected to cut through major lakes such as **Lake Malawi and Lake Turkana**.

38. A 1 and 2 only

- **Statement 1 is correct:** The **Afar Triple Junction** marks the meeting point of three major rift systems and is a key site of active continental breakup.
- **Statement 2 is correct:** Re-analysed magnetic data reveal patterns created by **geomagnetic reversals**, confirming past seafloor spreading between Africa and Arabia.
- **Statement 3 is incorrect:** Crustal movement occurs at **5–16 mm per year**, not several centimetres annually.

39. A 1 and 3 only

- **Statement 1 is correct:** Sanchar Saathi is developed by the **Department of Telecommunications (DoT)** as a citizen-centric telecom security initiative.
- **Statement 2 is incorrect:** The Government has **removed the requirement of mandatory pre-installation** of the app for mobile manufacturers.
- **Statement 3 is correct:** Citizens are free to **remove the app at any time**, and it has no function other than user protection.

40. C 1 and 3 only

- **Statement 1 is correct:** “Chakshu” allows reporting of impersonation, phishing links, fake KYC messages, malicious APKs, and similar telecom-related frauds.
- **Statement 2 is incorrect:** Sanchar Saathi is **not a cybercrime reporting portal**; users must use official cybercrime portals for that purpose.
- **Statement 3 is correct:** The app enables **blocking, unblocking, and traceability of lost or stolen phones using the IMEI number**.