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Monthly

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## PREFACE

Welcome to our monthly current affairs magazine! We are thrilled to provide you with the latest information and updates on the most important events that happened in our country and around the world in the month of April 2024. Our magazine is designed to help you prepare for competitive examinations like UPSC and other State PSC Exams, and we hope that you will find it informative, engaging, and useful.

In this magazine, you will find a wide range of topics covering current affairs, including politics, economics, sports, science and technology, and many more. Our team of writers and editors work hard to bring you the most accurate and up-to-date information, so you can stay informed and prepared for any competitive exam.

We understand that preparing for competitive exams can be a daunting task, but we are here to make it easier for you. Our magazine is designed to be easy to read and understand, with clear and concise articles that will help you stay on top of the latest news and events.

We believe that knowledge is power, and we are committed to helping you achieve your goals. Whether you are preparing for a government job, entrance exam, or any other competitive exam, our magazine will provide you with the information and insights you need to succeed.

Thank you for choosing our magazine, and we hope that you find it helpful and informative.



## ACKNOWLEDGMENTS

We extend our heartfelt gratitude and appreciation to the exceptional team of content developers who have played a pivotal role in shaping our UPSC Current Affairs Magazine. Your unwavering dedication, extensive research, and commitment to delivering high-quality content have been instrumental in making this publication a trusted resource for our readers.

Your relentless pursuit of current affairs, profound understanding of complex issues, and the ability to distil them into informative, concise, and engaging articles have set a benchmark in the field of competitive examination preparation.

We are proud to have a team that goes above and beyond, ensuring that our readers are well-informed and well-prepared for the UPSC examinations. Your exceptional contributions are the driving force behind our magazine's success.

Thank you for your hard work, expertise, and passion for delivering top-notch content. Your efforts have not only enriched our magazine but have also played a significant role in the educational journey of countless aspiring civil servants.

We look forward to continuing this remarkable journey of knowledge dissemination with your continued support and excellence.

With deep appreciation,

**EKAM IAS ACADEMY**



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## POLITY

<b>I. RIGHTS ISSUES</b> .....	<b>1</b>
1. LGBTQIA+ Rights in India: The Road Ahead .....	1
<b>II. JUDICIARY</b> .....	<b>2</b>
2. Contempt of Court .....	2
3. Should Judges accept official posts after retirement? .....	2
<b>III. INSTITUTIONS</b> .....	<b>3</b>
4. ED can summon anyone for 'any information': SC.....	3
5. National Medical Commission .....	4
<b>IV. ELECTIONS AND RPA</b> .....	<b>5</b>
6. Voter Verifiable Paper Audit Trail .....	5
<b>V. POLICIES/SCHEMES/ACTS/REPORTS/COMMITTEES IN NEWS</b> .....	<b>5</b>
7. Food Waste Index Report 2024.....	5
<b>VI. PRELIMS POINTERS IN NEWS</b> .....	<b>6</b>
8. Zero FIR .....	6
9. Khula Practice by Muslim Women .....	6
10. World Anti-Doping Agency .....	7
11. National Career Service Portal .....	7
12. Rashtriya Arogya Nidhi (RAN) Scheme .....	8
13. Indelible Ink .....	8
<b>VII. ARTICLE: ELECTION COMMISSION OF INDIA</b> .....	<b>9</b>

## INTERNATIONAL RELATIONS

<b>I. INDIA AND ITS NEIGHBORHOOD</b> ....	<b>11</b>
1. Katchatheevu Island Dispute .....	11
2. India and Mauritius signs Protocol amending double-tax treaty .....	11
<b>II. AGREEMENTS INVOLVING INDIA AND/OR AFFECTING INDIA'S INTERESTS.</b> .....	<b>12</b>
3. India Expands Antarctic Postal Network .....	12

<b>III. GLOBAL ISSUES</b> .....	<b>13</b>
4. India's Growing Involvement in the South China Sea Disputes .....	13
5. NASA Embraces Sweden as Newest Member of Artemis Accords Family .....	14
<b>IV. PRELIMS POINTERS IN NEWS</b> .....	<b>14</b>
6. Nagorno-Karabakh Conflict .....	14
7. Schengen Visa .....	15
<b>V. ARTICLE: IRAN-ISRAEL CONFLICT</b> ....	<b>16</b>

## ECONOMY

<b>I. EMPLOYMENT ISSUES</b> .....	<b>18</b>
1. Turning the spotlight on the urban poor .....	18
<b>II. BANKING AND FINANCIAL INTERMEDIARIES</b> .....	<b>18</b>
2. Why has India Allowed FII's to Invest in Its Green Bonds?.....	18
3. Multilateral Development Banks .....	19
<b>III. AGRICULTURE AND ALLIED</b> .....	<b>20</b>
4. CDP-SURAKSHA, govt's new digital platform to disburse subsidies to horticulture farmers .....	20
5. A bitter sweet story .....	21
<b>IV. FINANCIAL MARKETS</b> .....	<b>22</b>
6. RBI delays regulations on exchange-traded currency derivatives .....	22
<b>V. TRADE AND EXTERNAL SECTOR</b> .....	<b>22</b>
7. India's Defence exports grow 32.5% on year to touch record high .....	22
<b>VI. PRELIMS POINTERS IN NEWS</b> .....	<b>23</b>
8. Financial Services Institutions Bureau (FSIB).....	23
9. Bitcoin Halving .....	23
10. Imported Inflation .....	24
<b>VII. ARTICLE: CURRENT TRENDS OF INDIA'S IMPORTS OF PULSES</b> .....	<b>23</b>



## GEOGRAPHY

<b>I. GEOLOGICAL PHENOMENON</b> .....	<b>27</b>
1. Afar Triangle .....	27
2. Glacial Lake Outburst Floods .....	27
3. Mount Erebus .....	28
4. Ringwoodite .....	28
<b>II. PRELIMS POINTERS IN NEWS</b> .....	<b>28</b>
5. Atal Tunnel .....	28
6. Leap Seconds .....	29
7. Swell Waves .....	29
8. Torrential Rain .....	30

## HISTORY

<b>I. ANCIENT HISTORY</b> .....	<b>31</b>
1. Six new sites from Madhya Pradesh were added to tentative UNESCO list of world heritage sites .....	31
2. Iron Age .....	32
<b>II. PRELIMS POINTERS IN NEWS</b> .....	<b>32</b>
3. Lalit Kala Akademi.....	32
4. Sannati Buddhist Site .....	33
5. 900-Year-Old Chalukyan Inscription Discovered .....	33
6. Pompeii.....	34

## ENVIRONMENT

<b>I. BIODIVERSITY AND CONSERVATION</b>	<b>35</b>
1. Corals .....	35
2. Tundra Ecosystems .....	35
<b>II. RENEWABLE ENERGY</b> .....	<b>36</b>
3. Bridge Fuel.....	36
4. India's first small-scale liquefied natural gas (SSLNG) unit at GAIL .....	36
5. Solar Surge.....	37
<b>III. FOREST COSERVATION</b> .....	<b>38</b>
6. Forests a National Asset and Major Contributor to Financial Wealth: SC...38	

7. Global Forest Watch .....	39
<b>IV. DISASTERS</b> .....	<b>39</b>
8. What's Behind Heavy Rainfall in Dubai .....	39
<b>V. PRELIMS POINTERS IN NEWS</b> .....	<b>40</b>
9. Indian Laurel Tree .....	41
10. Purple-Striped Jellyfish .....	41
11. Kerogen .....	41
12. Bumblebees .....	41
13. Hydrogel .....	41
14. Vasuki Indicus .....	42
15. Ashwagandha .....	42
16. Soil Acidification .....	43
<b>VI. ARTICLE: INVASIVE ALIEN SPECIES (IAS)</b> .....	<b>44</b>

## SCIENCE AND TECHNOLOGY

<b>I. MEDICAL HEALTH / VACCINES / DISEASES</b> .....	<b>46</b>
1. Lumpy Skin Disease .....	46
2. Cholera Vaccine .....	46
<b>II. SPACE TECHNOLOGY</b> .....	<b>47</b>
3. Pratush telescope: India's leap into lunar radio astronomy .....	47
4. Pace Satellite .....	47
<b>III. EMERGING TECHNOLOGIES</b> .....	<b>48</b>
5. Hume AI .....	48
6. Meta Llama 3 .....	48
<b>IV. PRELIMS POINTERS IN NEWS</b> .....	<b>49</b>
7. White Dwarf .....	49
8. Gaia-BH3 .....	49
9. Doxing .....	50
10. Dragonfly Mission .....	50
11. Tachyons .....	51
<b>V. ARTICLE: INDIA TB REPORT 2024</b> .....	<b>52</b>



## SECURITY

- I. BORDER DISPUTES ..... 54**
  - 1. Arunachal an integral part of India: centre .....54
- II. PRELIMS POINTERS IN NEWS ..... 54**
  - 2. Agni-Prime Missile .....54
  - 3. Project Akashteer .....55
  - 4. Rampage .....55
  - 5. Exercise DUSTLIK .....56

## SOCIETY

- I. VULNERABLE SECTIONS OF THE SOCIETY ..... 57**
  - 1. PM-Suman Scheme .....57
  - 2. Centre Releases Curriculum Framework for Anganwadis.....57
- II. EDUCATION SECTOR ..... 57**
  - 3. Annual Status of Education Report (ASER) .....57
- III. ARTICLE: DOMESTIC VIOLENCE IN INDIA ..... 59**

## KNOW YOUR STATE

- I. AGRICULTURE IN TELANGANA..... 61**
- II. SOILS OF ANDHRA PRADESH ..... 69**

## PRELIMS QUESTIONS

- I. PRACTICE QUESTIONS: POLITY 2024 73**
  - 1. ANSWER KEY .....86
- II. CSAT GRAND TEST -1.....87**
  - 2. ANSWER KEY .....100





## POLITY

### I. RIGHTS ISSUES

#### 1. LGBTQIA+ RIGHTS IN INDIA: THE ROAD AHEAD

SOURCE: LIVELAW.in

Why in news?

The Supreme Court (SC) recently issued a warning to judges about using court-mandated counseling for LGBTQIA+ individuals.

The court emphasized the importance of respecting individuals' identities and sexual orientations and warned against using counseling to alter these aspects.

Status of LGBTQIA+ Rights and Recognition in India

Definition:

- LGBTQIA+ stands for lesbian, gay, bisexual, transgender, queer, intersex, and asexual.
- The "+" represents evolving identities, including non-binary and pansexual.



Historical Overview:

Colonial Era (Pre-1990s):

- Introduction of Section 377 in 1861 criminalized consensual "carnal intercourse against the order of nature."

Early Activism (1990s):

- First All-India Hijra Conference in 1981.
- AIDS Bhedbhav Virodhi Andolan (ABVA) published "Less Than Gay" in 1991, highlighting LGBTQIA+ issues.

Landmark Cases (2000s):

- Naz Foundation's PIL in 2001 challenged Section 377.
- Delhi High Court decriminalized consensual homosexual acts in 2009, later overturned by the Supreme Court in 2013.

Recent Advancements in LGBTQIA+ Rights in India (2010s-Present):

2014: Recognition of Third Gender

- The Supreme Court acknowledged transgender individuals as the "third gender" in the NALSA judgment.

2018: Decriminalization of Same-Sex Relationships

- Section 377 was struck down by the Supreme Court, decriminalizing consensual same-sex relationships in the Navtej Singh Johar case.

2019: Transgender Rights Protection

- The Transgender Persons (Protection of Rights) Act, 2019 was enacted, granting legal recognition, and preventing discrimination against transgender persons.

2020: Legal Protection for Same-Sex Relationships

- The Uttarakhand High Court extended legal protection to live-in relationships of same-sex couples.

2021: Right to Self-Identify Gender

- In Anjali Guru Sanjana Jaan v. State of Maharashtra & Ors., the Bombay High Court affirmed an individual's right to self-identify their gender, accepting the petitioner's application.

2022: Expanded Family Definition

- The Supreme Court broadened the definition of family to include same-sex couples and queer relationships.

Ongoing Struggles

2023: Same-Sex Marriage Petitions Rejected

- A five-judge Constitution Bench declined to legalize same-sex marriage, asserting that modifying the Special Marriage Act lies within Parliament and state legislatures' purview.

Challenges Faced by LGBTQIA+ Community in India

Social Stigma:

- Deep-seated societal prejudices result in discrimination, harassment, and violence.

Family Rejection:

- LGBTQIA+ individuals often face rejection and discrimination within families, leading to strained relationships and homelessness.

Healthcare Access:

- Barriers to accessing LGBTQIA+-friendly healthcare services, discrimination from providers, and challenges in obtaining appropriate medical care.

Legal Recognition:

- Despite advancements, lack of legal protections for non-binary and gender non-conforming individuals persists.

Intersectional Challenges:

- Discrimination faced by LGBTQIA+ individuals from marginalized communities is compounded due to intersecting identities.

Manipulative Counseling:

- Conversion therapy and pathologizing LGBTQIA+ identities contribute to internalized stigma and distress.

Way Forward

Legal Reforms:



- Legislatures should enact laws recognizing LGBTQIA+ rights, building upon the 2023 SC judgment.
- Example:** Tamil Nadu's amendment to the Hindu Marriage Act allowing 'Suyamariyathai' marriages.

#### Economic Empowerment:

- Promote entrepreneurship within the LGBTQIA+ community by providing mentorship, funding, and resources.
- Encourage LGBTQIA+-friendly workplaces through certification programs.

#### Healthcare Access:

- Ensure access to LGBTQIA+-friendly healthcare services, including mental health support and gender-affirming care.
- Train healthcare providers in culturally competent care for LGBTQIA+ patients.

#### Sports Initiatives:

- Use sports to break stereotypes and foster community bonding.
- Establish sports leagues for LGBTQIA+ individuals to promote physical and mental well-being.

In conclusion, while there have been significant advancements in LGBTQIA+ rights and recognition in India, challenges persist.

**It's crucial to continue advocacy efforts, promote inclusivity, and work towards creating a more accepting and supportive society for all individuals, regardless of their sexual orientation or gender identity.**

#### MAINS QUESTION

Q. Discuss the constitutional framework of Gender Justice in India, incorporating relevant constitutional provisions and judicial decisions. (150 WORDS)

## II. JUDICIARY

### 2. CONTEMPT OF COURT

#### SOURCE: THE HINDU

##### Why in news?

The Allahabad High Court ruled that orders from the Central Administrative Tribunal (CAT) under the Contempt of Courts Act, 1971, are only appealable to the Supreme Court, not the High Court.

##### About Contempt of Court:

- The Contempt of Courts Act, 1971, defines contempt as either civil or criminal.
- Civil contempt** involves willful disobedience to a court's judgment, order, or direction or breaching an undertaking given to a court.
- Criminal contempt** includes actions or publications that scandalize, lower the authority of, or interfere with judicial proceedings or obstruct the administration of justice.

- The Act specifies **penalties for contempt**, including **imprisonment up to six months, a fine up to two thousand rupees, or both.**
- The court has the discretion to discharge the accused or remit the punishment upon a satisfactory apology.
- Article 129 of the Constitution designates the Supreme Court as a 'Court of Record,'** granting it powers to punish for contempt.
- Article 215 extends similar powers to High Courts,** enabling them to punish for contempt within their jurisdiction.
- The Act also outlines exceptions,** stating that fair and accurate reporting of judicial proceedings or fair criticism of a judicial order post its disposal does not amount to contempt.
- The distinction between civil and criminal contempt helps in categorizing and addressing different types of contempt's appropriately.**



The recent observation by the Allahabad High Court reinforces the hierarchical appellate structure concerning contempt orders, limiting appeals to the Supreme Court.

### 3. SHOULD JUDGES ACCEPT OFFICIAL POSTS AFTER RETIREMENT?

#### SOURCE: THE HINDU

##### Why in news?

The practice of retired judges accepting official posts post-retirement has stirred debate in India.

- Recent events, like a former judge joining a political party right after resigning from the judiciary, have sparked concerns about the impartiality and integrity of the judiciary.**
- This issue touches upon constitutional provisions, related cases, and varying arguments that both support and oppose such appointments.

##### Constitutional Provisions:

##### Article 124(7):

- Prohibits retired Supreme Court judges from practicing before any court or authority in India.
- Aims to maintain judiciary's independence and impartiality.

##### Article 128:

- Allows the Chief Justice of India to request a retired judge to act as a Supreme Court Judge with the President's consent.

## Article 220:

- Prevents High Court judges from pleading before any authority in India except the Supreme Court and other High Courts.

## Related Cases and Recommendations:

### Bombay Lawyers Association v. Union of India:

- Dismissed a PIL seeking a mandatory cooling-off period for retired judges before accepting post-retirement appointments.
- Stressed the importance of legislation to regulate such appointments.

### 14th Law Commission:

- Recommended against judges taking post-retirement jobs from the government.
- Suggested a cooling-off period after retirement.

### Arguments in Favour of Post-Retirement Appointments:

#### Utilization of Expertise:

- Judges offer valuable expertise that can aid in policymaking and governance.

#### Ensuring Integrity in Official Positions:

- Retired judges maintain high ethical standards, ensuring integrity in their roles.

#### Fulfilling Vacancies Requiring Specialized Knowledge:

- Retired judges possess deep insights into legal intricacies, filling crucial positions effectively.

#### Maintaining a Pool of Talent:

- Retaining the knowledge and skills of seasoned jurists benefits public service beyond their judicial tenure.

#### Arguments Against Post-Retirement Appointments:

##### Risk of Compromising Judicial Independence:

- Appointments may create perceptions of favoritism, undermining public trust in the judiciary.
- Emphasized in the Restatement of Values of Judicial Life.**

##### Potential for Conflict of Interest:

- Appointments might lead to conflicts, especially if decisions during tenure benefit the appointing authority.

##### Destabilizing the Judiciary:

- Viewed as a strategy to erode judiciary's independence by compromising its authority and integrity.

##### Conclusion:

While post-retirement appointments of judges can harness their expertise for public service, they also pose risks to the judiciary's independence and impartiality.

**The debate calls for balanced regulations to uphold judicial integrity while leveraging the expertise of retired jurists for governance.**

### MAINS QUESTION

Q. Discuss the implications of retired judges accepting official posts post-retirement on the judiciary's impartiality and integrity in India. (150 WORDS)

## III. INSTITUTIONS

### 4. ED CAN SUMMON ANYONE FOR 'ANY INFORMATION': SC

#### SOURCE: THE HINDU

##### Why in news?

The Supreme Court directed four Tamil Nadu District Collectors to personally appear before the Enforcement Directorate, criticizing them for ignoring the ED summons, stating they lacked respect for the law, court, and Constitution.

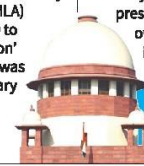
#### Sharp censure

SC reprimands District Collectors of Vellore, Ariyalur, Karur and Tiruchi in T.N. for not appearing before investigative agency

■ Bench states that Section 50(2) of Prevention of Money Laundering Act (PMLA) empowered the ED to summon 'any person' whose attendance was considered necessary for giving evidence or production of records

■ District Collectors express inability to compile data and present it to ED on time owing to poll work and implementation of welfare programmes

■ Bench refuses to accept argument; lists case for May 6



##### About Enforcement directorate:

- Established in 1956 as an 'Enforcement Unit' under the Department of Economic Affairs, renamed 'Enforcement Directorate' in 1957.
- Presently under the **administrative control of the Department of Revenue, which falls under the Ministry of Finance.**

##### Functions:

- Responsible for enforcing the provisions of the **Foreign Exchange Management Act, 1999 (FEMA), and segments of the Prevention of Money Laundering Act (PMLA).**
- Authorized to attach the assets of individuals found guilty of violating FEMA.
- Empowered to conduct various enforcement actions like **search, seizure, arrest, prosecution, and surveys against offenses committed under PMLA**

##### Director's Appointment:

- The appointment of the Director of ED is made by the **central government** upon the recommendation of a committee.
- This committee is **chaired by the Central Vigilance Commissioner** and includes members such as **Vigilance Commissioners, Home Secretary, Secretary of the Department of Personnel and Training (DOPT), and Revenue Secretary.**

##### Additional information:

##### FEMA (Foreign Exchange Management Act, 1999):

- It's a civil law aimed at consolidating and amending laws related to external trade and payments, and promoting the orderly



development of the foreign exchange market in India.

- ED investigates suspected contraventions of **foreign exchange laws**, adjudicates, and **imposes penalties** when violations are found.

#### **PMLA (Prevention of Money Laundering Act, 2002):**

- **Enacted after FATF recommendations**, PMLA aims to combat money laundering.
- **ED executes PMLA provisions by investigating crime-derived assets**, attaching property, and ensuring prosecution and confiscation through Special courts.

#### **FEOA (Fugitive Economic Offenders Act, 2018):**

- Introduced to tackle economic offenders evading Indian law by fleeing to foreign countries.
- ED enforces FEOA by attaching properties of fugitives, facilitating confiscation, and returning the proceeds to the Central Government.

#### **Issues related to enforcement directorate:**

##### **Misuse of Power:**

- ED's extensive powers in investigating economic crimes, such as money laundering, have led to concerns about misuse.
- **Minor crimes have been included under laws like PMLA**, originally meant for combating money laundering related to drug trafficking.

##### **Lack of Transparency:**

- **There's a lack of clarity in how the ED selects cases for investigation**, with allegations of targeting opposition parties.
- Despite rare convictions, media trials often damage the reputation of the accused.

##### **Low Conviction Rates:**

- **Between 2005 and 2013-14, there were zero convictions**, and from 2014-15 to 2021-22, only 23 cases out of 888 registered resulted in convictions.

##### **Political Bias:**

- **Allegations suggest that politicians favoring the ruling party receive favorable treatment from the ED.**
- Some have reportedly received "clean chits," and investigations into their economic offenses have slowed down, raising concerns about political bias and lack of independence.

## **5. NATIONAL MEDICAL COMMISSION**

**SOURCE: LIVELAW.IN**

#### **Why in news:**

The Supreme Court recently issued a directive to the National Medical Commission (NMC) to provide information on the stipends given to medical colleges across all states.

#### **About National Medical Commission (NMC)**

- **Establishment:** Formed under the National Medical Commission Act, 2019, effective from September 25, 2020.
- **Predecessor:** Replaced the Medical Council of India (MCI) as the regulatory body for medical education and professionals in India.

#### **Primary Functions:**

- Sets standards for medical education and practice.
- Grants recognition to medical qualifications and accreditation to medical schools.
- Registers medical practitioners and monitors medical practice.
- Assesses medical infrastructure and human resources in healthcare.

**Headquarters:** Located in New Delhi.

#### **NMC's Key Responsibilities:**

- **Policy Formulation:** Establishes policies to maintain high-quality standards in medical education and practice.
- **Regulation:**
  - Regulates medical institutions and research.
  - Formulates regulations for medical professionals.
- **Healthcare Assessment:** Assesses healthcare requirements, including human resources and infrastructure.
- **Guideline Enforcement:** Ensures compliance by State Medical Councils with the framed guidelines.
- **Appellate Jurisdiction:** Exercises appellate powers concerning decisions of the Autonomous Boards.
- **Ethical Oversight:** Frames policies and codes to enforce professional ethics among medical practitioners.
- **Fee Regulation:** Determines fees and charges for fifty percent of seats in private medical institutions and deemed universities.

#### **NMC Composition:**

- **Members:** Comprises 33 members, including a chairperson (restricted to medical professionals), 10 ex-officio members, and 22 part-time members.
- **Medical Advisory Council:** Acts as a platform for States or Union Territories to present their views to the NMC and advises on maintaining minimum medical education standards.

#### **Autonomous Boards:**

- Under-Graduate Medical Education Board
- Post-Graduate Medical Education Board
- Medical Assessment and Rating Board
- Ethics and Medical Registration Board



## IV. ELECTIONS AND RPA

### 6. VOTER VERIFIABLE PAPER AUDIT TRAIL

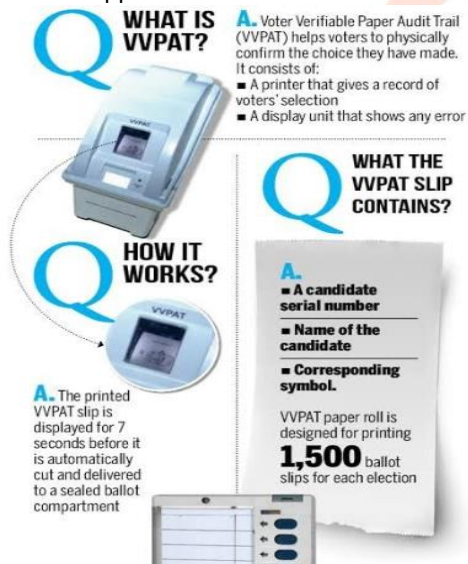
#### SOURCE: THE HINDU

##### Why in news:

The Supreme Court has requested responses from the Election Commission of India (ECI) and the Centre regarding a plea for a thorough count of Voter Verifiable Paper Audit Trail (VVPAT) slips during elections.

##### About VVPAT:

- VVPAT was introduced in India during the 2014 Lok Sabha elections to enhance transparency and voter confidence in the electoral process.
- It comprises two main components: a VVPAT Printer and a VVPAT Status Display Unit (VSDU) connected to Electronic Voting Machines (EVMs).
- After casting a vote, VVPAT prints a slip displaying the candidate's serial number, name, and symbol, which remains visible for 7 seconds before being cut and dropped into a sealed box.



##### How VVPAT is used by ECI:

- VVPAT serves as a verification tool for EVM results; the paper slips stored in VVPAT drop boxes can be checked against EVM tallies if necessary.
- While polling officials have access to VVPATs, voters cannot directly verify the printed slips.
- In cases of alleged electoral fraud or discrepancies, the ECI can order verification of votes using VVPAT slips.
- Currently, VVPAT slips are randomly counted in selected polling stations within Assembly or Parliamentary constituencies to cross-check election results.
- The ECI emphasizes that EVMs and VVPATs operate independently and are not connected to any

network to ensure the integrity and security of the electoral process.

- VVPATs are manufactured by two main entities: the **Electronics Corporation of India Limited (ECIL)** and **Bharat Electronics Ltd (BEL)**.
- The introduction of VVPAT has been a significant step towards ensuring transparency and accountability in India's electoral system, allowing voters to verify that their votes are recorded accurately.

The recent plea to the Supreme Court highlights the importance of a comprehensive VVPAT count to maintain public trust and confidence in elections.

## V. POLICIES/SCHEMES/ACTS/REPORTS/ COMMITTEES IN NEWS

### 7. FOOD WASTE INDEX REPORT 2024

#### SOURCE: DOWN TO EARTH

##### Why in news:

The Food Waste Index Report 2024, a collaborative effort by the United Nations Environment Programme (UNEP) and WRAP (Waste and Resources Action Programme), sheds light on the critical issue of food waste globally.

##### About Food Waste and Loss

- **Food Waste:** Food and associated inedible parts removed from the human food supply chain.
- **Food Loss:** Quantities of crop and livestock human-edible commodities that exit the production/supply chain before reaching the retail level.

##### Magnitude of Food Waste

##### Global Overview:

- In 2022, the world wasted 1.05 billion tonnes of food, accounting for 19% of food available to consumers.
- An additional 13% of food was lost in the supply chain post-harvest, as estimated by FAO.

##### Environmental Impact of Food Waste

##### Greenhouse Gas Emissions:

- **Food loss and waste contribute to 8-10% of global GHG emissions**, nearly five times the aviation sector's total emissions.
- This occurs amidst a backdrop where a third of humanity faces food insecurity.

##### Trends and Patterns in Food Waste

##### Disparity Reduction:

- Data expansion since 2021 has narrowed **average household food waste differences across income levels to just 7 kg per capita annually**.

##### Climate Correlation:

- Hotter countries exhibit higher per capita food waste, potentially due to increased consumption of

fresh foods with substantial inedible parts and inadequate cold chain infrastructure.

#### Urban-Rural Dynamics:

- Middle-income countries show disparities between urban and rural areas, with rural regions generally wasting less due to food scraps' utilization in animal feed and composting.

#### Challenges in Tracking and Monitoring

##### Data Inadequacy:

- Many countries, especially low- and middle-income ones, lack robust systems to monitor progress towards halving food waste by 2030, as per SDG 12.3.
- **Only G20 countries, along with the EU, currently have suitable food waste estimates to track progress.**

#### Recommendations from the Report

##### G20 Engagement:

- Encourage G20 nations to spearhead international cooperation and policy development to meet SDG 12.3.

##### Public Private Partnerships (PPPs):

- Advocate for collaborations between governments, industry groups, and regional bodies to reduce food waste through a Target-Measure-Act approach.

##### Use of Food Waste Index:

- Promote its use for consistent measurement, national baselines, and tracking progress towards SDG 12.3.

##### National Studies:

- Conduct comprehensive food waste studies in key countries to bridge data gaps and devise effective strategies.

#### India's Efforts on Food Loss and Waste

##### Constitutional Perspective:

- While the Indian Constitution doesn't explicitly mention the right to food, Article 21's right to life implies a right to live with human dignity, encompassing food security.

##### Buffer Stock and Procurement:

- The Food Corporation of India (FCI) procures food grains at MSP and stores them for distribution to state governments.

##### National Food Security Act, 2013 (NFSA):

- A shift towards a rights-based approach to food security.
- Covers 75% of the rural and 50% of the urban population, with specific provisions like Antyodaya Anna Yojana and Priority Households.

#### MAINS QUESTION:

Q. "Discuss the key findings and recommendations of the Food Waste Index Report 2024 and evaluate India's

constitutional and policy measures to address food loss and waste." (150 WORDS)

## VI. PRELIMS POINTERS IN NEWS

### 8. ZERO FIR

#### SOURCE: THE HINDU

##### Why in news?

Police filed a zero FIR against a former Telangana minister for allegedly making inappropriate remarks about the state's Chief minister.

##### About Zero FIR:

- **Zero FIR allows the police to register an FIR irrespective of where the offense occurred, eliminating jurisdictional issues.**
- After registration, the zero FIR is transferred to the appropriate police station for further investigation.
- The concept of zero FIR was **recommended by the Justice Verma Committee following the 2012 Nirbhaya gang rape incident in Delhi** to ensure prompt action without jurisdictional excuses.
- The **primary objective of zero FIR is to expedite the process for victims, ensuring they do not face delays in filing complaints and receiving justice.**



##### About FIR:

- An FIR, or First Information Report, is a report filed by a police officer detailing information about an alleged offense.
- **It is not specifically defined in the Indian Penal Code (IPC) or the Code of Criminal Procedure (CrPC) of 1973.**
- Information recorded under Section 154 of the CrPC is termed as the First Information Report (FIR) in police regulations.
- **FIR serves as the initial step in the criminal justice process, providing a basis for police investigations and legal proceedings.**

### 9. KHULA PRACTICE BY MUSLIM WOMEN

#### SOURCE: THE HINDU

##### Why in news?

The Supreme Court has issued notice in an appeal challenging two Kerala High Court verdicts affirming Muslim



women's absolute right to 'Khula' as a form of unilateral and extra-judicial divorce under Islamic law.

#### About Khula:

- 'Khula' is a practice in Islamic law that allows Muslim women to seek separation from their husbands independently.
- This practice is explicitly mentioned in the Quran and aims to protect women's rights within the framework of Islamic law.

#### Khula Process:

- In the Khula process, the wife initiates the divorce by formally requesting it from the court, citing reasons like incompatibility, abuse, or neglect.
- There may be provisions for the woman to return the 'Mehr' (dowry) or reach a financial settlement with her husband as part of the divorce agreement.

#### Responsibilities After Khula:

- Following a Khula divorce, the husband is responsible for the education and financial support of the children.

#### Comparison with Talaq:

- 'Talaq' is the divorce initiated by the husband in Islamic law.
- Unlike Khula, Talaq can be pronounced by the husband with or without cause, and there is no specific procedure for it.
- After Talaq, the husband must repay the dowry and any property owned by the former wife.

#### Legal Implications:

- The Supreme Court's notice in the appeal signifies the importance of clarifying the legal rights and procedures regarding divorce under Islamic law.
- It highlights the ongoing legal discussions and debates surrounding women's rights and divorce in Muslim communities.

## 10. WORLD ANTI-DOPING AGENCY

#### SOURCE: INDIAN EXPRESS

##### Why in news?

India has reported the highest percentage of doping offenders, according to the 2022 testing data released by the World Anti-Doping Agency (WADA).

##### About World Anti-Doping Agency:

- The World Anti-Doping Agency (WADA) was established in 1999 to spearhead the global movement against doping in sports.
- WADA operates as an independent agency, collaboratively working with the sports community and governments worldwide.
- Its primary objective is to develop, harmonize, and coordinate anti-doping rules and policies across all sports and countries.

- WADA conducts scientific research, educates stakeholders, develops anti-doping capacities, and monitors compliance with the World Anti-Doping Code (Code), which standardizes anti-doping policies globally.
- The First World Conference on Doping in Sport held in 1999.
- The agency operates as a Swiss private law, not-for-profit foundation, with its headquarters in Montreal, Canada.
- WADA's governance structure includes a 42-member Foundation Board and a 16-member Executive Committee.
- The Foundation Board comprises representatives from the Olympic Movement and governments worldwide, while the Executive Committee is responsible for managing the agency's activities and assets.

## 11. NATIONAL CAREER SERVICE (NCS) PORTAL

#### SOURCE: THE HINDU

##### Why in news?

The government intends to modernize the nine-year-old National Career Service (NCS) portal to connect millions of young people with potential employers, aiming to build a workforce prepared for the future.

##### About portal:

- The National Career Service (NCS) portal offers online career counselling and vocational guidance services.
- Its goal is to provide job seekers with the information needed to make informed career choices based on qualifications, skills, and interests.
- It serves as a nationwide platform for job seekers and employers, facilitating dynamic and efficient job matching.

##### National Career Service:

- Launched in 2015 as a mission-mode project under the E-Governance Plan.
- Objectives include bridging the gap between job seekers and employers, offering career guidance, and promoting skill development.
- Services offered include job matching, career counselling, job notifications, and information on skill development courses and internships.

##### Focus Areas

- Enhancing career and employment opportunities.
- Providing counselling and guidance for career development.
- Focusing on decent employment and encouraging female labour force participation.





- Supporting entrepreneurial endeavours.

### Nodal Agency

- The project is implemented by the Directorate General of Employment, Ministry of Labour & Employment.

## 12. RASHTRIYA AROGYA NIDHI (RAN) SCHEME

### SOURCE: PIB

#### Why in news?

The Delhi High Court raised concerns over the "extremely low" threshold income required to claim benefits under the RAN scheme.

#### About Rashtriya Arogya Nidhi (RAN) Scheme:

The Rashtriya Arogya Nidhi (RAN) scheme was launched in 1997 as a central sector initiative.

#### Objective

- It aims to provide one-time financial aid to economically disadvantaged patients suffering from life-threatening diseases like heart conditions, kidney ailments, liver diseases, and cancer.

#### Eligibility Criteria

- The scheme targets patients living below the state/UT-specific poverty line.

#### Components of RAN

##### Rashtriya Arogya Nidhi (RAN):

- Offers financial aid for treatments related to heart, kidney, liver, etc., at government hospitals with super-specialty facilities.
- The maximum assistance provided is Rs. 15 lakhs.**

##### Health Minister's Cancer Patient Fund (HMCPPF):

- Provides financial aid specifically for cancer treatments at Regional Cancer Centres (RCCs), Tertiary Care Cancer Centres (TCCCs), and State Cancer Institutes (SCIs).
- The maximum aid available is Rs. 15 lakhs.**

##### Financial Assistance for Rare Diseases:

- Offers support to poor patients suffering from specified rare diseases for treatment at government hospitals with super-specialty facilities.
- The maximum assistance here is Rs. 20 lakhs.**

## 13. INDELIBLE INK

### SOURCE: INDIAN EXPRESS

Indelible ink is a classic symbol of Indian elections, visible on voters' hands during polling.

It contains silver nitrate and becomes visible when exposed to ultraviolet light, such as sunlight.

#### Composition and Quality

- Indelible ink's quality depends on the concentration of silver nitrate.

- Higher concentrations result in better quality ink.
- It remains resistant to soap, liquids, and detergents for up to 72 hours after application.
- The precise protocol for making the ink, including its chemical composition, is not widely known.



#### Manufacture and Distribution

- Initially manufactured by the Council of Scientific & Industrial Research (CSIR) at the request of the Election Commission of India.
- Mysore Paints & Varnish Ltd. has been licensed to produce the ink since 1962.**
- The ink is exported to over 25 countries, including Canada, Ghana, Nigeria, and Malaysia.

#### Legal Mention

- The Representation of the People Act (RoPA) of 1951 references the use of indelible ink.**
- Section 61 of RoPA allows for the marking of voters' thumbs or fingers with indelible ink before they receive a ballot paper.

#### Significance

- Indelible ink serves as a crucial tool in preventing multiple voting during elections.
- Its presence on a voter's hand indicates that they have already cast their vote, preventing fraudulent voting practices.**



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## ELECTION COMMISSION OF INDIA

The Election Commission of India (ECI) plays a pivotal role in ensuring free and fair elections in the world's largest democracy.

Recent developments, including the swift appointments and resignations of key personnel, have sparked debates about the transparency and autonomy of the commission.

### What is the Election Commission of India (ECI)?

- **Overview:** The ECI is an autonomous constitutional authority responsible for overseeing and administering elections at both Union and State levels in India.
- **Establishment:** Founded on 25th January 1950, commemorated as National Voters' Day, with its headquarters situated in New Delhi.
- **Scope:** Administers elections to the Lok Sabha, Rajya Sabha, State Legislative Assemblies, and the offices of the President and Vice President. It does not manage panchayat and municipality elections, which fall under the purview of State Election Commissions.

### Constitutional and Legal Provisions

Article 324 (1) Constitution of India	ECI controls and directs the preparation of Electoral Roll for all elections
Article 325 Constitution of India	One general Electoral Roll for every territorial Constituency, no discrimination on grounds of religion, race, cast & sex
Article 326 Constitution of India	Registration of person as voter in any election having 18 years of age and not disqualified under the Constitution
Article 327 Constitution of India	Enacted two Acts for all the matters related to election <ul style="list-style-type: none"><li>• Representation of People Act, 1950</li><li>• Representation of People Act, 1951</li></ul>

### Structure of the ECI:

- **Evolution:** Initially, the ECI comprised only one Election Commissioner. However, after the Election Commissioner Amendment Act 1989, it transformed into a multi-member body.
- **Composition:** Currently, the ECI consists of the Chief Election Commissioner (CEC) and two Election Commissioners (ECs).

### Appointment & Tenure of Commissioners:

- **Appointment Process:** Commissioners are appointed by the President based on the provisions of the CEC and Other ECs (Appointment, Conditions of Service, and Term of Office) Act, 2023.
- **Tenure:** Commissioners serve a fixed term of six years or until they reach the age of 65, whichever comes first.
- **Remuneration:** Their salaries and conditions of service match those of the Cabinet Secretary.

### Removal Mechanisms:

- **Resignation & Removal:** Commissioners can resign voluntarily or be removed before the end of their tenure.
- **CEC Removal:** The CEC can only be removed through a process similar to that of a Supreme Court judge by Parliament.
- **ECs Removal:** ECs can only be removed based on the recommendation of the CEC.

### Recent Developments and Controversies:

- **Appointments:** Gyanesh Kumar and Sukhbir Singh Sandhu, retired bureaucrats, have been swiftly appointed as Election Commissioners, joining Rajiv Kumar, the Chief Election Commissioner, just days before the announcement of the 2024 Lok Sabha election dates.
- **Resignation of Arun Goel:** Amid a Constitutional Bench hearing aiming for an independent selection process for ECI members, Arun Goel's resignation raised concerns about the commission's transparency and autonomy, especially given its timing before the Lok Sabha election schedule finalization.

### Issues Associated with the Election Commission of India

#### Constitutional Limitations:

- **Qualifications Undefined:** The Constitution doesn't specify the qualifications required for ECI members, be it legal, educational, administrative, or judicial.
- **Ambiguous Tenure:** No fixed term is mentioned for the members of the Election Commission.
- **Post-Retirement Appointments:** Retiring election commissioners are not barred from further government appointments.

#### Dominance of Government in Selection Committee:

- **Composition:** The selection committee includes the Prime Minister, Leader of the Opposition in the Lok Sabha, and a Union cabinet minister.
- **Implication:** This dominance by the ruling government may compromise the ECI's independence.

#### Insecurity of Tenure:

- **Removal Mechanism:** Election Commissioners can be removed by the government upon the Chief Election Commissioner's recommendation, rather than through a formal impeachment process.
- **Consequence:** This can make Election Commissioners vulnerable to political pressures, affecting their impartiality.

#### Financial Dependence on the Union Government:

- **Limited Independence:** The Election Commission relies on the Union Government for its financial needs.



- **Funding Source:** The Election Commission's expenses aren't directly drawn from the Consolidated Fund of India, furthering its dependence.

#### Electoral Malpractices:

- **Irregular Voter Rolls:** Issues like duplicate entries, inaccuracies, and omissions can lead to disenfranchisement.
- **Fraudulent Practices:** Tampering with Electronic Voting Machines (EVMs), voter impersonation, and manipulation of voter lists threaten election integrity.
- **Electoral Violence:** Violence in politically sensitive or communal areas remains a significant concern.

#### Allegations of Political Bias:

- **Decision-making:** Accusations of political favoritism and biased decision-making against the ECI.
- **Misuse of Power:** Abrupt transfers of senior officials and violations of the Model Code of Conduct (MCC) by political parties highlight concerns.

#### Lack of Authority to Deregister Political Parties:

- **Limited Power:** Despite enrolling parties under Section 29A of the Representation of the People Act, 1951, the ECI lacks the authority to deregister parties for severe violations.
- **Regulation Gaps:** The ECI cannot enforce inner-party democracy or regulate party finances effectively.

#### Accessibility and Inclusivity Challenges:

- **Infrastructure Gaps:** Inadequate facilities for voters with disabilities and language barriers.
- **Logistical Issues:** Challenges in remote or marginalized areas hinder voter participation.

#### Steps to Strengthen the Election Commission of India Independent Selection Committee:

- **Representation:** Form an independent selection committee with diverse stakeholder representation, not dominated solely by government officials.
- **Legal Backing:** The Supreme Court's ruling in the Anoop Baranwal vs Union of India Case, 2023, suggests a balanced committee composition, including the Prime Minister, Leader of the Opposition, and Chief Justice of India.

#### Statutory Safeguards for Election Commissioners:

- **Clear Criteria:** Enact legislation specifying the grounds and procedures for removing Election Commissioners, ensuring fair and transparent processes.
- **Prevent Arbitrary Removal:** Incorporate stringent criteria and procedural safeguards to prevent arbitrary dismissals.

#### Transparent Funding Mechanisms:

- **Accountability:** Implement transparent funding methods for the ECI through parliamentary appropriations or an independent budgetary oversight committee.
- **Impartial Funding:** This will ensure fair and impartial funding decisions without undue influence.

#### Proportional Punishments Empowerment:

- **Sanctions:** Grant ECI the authority to impose a range of penalties on political parties for violations, varying from fines to deregistration.
- **Severity Matching:** Punishments should match the severity of the violation to deter malpractices effectively.

#### Enhance Electoral Integrity:

- **Security Measures:** Implement robust measures against electoral fraud, voter intimidation, and malpractices.
- **VVPATS Implementation:** Expand the Voter Verifiable Paper Audit Trail System (VVPATS) across more constituencies to enhance trust and transparency.

#### Technological Integration:

- **Modernization:** Embrace technological advancements like blockchain-based voting systems to bolster security and reduce tampering risks.
- **Efficiency:** Modernizing electoral infrastructure can enhance efficiency, transparency, and voter confidence.

#### Inclusive Participation:

- **Accessibility:** Ensure polling stations are accessible to all voters, including those with disabilities, by providing ramps, Braille signage, and tactile voting machines.
- **Address Discrimination:** Proactively address issues like voter suppression and discrimination to promote inclusive participation.

#### International Collaboration:

- **Knowledge Exchange:** Collaborate with international electoral bodies for knowledge sharing and adopting best practices.
- **Global Reputation:** Enhance ECI's credibility and global reputation through international partnerships and collaborations.

#### UPSC MAINS QUESTION

**Q. Discuss the challenges faced by the Election Commission of India (ECI) in ensuring transparent and impartial elections. Suggest measures to strengthen the autonomy and integrity of the ECI. (150 WORDS)**





## INTERNATIONAL RELATIONS

### I. INDIA AND ITS NEIGHBOURHOOD

#### 1. KATCHATHEEVU ISLAND DISPUTE

##### SOURCE: THE HINDU

The Katchatheevu Island, located in the Palk Strait between India and Sri Lanka, has been a focal point of the maritime boundary disputes and fishing rights issues between the two countries.

##### Background of Katchatheevu Island:

##### Geographical Details:

- Located in the Palk Strait, approximately 33 km from the Indian coast.
- Situated about 62 km southwest of Jaffna, at Sri Lanka's northern tip.
- Encompasses 285 acres and lacks a source of drinking water.
- Features St. Anthony's church, a Catholic shrine, where an annual festival is conducted by priests from both countries.

##### Historical Context:

- Originated from a volcanic eruption in the 14th century.
- Initially governed by Sri Lanka's Jaffna kingdom; later controlled by the Ramnad zamindari under the Nayak dynasty of Madurai in the 17th century.

##### The Dispute Over Katchatheevu

##### Ownership Claims:

- **India:** Historically part of the Madras Presidency during British rule, India claims sovereignty based on this association.
- **Sri Lanka:** Asserts ownership citing Portuguese jurisdiction over the island from 1505-1658 CE.

##### 1974 Maritime Agreement:

- Transferred ownership to Sri Lanka, ending the long-standing dispute.

##### Ambiguity Over fishing Rights:

- 1976 agreement prohibited fishing in each other's Exclusive Economic Zones, causing ambiguity overfishing rights, especially concerning Katchatheevu.

##### Post-Civil War Tensions:

- After the end of Sri Lanka's civil war in 2009, disputes intensified over Indian fishermen entering Sri Lankan waters, resulting in arrests and allegations of custodial torture.

##### Stakeholder Perspectives

##### Tamil Nadu's View:

- Tamil Nadu leaders have historically urged for the retention or retrieval of Katchatheevu, emphasizing its importance to India, not just Tamil Nadu.
- The matter reached the Supreme Court, with demands ranging from reclaiming the island to seeking perpetual lease.

##### Union Government's Position:

- In 2013, the government stated that reclaiming Katchatheevu was irrelevant due to past agreements.
- However, in 2022, the government clarified that the island lies on the Sri Lankan side of the maritime boundary, although the matter remains under Supreme Court consideration.

##### Other Maritime Disputes of India

- With Pakistan: Concerns the demarcation of the boundary along Sir Creek.
- With Bangladesh: Pertains to the New Moore Island in the Bay of Bengal, where the Permanent Court of Arbitration ruled in favour of Bangladesh.

##### Conclusion

The Katchatheevu Island dispute highlights the intricate nature of maritime boundary disputes and fishing rights issues between India and its neighbours.

#### 2. INDIA AND MAURITIUS SIGNS PROTOCOL AMENDING DOUBLE-TAX TREATY

##### SOURCE: INDIAN EXPRESS

##### Why in news?

The recent amendments to the India-Mauritius tax treaty aim to curb "treaty shopping," which has significant implications for cross-border investment flows between the two countries.

Mauritius has been a major source of Foreign Direct Investment (FDI) into India, making these amendments crucial for understanding the evolving landscape of international taxation and investment dynamics.

##### About Tax Treaties

- **Purpose:** Tax treaties define the tax treatment of incomes from one country accruing to residents of another, influencing international investment strategies.
- **Developing Countries' Approach:** Countries like India often offer preferential tax rates to attract foreign investments, ceding taxing rights for anticipated economic growth.

##### Indian perspective on Treaty Shopping

- **Union of India v. Azadi Bachao:** The Indian Supreme Court viewed treaty shopping as a



necessary strategy to attract FDI into developing economies, considering it a trade-off for economic growth.

### Evolution of International Tax Law

- **OECD's BEPS Programme:** Aimed at combating tax avoidance through low-tax jurisdictions, the Base Erosion and Profit Shifting (BEPS) programme sought to reform international tax practices.
- **Multilateral Instrument (MLI):** A key BEPS reform, the MLI allowed countries to amend tax treaties, introducing provisions like the Principal Purpose Test (PPT) to prevent treaty abuse and shopping.

### Specific Amendments in the India-Mauritius Treaty

- **Introduction of PPT:** The Principal Purpose Test allows Indian tax authorities to deny treaty benefits if the primary intent of a transaction is to exploit these benefits.
- **Assessment Beyond Residency Certificates:** Tax authorities can now scrutinize the actual purpose of transactions, going beyond formal documentation like tax residency certificates.

### Implications for Foreign Direct Investment (FDI)

- **Impact on Investment Flows:** Mauritius contributed to 16% of FDI inflows into India in 2021-22. The amendments are expected to reshape investment patterns, similar to the effects of the 2017 amendments taxing capital gains at source.
- **General Anti-Avoidance Rule (GAAR):** Introduced in 2017, GAAR aims to prevent tax avoidance by assessing transactions based on their true intent and spirit.

### Recommendations

- **Panel-Based Approach for GAAR:** To address concerns of excessive oversight by tax authorities, a panel-based approach similar to GAAR's implementation can be considered for the new provisions.
- **Global Minimum Tax:** Implementing a global minimum tax, like the Subject to Tax Rule (STTR), could deter low-taxed transactions, ensuring fair taxation and discouraging tax evasion.

## II. AGREEMENTS INVOLVING INDIA AND/OR AFFECTING INDIA'S INTERESTS.

### 3. INDIA EXPANDS ANTARCTIC POSTAL NETWORK

#### SOURCE: PIB

#### Why in news?

The Department of Posts has recently inaugurated a second post office branch at the Bharati research station in

Antarctica, marking a significant milestone after nearly four decades.

#### Historical Context: India's Post Office Legacy in Antarctica

- **1984:** India established its first post office at Dakshin Gangotri, India's initial research station in Antarctica.
- **1988-89:** Dakshin Gangotri was submerged in ice and subsequently decommissioned.
- **1990:** A new post office was set up at the Maitri research station, continuing India's tradition of postal service in Antarctica.

#### Operational Process of Antarctica Post Office

- **Addressing:** Letters intended for Antarctica will now carry an experimental PIN code, MH-1718, indicative of the new post office branch.

#### Consignment Handling:

- **Letters are sent to the National Centre for Polar and Ocean Research (NCPOR) in Goa.**
- Researchers carry these letters during expeditions to Antarctica.

#### Cancellation:

- At the research base, the letters are 'cancelled,' making them unusable for reuse.
- The letters are then returned via post to the designated recipients.

#### Strategic Importance of India's Post Office in Antarctica

##### Assertion of Presence:

- Antarctica, being neutral under the Antarctic Treaty, allows India to assert its presence on the continent.

##### Symbol of Commitment:

- The post office symbolises India's dedication to scientific exploration and environmental conservation in Antarctica.

##### Alignment with Antarctic Governance:

- The post office aligns with the Antarctic Treaty's spirit, which emphasises scientific discovery and prohibits military operations and territorial claims.

#### India's Antarctic Programme

- **Initiation:** Started in 1981 with the first Indian expedition to Antarctica.
- **Managing Body:** National Centre for Antarctic and Ocean Research (NCPOR) established in 1998.

#### Research Stations and Facilities

##### Dakshin Gangotri:

- India's first Antarctic research base, decommissioned after being submerged in ice in 1988-89.

##### Maitri:

- India's second permanent research station, located in the Schirmacher Oasis, operational since 1989.
- Features Lake Priyadarshini, a freshwater lake built around the station.

##### Bharti:

- India's latest research station, operational since 2012, located approximately 3,000 km east of Maitri.
- Designed to ensure researchers' safety amidst harsh Antarctic conditions.

### Additional Research Facilities

#### Sagar Nidhi:

- Commissioned in 2008 by the National Institute of Ocean Technology (NIOT).
- An ice-class vessel capable of navigating Antarctic waters and conducting various research activities, including deep-sea mining and tsunami studies.

#### Way Forward

- The establishment of a new post office branch at the Bharati research station reaffirms India's commitment to Antarctic exploration and research.
- **It enhances logistical support for scientists and researchers stationed in Antarctica, facilitating smoother communication with the outside world.**

## III. GLOBAL ISSUES

### 4. INDIA'S GROWING INVOLVEMENT IN THE SOUTH CHINA SEA DISPUTES

#### SOURCE: THE HINDU

##### Why in news?

India's Ministry of External Affairs recently reaffirmed its strong support for the Philippines in safeguarding its national sovereignty amid increasing tensions with China over the South China Sea.

Approaching the 75th year of diplomatic relations in 2024, India and the Philippines share a profound and evolving partnership.

#### The South China Sea Dispute

##### Significance of the South China Sea:

- **Strategic Location:** The South China Sea is a critical waterway, bordered by countries like China, Taiwan, Vietnam, Thailand, Malaysia, Singapore, Indonesia, Brunei, and the Philippines.



- **Trade Importance:** This sea routes about one-third of global shipping, with over 64% of China's maritime trade and more than 55% of India's trade passing through the region and the Malacca Strait.
- **Fishing Ground:** Rich in marine life, the South China Sea supports millions of livelihoods, sustains regional economies, and ensures food security for numerous nations.

#### Dispute Overview:

- **The primary contention lies in conflicting territorial claims over islands, reefs, and their adjacent waters.**
- Involved nations include China, Brunei, Taiwan, the Philippines, Vietnam, and Malaysia.
- **China's expansive "nine-dash line" claim has heightened tensions due to its construction of military installations on islands like Paracel and Spratly.**

#### Salami Slicing Technique:

- **Definition:** This strategy involves gradually claiming maritime areas through incremental actions, exploiting legal loopholes without direct confrontation.
- **Example:** China's actions like building artificial islands and imposing fishing bans serve to consolidate control and restrict access, as seen when Chinese coast guard ships blocked Philippine vessels at the Second Thomas Shoal.

#### Areas of India-Philippines Cooperation

##### Bilateral Relations:

- Established in 1949, diplomatic ties have expanded under India's Act East Policy since 2014.

##### Trade and Commerce:

- **Bilateral trade surpassed USD 3 billion in 2022-23.**
- India exports engineering goods, pharmaceuticals, and agricultural products to the Philippines, while imports include electrical machinery and ores from the Philippines.

##### Health and Medicine:

- The Philippines granted Emergency Use Authorization for India's Covaxin, accounting for 20% of India's pharmaceutical exports to ASEAN.

##### Science and Technology:

- A Programme of Cooperation (POC) in Science and Technology, signed in 2019, covers areas like biotechnology and ocean science.
- **India's agreement to supply the BrahMos supersonic cruise missile variant to the Philippines in 2022 highlights the demand for India's advanced defence technologies.**

#### MAINS QUESTION:

Q. Discuss the evolving India-Philippines bilateral relationship in the context of their shared concerns over the



South China Sea and examine the strategic implications for regional stability. (150 WORDS)

## 5. NASA EMBRACES SWEDEN AS NEWEST MEMBER OF ARTEMIS ACCORDS FAMILY

**SOURCE: INDIAN EXPRESS**

**Why in news?**

NASA welcomed Sweden as the 38th country to sign the Artemis Accords and commit to peaceful and safe space exploration.

**About Artemis Accords**

- **Establishment:** Introduced in 2020 by NASA and the US Department of State, along with seven other founding member nations.
- **Foundation:** Grounded in the Outer Space Treaty (OST) of 1967, these principles guide civil space exploration in the modern era.
- **Objective:** Promote peaceful cooperation in space exploration through multilateral leadership in civil space diplomacy.
- **Indian Participation:** India is a signatory to the Artemis Accords, demonstrating its commitment to international space collaboration.

**Commitments of Signatories**

- **Transparency:** Ensure broad dissemination of national space policies and share scientific findings from space activities.
- **Interoperability:** Develop interoperable exploration infrastructure and standards, including communication systems and landing structures.
- **Regulations:** Implement Memoranda of Understanding (MoUs) in line with the Outer Space Treaty of 1967.
- **Preservation:** Protect space heritage, including historic landing sites and evidence of human activity on celestial bodies.
- **Sustainability:** Mitigate orbital debris and ensure safe disposal of spacecraft at the end of missions.

**International Treaties on Outer Space**

- **Rescue Agreement (1968):** Focuses on rescuing and assisting astronauts in distress.
- **Liability Convention (1972):** States are liable for damage caused by their space objects on Earth or to aircraft.
- **Registration Convention (1976):** Requires registration of objects launched into space.
- **Moon Agreement (1979):** Declares the Moon and its resources as the common heritage of humanity. Note: India has ratified all these treaties except the Moon Agreement, although India is a signatory to it.

## IV. PRELIMS POINTERS IN NEWS

### 6. NAGORNO-KARABAKH CONFLICT

**SOURCE: INDIAN EXPRESS**

**Why in news?**

Russian peacekeepers have started pulling out of Nagorno-Karabakh after Azerbaijan regained control of the contested region from Armenian separatists last year.



**Nagorno-Karabakh Conflict**

**Background:**

- **Nagorno-Karabakh, also known as Artsakh, is a mountainous region in the South Caucasus.**
- It has been a point of contention between Armenia and Azerbaijan since the collapse of the Russian Empire in 1917.

**Historical Claims:**

- Armenians, who are predominantly Christian, assert historical dominance in the area dating back centuries.
- **Azerbaijan, with a majority Muslim population, also claims historical ties to the region.**

**Soviet Era:**

- Under Soviet rule, Nagorno-Karabakh was made an autonomous region within the republic of Azerbaijan.
- The region experienced tensions between its Armenian and Azerbaijani populations.

**First Nagorno-Karabakh War (1988-1994):**

- **Armenians and Azerbaijanis engaged in conflict over the region, resulting in Armenian control over most of Nagorno-Karabakh.**
- Armenia-backed forces gained control over additional territory surrounding Nagorno-Karabakh.

**Second Nagorno-Karabakh War (2020):**

- **Azerbaijan launched a military operation, supported by Turkey, to regain control over Nagorno-Karabakh.**
- The 44-day war ended with Azerbaijan reclaiming significant portions of the region from Armenian control.

## Current Situation:

- Russian peacekeepers were deployed to Nagorno-Karabakh following the 2020 war.
- With Azerbaijan's recapture of the region, Russian peacekeepers have begun withdrawing.

## Strategic Importance:

- Nagorno-Karabakh holds strategic significance due to its location amidst Turkey, Iran, and Russia, as well as its proximity to the hydrocarbon-rich Caspian Sea.

## International Recognition:

- While internationally recognized as part of Azerbaijan, Nagorno-Karabakh's inhabitants have their own government, closely tied to Armenia but not officially recognized by it or other UN member states.

## 7. SCHENGEN VISA

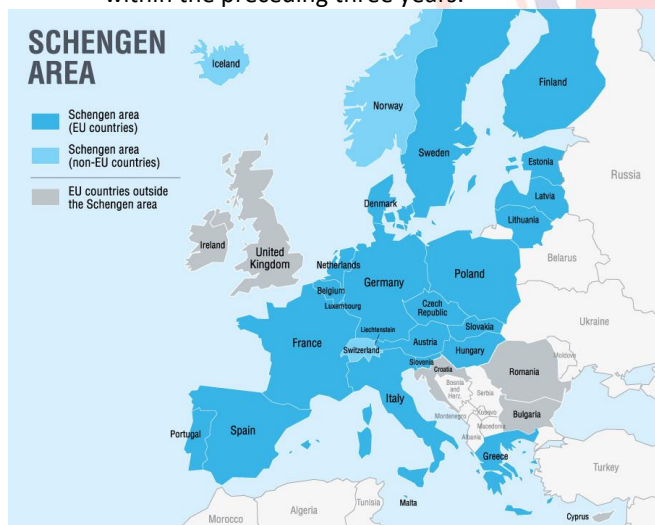
### SOURCE: THE HINDU

#### Why in news?

The European Union (EU) has introduced a new policy allowing Indian nationals to obtain long-term multi-entry Schengen visas, valid for two years.

#### New Visa Policy for Indians

- Indian nationals can now secure a two-year multi-entry Schengen visa after lawfully using two visas within the preceding three years.



#### What is Schengen Visa?

- It's a mandatory travel document for non-Europeans visiting any of the 27 countries in the Schengen area.
- Once granted, it permits borderless travel across member-states without identity checks.
- The visa allows short-term stays, permitting visitors to spend up to 90 days within a 180-day period.

- Holders of this visa are not authorized to work during their stay.

#### About Schengen Area

- Consists of 27 European countries that have abolished internal borders for unrestricted movement.
- Members comprise 23 EU states (excluding Bulgaria, Cyprus, Ireland, and Romania) and all European Free Trade Association nations (Iceland, Liechtenstein, Norway, and Switzerland).
- Switzerland, Iceland, and Norway, although not EU members, are part of the Schengen Area.

#### Member countries:

- Eliminate internal border checks, except under specific threats.
- Implement unified controls at external borders, following clear criteria.

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## IRAN-ISRAEL CONFLICT

The recent significant attack launched by Iran on Israel, deploying a substantial number of projectiles, marks a notable escalation in the ongoing conflict between the two countries.

### Historical background

#### Pre-1979 Iran-Israel Ties:

- **Recognition:** Iran was among the earliest countries in the region to recognize Israel after its establishment in 1948.
- **Periphery Doctrine:** Israel, under Prime Minister David Ben Gurion, adopted the "periphery doctrine," forming alliances with non-Arab, mainly Muslim, countries like pre-revolution Iran to counter Arab hostility.

#### The 1979 Revolution:

- **Regime Change:** The 1979 Islamic Revolution led to the establishment of a religious state in Iran, fundamentally altering its stance towards Israel.
- **New Perspective:** Ayatollah Khomeini termed Israel as "Little Satan," aligning Iran's view with the Palestinian cause and against perceived Western interference.

#### Shadow War after 1979:

- **Proxy Conflict:** While direct military confrontation hasn't occurred, both countries have engaged in covert actions against each other.
- **Israeli Actions:** Israel targeted Iranian facilities and scientists, including cyberattacks like Stuxnet, aiming to hinder Iran's nuclear ambitions.

#### Support for Militant Groups:

- **Iranian Support:** Iran has provided support to anti-Israel militant groups like Hezbollah in Lebanon and Hamas in Gaza, exacerbating tensions.
- **Proxy Warfare:** This support has fueled regional instability, raising concerns of a widening conflict.

#### Key Events Leading to Iran's Attack on Israel

- **US Withdrawal from Iran's Nuclear Deal (2018):** Israel supported the US decision to pull out from the Iran nuclear deal, seeing it as a positive move against Iran's nuclear ambitions.
- **Assassination of General Qassem Soleimani (2020):** After the US drone strike killed Iran's top military commander, Iran retaliated by launching missiles at American bases in Iraq.
- **Hamas Missile Attack (Oct 2023):** Iran-backed Hamas fired missiles at Israel, prompting Israeli airstrikes on Gaza.
- **Israel's Raids on Medical Facilities (Nov 2023):** Israel targeted hospitals in Gaza, suspecting Hamas operations from these sites.
- **Houthi Group's Red Sea Incident (Nov 2023):** An Iran-backed group, the Houthis, disrupted a cargo

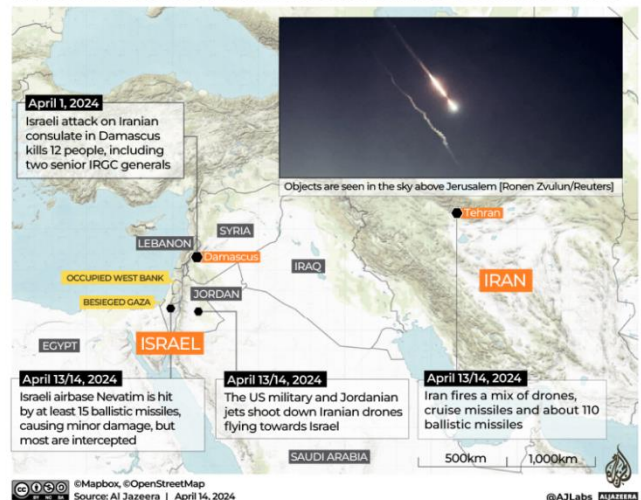
vessel in the Red Sea, leading to supply chain disruptions.

- **Israel's Ground Offenses (Dec 2023):** Israel intensified ground operations in Gaza, resulting in more casualties and refugees.
- **Airstrike on Iranian Embassy (2023):** An attack on the Iranian embassy in Damascus killed Iranian officers, with Israel neither confirming nor denying its role.
- **Iran's Direct Missile Attack (Apr 2024):** Iran launched missiles at Israel from its territory, reportedly in retaliation for an earlier strike on Iran's consulate in Syria.
- **Israel's Air Defense Success (Apr 2024):** The Israel Defense Forces (IDF) reported that their air defense system successfully intercepted 99% of the incoming missiles from Iran. Additionally, the United States, the United Kingdom, France, and several Middle Eastern allies provided support in defending Israel.

#### ISRAEL'S WAR ON GAZA

### Iran launches drones, missiles at Israel

Israel says nearly all incoming drones and missiles - numbering more than 300 - from Iran, Iraq and Yemen have been intercepted. Iran says the attack is in response to an Israeli strike on its consulate in Syria on April 1 and that the matter can now "be deemed concluded".



#### Impact of Iran-Israel Conflict on Global Dynamics

##### Potential Regional Escalation

- Israel views a nuclear-capable Iran as an existential threat, increasing the likelihood of retaliatory actions.
- Failure in diplomatic negotiations could escalate tensions, making military intervention a more probable outcome.

##### Economic Ramifications

- **Oil Supply Disruption:** Iran, an OPEC member and a significant oil producer, could disrupt global oil





supplies. India, a major oil consumer, could face severe market volatility due to the disruption.

- **Inflation and Capital Movement:** Geopolitical tensions could lead to a rise in commodity prices, causing global inflation. Investors might shift from risky assets like stocks to safer options like gold. This could lead to falling bond prices, increased credit costs, and market instability.

#### Trade and Travel Disruptions

- Potential disruption in aviation and shipping sectors due to a full-scale conflict between Israel and Iran.
- Several regional countries closed their airspaces temporarily during heightened tensions, impacting international trade and travel routes.

#### India's Strategic Position

- Balancing relations with both Iran and Israel poses challenges for India's foreign policy.
- India's defense ties with Israel contrast with its historical and economic ties with Iran. The goal is to maintain Middle East stability to safeguard India's energy security and protect its diaspora.

#### Potential Solutions to De-escalate the Conflict

##### Advocating Peaceful Resolutions

- **Sustainable Ceasefire:** Israel should consider a lasting ceasefire in Gaza, allowing humanitarian aid and adhering to UN resolutions towards a two-state solution.
- **Dialogue and Mediation:** International mediation could facilitate direct talks between Iran and Israel, possibly by neutral parties like the EU or UN, fostering trust and consensus.

##### Addressing Nuclear Concerns

- **JCPOA Compliance:** Iran could comply with the JCPOA's terms and allow international nuclear facility inspections.
- **Recognition of Rights:** Israel could recognize Iran's right to peaceful nuclear energy, refraining from military strikes on Iranian nuclear facilities.

##### Promoting Regional Cooperation

- Encouraging security cooperation within regional frameworks like the Arab League or the Gulf Cooperation Council can address mutual security concerns and stabilize the Middle East.

##### Establishing a Comprehensive Vision

- Developing a comprehensive security framework for the Middle East can include confidence-building measures, arms control agreements, and conflict resolution mechanisms.
- Addressing underlying issues like historical disputes and religious extremism can create a conducive environment for peace and reconciliation.

##### Normalization of Relations

- Both nations could initiate diplomatic normalization, like exchanging ambassadors and

reopening embassies, mirroring recent peace agreements between Israel and some Arab nations.

#### Conclusion

**The Iran-Israel conflict's repercussions have global implications, especially for energy markets and geopolitical stability.**

The international community's intervention to promote dialogue, mediation, and peaceful resolutions is vital to avert a full-blown crisis.

**Emphasizing balanced and responsible policies can mitigate long-term instability and address the Middle East's multifaceted challenges.**

#### UPSC MAINS QUESTION

**Q. Examine the historical background and key events leading to the recent escalation of tensions between Iran and Israel. Discuss the potential global implications of this conflict and suggest measures to de-escalate the situation. (150 WORDS)**



## ECONOMY

### I. EMPLOYMENT ISSUES

#### 1. TURNING THE SPOTLIGHT ON THE URBAN POOR

##### SOURCE: THE HINDU

The India Employment Report (IER) 2024 highlights concerns about the trickle-down effect of economic growth on the working class amidst a 5.4% average real economic growth from 2015-16 to 2022-23.

- Divergent trends between rural and urban areas in terms of employment and income are observed.

##### Employment Dynamics in Slums

- Major occupations in Kolkata's slums have remained stable over the decade, with a significant portion engaged in unskilled labour.
- Notable increases in employment are seen in petty businesses/small shops, truck driving and cleaning, and construction-related work.

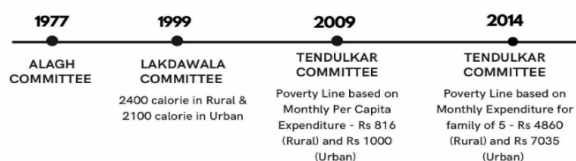
##### Income Trends

- Average monthly income decreased by 5% at constant prices (2012) in 2019 compared to 2012.
- Government employees had the highest income, but their real income decreased by 5% in 2019.
- Significant declines in real income were observed in construction-related work (51%), petty business/small shops (32%), and government service (32%).

##### Shifts in Employment Patterns

- Petty business/small shops and construction-related work indicates a need for more gainful employment options.
- Rise in real income of unskilled labour (33%) and a decrease in the availability of skilled/semi-skilled labour work.

##### Various Committees constituted for Poverty Line Determination



##### Gender Composition and Workforce Participation

- Overall, the percentage of women in the workforce declined by 3% in 2021-22 compared to 2012.
- The rise in female workforce participation observed in non-slum areas contrasts with the decline in slum areas.

##### Concerns

- Casual work, particularly labour work, has increased due to rising wages but offers substandard work conditions without social security.
- Self-employment is on the rise, but without a proportional increase in income, leading to a rise in low-earning petty business owners in slums.

##### MEASURING POVERTY: THE MULTIDIMENSIONAL POVERTY INDEX

India traditionally calculates poverty using the Tendulkar Method, which relies on household consumption data.

##### UNDP's Holistic Approach:

- (UNDP) measures poverty through its Multidimensional Poverty Index (MPI).
- This index has been in use since 2010, providing a comprehensive view of poverty.

##### Components of Multidimensional Poverty:

- **Health:** Includes indicators such as child mortality rates, reflecting the overall health status of a population.
- **Education:** Encompasses factors like years of schooling, assessing access to and quality of education.
- **Standard of Living:** Incorporates elements like access to electricity, clean water, and other essential services, reflecting living conditions.

##### Measurement Approach:

Unlike the Tendulkar Method's focus on household consumption. The Multidimensional Poverty Index (MPI) offers a nuanced understanding of poverty by considering health, education, and standard of living indicators.

It guides policymakers towards targeted interventions by highlighting areas of deprivation in healthcare, education, and infrastructure.

### II. BANKING AND FINANCIAL INTERMEDIARIES

#### 2. WHY HAS INDIA ALLOWED FIIs TO INVEST IN ITS GREEN BONDS?

##### SOURCE: THE HINDU

##### Why in news?

RBI permitted Foreign Institutional Investors (FIIs) to invest in India's Sovereign Green Bonds (SGrBs) on April 5.

- SGrBs are government debt instruments aimed at funding projects to accelerate India's transition to a low carbon economy.

##### Impact on Green Transition:

- Widens the capital pool available for India's ambitious 2070 net zero goals.

- Ensures funding for projects aiming to **increase non-fossil fuel energy sources** and reduce carbon intensity.
- Create new investment opportunities.

## GREEN BONDS

**Green bonds** are debt instruments issued by governments, companies, or organizations to fund projects with environmental benefits. Examples include renewable energy, clean transportation, and sustainable infrastructure.

### Objective:

- Mobilize resources for environmentally friendly projects.
- Promote sustainable development and achieve climate goals (aligns with SDG 7 & 13).

### Key Points:

- **Introduced in India through the Union Budget 2022-23.**
- First Sovereign Green Bonds issued in January 2023.
- **Proceeds used for public sector projects aligned with India's "Panchamrit"** commitments at COP26 (climate action pledges).
- Framework ensures transparency and accountability in green project selection and fund allocation.



### Benefits:

- Promotes environmental sustainability.
- Attracts environmentally conscious investors.
- Supports India's transition to a low-carbon economy.

### Previous Bond Issuance:

- RBI issued SGrBs worth ₹16,000 crore in January and February last year.
- Mainly subscribed by domestic financial institutions and banks, limiting borrowing avenues for the government.

### Financial Implications:

- **SGrBs offer lower interest rates compared to conventional Government-Securities (G-Secs).**
- Banks investing in SGrBs forego interest, termed as a greenium, but align with global trends promoting green investments.

### Role of FIIs:

- FIIs seek to diversify green investments, benefiting from regulatory support.

- **India's transparent Sovereign Green Bonds Framework** attracts FIIs looking to gain green credentials.

## FOREIGN INSTITUTIONAL INVESTORS (FIIs)

Foreign Institutional Investors (FIIs) are entities like insurance companies, pension funds, and sovereign wealth funds from outside the country investing in the financial markets of another nation.

- FIIs play a significant role in providing liquidity and capital to the host country's financial markets, thereby contributing to economic growth and development.

### Impact on Financial Markets:

- FIIs' investments can influence the host country's stock, bond, and currency markets, leading to price fluctuations and volatility.
- They bring in foreign capital, which can strengthen the host country's currency and boost investor confidence.

### Regulatory Considerations:

- The Securities and Exchange Board of India (SEBI) regulates the share of Foreign Institutional Investors (FIIs) in Indian companies.
- As per SEBI regulations, the maximum limit for FII investment in Indian companies is determined by the sectoral cap set by the government or the Reserve Bank of India (RBI).

## 3. MULTILATERAL DEVELOPMENT BANKS

### SOURCE: INDIAN EXPRESS

#### Why in news?

The UN Secretary-General has highlighted the reform of Multilateral Development Banks (MDBs) as a key agenda at the Summit of the Future during the UN General Assembly in September 2024.

#### About Multilateral Development Banks (MDBs)

MDBs are global financial institutions providing financing and advice for economic and social development projects in developing nations.

- **Formation:** Established post-World War II to rebuild war-impacted nations and stabilize the global financial system.
- **Objective:** MDBs prioritize developmental goals like poverty eradication and economic equality over profit maximization.
- **Operations:** They offer low-interest loans, grants, and professional guidance for projects spanning infrastructure, energy, education, and environmental sustainability.
- **Major MDBs:** World Bank Group, Asian Development Bank, African Development Bank, European Bank for Reconstruction and





Development, and Inter-American Development Bank.

### Challenges Faced by MDBs

- **Resource Limitations:** Limited capital often hampers MDBs from funding extensive development initiatives, particularly with rising global demands.
- **Adapting to Global Challenges:** Challenges like climate change, pandemics, and technological shifts require MDBs to evolve their strategies.
- **Decision-making Structures:** Some MDBs' voting systems favor developed countries, leading to calls for increased representation from developing nations.
- **Transparency Concerns:** Issues regarding transparency and accountability in decision-making processes raise concerns about corruption and mismanagement.
- **One-Size-Fits-All Approach:** Uniform lending conditions may not suit the diverse economic structures and capabilities of all countries.

### Reforms Needed in MDBs

- **Financing Climate Initiatives:** MDBs can boost climate change efforts by mobilizing resources for mitigation and adaptation projects, possibly through climate finance facilities and green bonds.
- **Knowledge Sharing & Collaboration:** MDBs can foster knowledge exchange and collaboration among developing nations, facilitating the sharing of successful development strategies.
- **Graduation Strategies:** For middle-income countries, clear transition paths from concessional loans to private financing can ensure that MDB resources cater to countries still requiring significant support.
- **Enhanced Safeguards:** Stronger safeguards should be in place to ensure that MDB-backed projects are socially and environmentally responsible, promoting inclusive and sustainable development.

## III. AGRICULTURE AND ALLIED.

### 4. CDP-SURAKSHA, GOVT'S NEW DIGITAL PLATFORM TO DISBURSE SUBSIDIES TO HORTICULTURE FARMERS

**SOURCE: INDIAN EXPRESS**

**Why in news?**

The Central government has recently introduced a new platform, CDP-SURAKSHA, to streamline the disbursement of subsidies to horticulture farmers under the Cluster Development Programme (CDP).

This initiative aims to bolster India's horticulture sector, which plays a pivotal role in the country's agricultural Gross Value Added (GVA).

### About CDP-SURAKSHA

- **Name:** SURAKSHA stands for "System for Unified Resource Allocation, Knowledge, and Secure Horticulture Assistance."
- **Objective:** Facilitates instant subsidy disbursement to farmers' bank accounts using e-RUPI vouchers from the National Payments Corporation of India (NPCI).

### Features:

- Database integration with PM-KISAN
- Cloud-based server space from NIC
- UIDAI validation
- eRUPI integration
- Local government directory (LGD)
- Content management system
- Geotagging and geo-fencing capabilities

### Working Mechanism

- **User Access:** Open to farmers, vendors, implementing agencies (IA), cluster development agencies (CDAs), and National Horticulture Board (NHB) officials.
- **Order Placement:** Farmers can log in, place orders, and contribute their share of the planting material cost.
- **Payment and Voucher:** Upon payment, an e-RUPI voucher is generated for the vendor supplying the planting material.
- **Verification:** Farmers verify delivery through geo-tagged photos and videos.
- **Subsidy Release:** IAs release funds to vendors upon verification, with the vendor uploading payment invoices to the portal.
- **Subsidy Disbursement:** The subsidy is released to IAs after document verification, allowing farmers to avail subsidies at the first stage.

### Status of Horticulture Sector in India

- **Production:** India ranks 2nd in global fruit and vegetable production, accounting for nearly 90% of horticulture output.
- **Contribution:** The sector contributes about 33% to the agriculture GVA.
- **Production vs. Food Grains:** Despite smaller land area (25.66 million Ha) compared to food grains (127.6 M. ha), horticulture production (320.48 million tons) surpasses food grain production.
- **Productivity:** Horticulture crops have higher productivity (12.49 tonnes/ha) compared to food grains (2.23 tonnes/ha).
- **Exports:** India leads in production of certain vegetables and fruits but holds a mere 1% share in global horticultural market.

- **Wastage:** Approximately 15-20% of fruits and vegetables are wasted, contributing to GHG emissions.

## Cluster Development Programme (CDP):

### About CDP

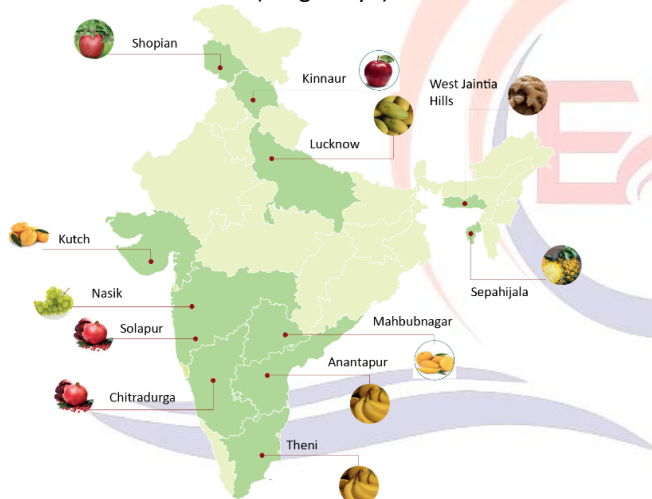
- **Objective:** To develop globally competitive horticulture clusters.
- **Implementation:** Managed by NHB, the programme targets 55 horticulture clusters, starting with 12 in the pilot phase.

### Objectives

- Address major horticulture sector issues from pre-production to marketing.
- **Improve crop exports by 20% and create cluster-specific brands.**
- Converge with other government initiatives like Agriculture Infrastructure Fund.

### Examples of Clusters

- Siphahijala (Tripura) for pineapple
- Solapur (Maharashtra) and Chitradurga (Karnataka) for pomegranate
- West Jaintia Hills (Meghalaya) for turmeric



### Initiatives for Horticulture Sector Development:

- **National Horticulture Board (NHB)** - Established in 1984, it promotes integrated horticulture development.
- **Cluster Development Programme** - Aims for integrated and market-led development across horticulture activities.
- **CHAMAN Project** - Utilizes geo-informatics for horticulture crop estimation.
- **HAPIS** - Web portal for online horticulture data submission.
- **PMKSY** - Addresses irrigation issues to enhance cultivable areas and water efficiency.

### Way Forward

- Effective subsidy disbursal is crucial for enhancing horticulture productivity and supporting farmers' livelihoods.

- **With an estimated demand of 650 Million MT of fruits and vegetables by 2050, there is immense potential for growth in India's horticulture sector.**
- The implementation of CDP-SURAKSHA and other initiatives will play a pivotal role in realizing this potential and ensuring sustainable development of the horticulture sector.

### Mains Question:

Q. Discuss the significance of the CDP-SURAKSHA platform in enhancing the efficiency of subsidy disbursal for horticulture farmers and its potential impact on India's horticulture sector development. (150 WORDS)

## 5. A BITTERSWEET STORY

### SOURCE: THE HINDU

#### Why in news?

**Sugarcane farmers in India are grappling with significant uncertainty.**

- As the new sugar season's crushing period approaches in October, mills have outstanding dues of approximately Rs 3,000 crore from sugarcane purchases made during the 2013-14 season.

#### Sugarcane Cultivation: Economic and Ecological Importance

##### Economic Importance:

##### High Yields:

- Sugarcane offers significantly higher yields compared to other crops, making it a lucrative option for farmers.
- **Its efficient use of water and C4 photosynthesis mechanism contribute to its productivity.**

##### Meeting Fodder Needs:

- Sugarcane leaves serve as a crucial fodder source, particularly in regions like Uttar Pradesh during winter and spring seasons, reducing dependency on other fodder crops.

##### Electricity Generation:

- **Modern sugar mills utilize high-pressure boilers to generate electricity from bagasse, a by-product of sugarcane processing.**
- This electricity generation capacity provides additional income streams for mills.

##### Renewable Energy Source:

- **Bagasse, comprising around 30% of sugarcane's weight, serves as a renewable energy source.**
- Its utilization for biofuel production contributes to sustainable energy practices.

##### Alcohol Production:

- Molasses, a by-product of sugar extraction, is fermented into alcohol.
- **This process provides an additional revenue stream for sugar mills and contributes to the production of ethanol-based products.**



### Ecological Importance:

- **Carbon Sequestration:** Sugarcane exhibits efficient carbon fixation through C4 photosynthesis, contributing to carbon sequestration and mitigating greenhouse gas emissions.
- **Soil Health:** Sugarcane cultivation helps maintain soil health and fertility, enhancing agricultural productivity in subsequent crop cycles.
- **Biodiversity:** Sugarcane fields support diverse ecosystems, providing habitats for various plant and animal species.

### Challenges Faced by Sugarcane Cultivators:

#### Misconceptions:

- **Despite its benefits, sugarcane is often perceived as a water-intensive crop, leading to concerns about water scarcity.**
- Lack of awareness about its carbon fixation capabilities contributes to these misconceptions.

#### Emphasis on Sugar Production:

- There's a disproportionate focus on sugar production from sugarcane, overlooking its potential for other applications such as electricity generation and biofuel production.

#### Underutilization of Bagasse:

- **Bagasse-based electricity generation is underemphasized, with more attention given to conventional energy sources like wind and solar.**
- This underutilization represents a missed opportunity for sustainable energy production.

#### Lack of Policy Support:

- The absence of a robust ethanol-blending program and ineffective implementation of existing policies hinder the wider adoption of ethanol as a fuel additive, limiting the market for sugarcane-derived products.

#### State Government Policies:

- Some state governments prioritize the supply of molasses to liquor manufacturers over the timely payment of sugarcane farmers.
- **This skewed allocation of resources negatively impacts farmer livelihoods.**

## IV. FINANCIAL MARKETS

### 6. RBI DELAYS REGULATIONS ON EXCHANGE-TRADED CURRENCY DERIVATIVES

#### SOURCE: THE HINDU

Why in news?

The Reserve Bank of India (RBI) postponed the implementation of regulations concerning exchange-traded currency derivatives by one month.

- This delay prompted traders to close their positions, adjusting to the extended timeline for compliance with the new regulations.

#### What are Derivatives?

- **Definition:** Derivatives are financial contracts whose value depends on an underlying asset or benchmark. They can include a variety of assets and come with their unique risks.
- **Types:** The most common types of derivatives are futures contracts, forwards, options, and swaps. Their prices fluctuate based on changes in the underlying asset.
- **Purpose:** Derivatives are used for speculation, hedging against risks, and gaining access to additional markets or assets.
- **Trading Venues:** Derivatives can be exchange-traded, where they follow standardized terms and are traded on stock exchanges, or over the counter, where they are privately traded without an intermediary.

#### Exchange Traded Currency Derivatives (ETCDs) :

- **Definition:** ETCDs are financial contracts allowing traders to speculate on future price movements of currency pairs.
- **Trading:** These derivatives are traded on exchanges, and their value is determined by currency exchange rates.

#### Common Types of Derivatives

- **Futures Contracts:** These involve an agreement between two parties to buy or sell an asset at a set price on a specific future date. The asset can be commodities, financial instruments, or indices.
- **Options Contracts:** Options provide the holder with the right, but not the obligation, to buy (call option) or sell (put option) an asset at a predetermined price before a set expiration date.
- **Swaps:** These are agreements to exchange cash flows based on certain financial variables. Types of swaps include interest rate swaps, currency swaps, and commodity swaps. They are often used to manage risks or alter the nature of a debt.
- **Forwards:** Similar to futures but not standardized, forwards are custom agreements between two parties to buy or sell an asset at an agreed-upon price on a future date.

## V. TRADE AND EXTERNAL SECTOR

### 7. INDIA'S DEFENCE EXPORTS GROW 32.5% ON YEAR TO TOUCH RECORD HIGH

#### SOURCE: THE HINDU

Why in news?





In the fiscal year 2023-24, India's defence exports hit a record high of Rs 21,083 crore, marking a significant 32.5% growth from the previous fiscal year.

### Surge Over Last Decade:

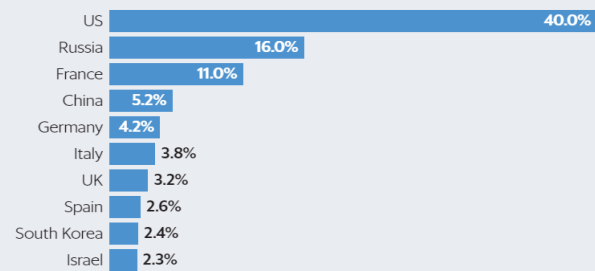
- Over the past decade, there has been a remarkable **31-fold increase in defence exports**, soaring from Rs 4,312 crore in 2004-05 to Rs 88,319 crore in 2014-15, and then to Rs 21,083 crore in 2023-24.

### Private Sector and DPSUs Contribution:

- Both the private sector and Defence Public Sector Undertakings (DPSUs) played significant roles in this achievement, with the **private sector contributing around 60% and DPSUs contributing about 40% to the overall defence exports.**

### India's defence exports ranked well outside the top 25 countries during the period 2018-2022

Share (%) of largest arms exporters between 2018-2022



### Increase in Export Authorizations:

- The quantity of export permits granted to defence exporters increased from 1,414 in FY 2022-23 to 1,507 in FY 2023-24.

### Government Initiatives:

- Policy reforms and 'Ease of Doing Business' initiatives by the Government, coupled with end-to-end digital solutions,** have been crucial in promoting defence exports.

### Global Acceptance:

- The surge in defence exports showcases the global acceptance of Indian defence products and technologies, highlighting India's growing prowess in the global defence market.

## VI. PRELIMS POINTERS IN NEWS

### 8. FINANCIAL SERVICES INSTITUTIONS BUREAU (FSIB)

#### SOURCE: MINT

#### Why in news?

FSIB has recently appointed new CHEIFS for General Insurance Corporation of India (GIC Re) and National Insurance Company (NIC).

#### Establishment and Structure

- Established under the **Department of Financial Services (DFS), Ministry of Finance.**

- Replaced the Bank Board's Bureau (BBB).
- Led by a chairman appointed by the central government.
- Board includes Secretaries of the DFS, IRDAI chairman, and RBI deputy governor.
- Three part-time members** from banking and three from insurance sectors.

#### Functions

- Recommends the appointment of whole-time directors (WTDs) and non-executive chairpersons (NECs) in Public Sector Banks (PSBs), Financial Institutions (FIs), and Public Sector Insurers (PSIs).**
- Advises on appointments, transfers, and terminations.
- Issues guidelines for selecting general managers and directors in public sector general insurance companies.
- Advises on management structure, performance appraisal, and code of conduct.**
- Builds databank on performance.**
- Recommends training and development programs.

#### Decision Making

- Final decisions by the Appointments Committee of the Cabinet, chaired by the Prime Minister.

## 9. BITCOIN HALVING

#### SOURCE: THE HINDU

#### Why in news?

The Bitcoin halving event is approaching, drawing attention from the cryptocurrency community.

#### Purpose of Halving

- Bitcoin was created with a finite supply of 21 million tokens by Satoshi Nakamoto.
- The halving process aims to gradually decrease the rate of new bitcoin generation.
- This process will continue until 2041, at which point all bitcoins will have been mined.

#### Mechanism

- Blockchain technology records information in blocks, which are added to the chain through mining.**
- Miners use computing power to solve complex mathematical puzzles, earning rewards in the form of new bitcoin.
- Halving occurs approximately every four years, after 210,000 blocks are added to the chain.**
- During halving, the reward for miners is halved, reducing the rate of new bitcoin production.

#### Impact on Crypto Market

- Experts anticipate that the halving event may influence Bitcoin's price due to increased scarcity.



- **Reduced bitcoin rewards for miners could lead to upward pressure on prices.**
- The event may also attract new investors to the cryptocurrency market, drawn by the potential for price increases.
- **Overall, the halving event is viewed as a significant event in the cryptocurrency community, with potential implications for market dynamics and investor behaviour.**

## 10. IMPORTED INFLATION

### SOURCE: INDIAN EXPRESS

#### Why in news?

The Asian Development Bank has cautioned India about the potential threat of imported inflation due to the potential depreciation of the rupee against a backdrop of rising interest rates in Western countries.

#### What is Imported Inflation?

- **Imported inflation refers to a sustained increase in prices resulting from the rising costs of imported goods and services.**
- It encompasses price hikes in raw materials and all products or services procured from foreign countries.

#### Factors Leading to Imported Inflation

##### Exchange Rates:

- The fluctuation in exchange rates is a major catalyst for imported inflation.
- A depreciating domestic currency increases the cost of imports, as more currency is required to purchase goods and services from abroad.

##### Commodity Prices:

- Dependence on imported commodities like oil, metals, and agricultural products makes countries vulnerable to global price fluctuations.
- **A surge in global commodity prices can elevate import costs, contributing to inflation.**

##### Trade Policies & Global Supply Chains:

- Alterations in trade policies, including tariffs and quotas, can directly impact the cost structure of imported goods, influencing inflation rates.

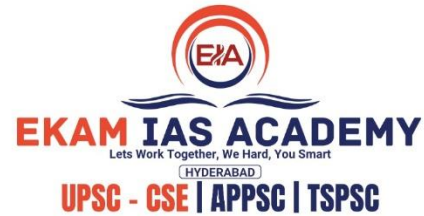
##### Transportation Costs:

- Variations in transportation expenses, driven by factors such as fuel price fluctuations and logistical issues, can amplify the overall cost of imported items.

##### Implications of Imported Inflation

- **Increased Production Costs:** Companies face higher production costs due to expensive imported inputs, prompting them to adjust their pricing strategies.
- **Rising Consumer Prices:** With businesses passing on the increased costs to consumers, domestic

prices surge, leading to higher living costs for the general populace.



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## CURRENT TRENDS OF INDIA'S IMPORTS OF PULSES

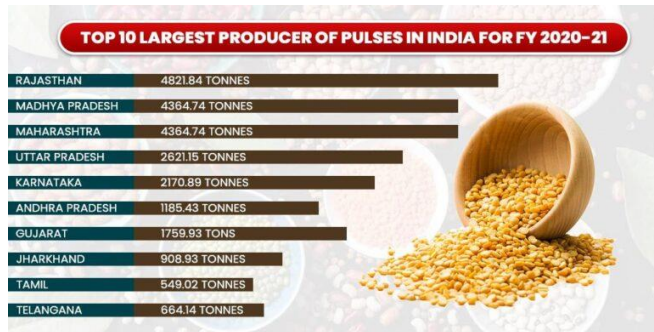
India's imports of pulses surged by 84% in the fiscal year 2024, hitting a six-year peak.

This sharp increase came amid reduced domestic production and the government's move to eliminate import duties on red lentils and yellow peas.

### Pulses Production and Imports Overview

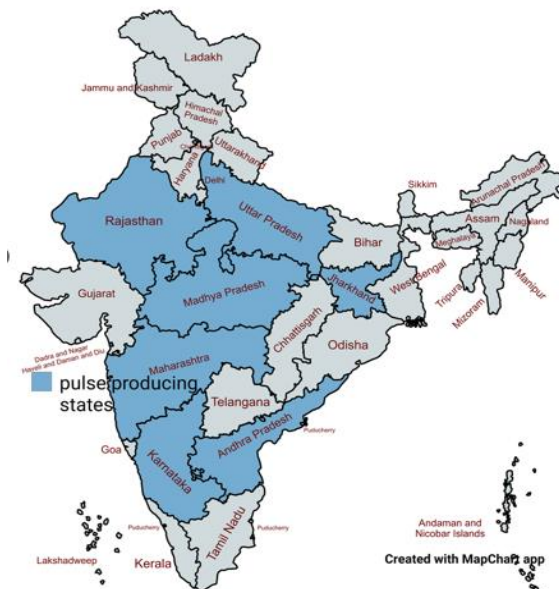
#### India's Global Standing:

- Largest producer, consumer, and importer of pulses in the world.
- Pulses cover 20% of foodgrain area and contribute 7%-10% to total foodgrains production.
- **Top producing states:** Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, and Karnataka.



#### Import Trends:

- Imports surged by 84% in fiscal 2024, reaching a six-year high.
- Total imports in 2023-24: 4.65 million metric tons, valued at USD 3.75 billion.
- Significant increase in red lentil imports from Canada and yellow pea imports from Russia and Turkey.
- **Major import sources:** Canada, Myanmar, Australia, Mozambique, and Tanzania.



### Pulses Cultivation Dynamics

#### Environmental Requirements:

- **Temperature:** 20-27°C
- **Rainfall:** 25-60 cm
- **Soil Type:** Sandy-loamy

#### Nutritional Significance:

- Major protein source in vegetarian diets.
- Leguminous nature aids in nitrogen fixation, enhancing soil fertility.

#### Seasonal Cultivation:

**Rabi Pulses (60% contribution):** Gram, Chana, Masoor, Arhar.

- Require mild cold climate during sowing, cold climate during vegetative to pod development, and warm climate at maturity/harvesting.

**Kharif Pulses:** Moong, Urad, Tur.

- Require warm climate throughout their growth cycle.

### Government Initiatives to Boost Production

#### National Food Security Mission (NFSM)-Pulses:

- Operational in 28 states and 2 Union Territories.
- Key interventions: Assistance to farmers, cropping system demonstrations, seed production, and distribution.

### Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA) Scheme:

#### Components:

- Price Support Scheme (PSS)
- Price Deficiency Payment Scheme (PDPS)
- Private Procurement Stockist Scheme (PPSS)

#### ICAR's Role in Research:

- Conducts basic and strategic research.
- Develops high-yielding varieties and production packages.
- Recognized 343 varieties and hybrids for commercial cultivation from 2014 to 2023.

### Factors Contributing to Import Dependence

- **Shifting Cropping Patterns:** Farmers prefer water-intensive cereals like rice and wheat due to higher profitability and government incentives.
- **Lower Profitability:** Pulses offer lower returns per hectare compared to cereals, discouraging farmers from cultivation.
- **Climate Challenges:** Erratic rainfall and droughts affect pulse production, primarily rain-fed crops.
- **Limited Technological Advancements:** Research and development focus and susceptibility to diseases and pests are lower compared to cereals.

### Strategies for Achieving Self-Sufficiency

- **Boosting Domestic Production:** Competitive minimum support prices (MSPs), subsidies for inputs, and crop insurance schemes. Promoting





crop rotation and developing high-yielding varieties suited to regional conditions.

- **Improving Irrigation Infrastructure:** Expanding irrigation facilities and promoting water-efficient techniques like drip irrigation.
- **Mitigating Price Fluctuations:** Enhancing storage facilities to minimize post-harvest losses and stabilize prices.
- **Streamlining Supply Chain Management:** Enhancing efficiency to reduce transportation costs and minimize price manipulation.
- **Promotion of Alternative Protein Sources:** Encouraging dietary diversification and consumption of protein-rich alternatives.

### Conclusion

India's reliance on pulse imports despite being a major producer underscores the need for comprehensive strategies to achieve self-sufficiency.

**Government initiatives, technological advancements, and sustainable farming practices are crucial for boosting domestic production and mitigating import dependence.**

### UPSC MAINS QUESTION

**Q. Examine the recent surge in India's imports of pulses, highlighting the underlying factors contributing to import dependence. Discuss the strategies and government initiatives required to achieve self-sufficiency in pulse production. (150 WORDS)**

## GEOGRAPHY

### I. GEOLOGICAL PHENOMENON

#### 1. AFAR TRIANGLE

**SOURCE: INDIAN EXPRESS**

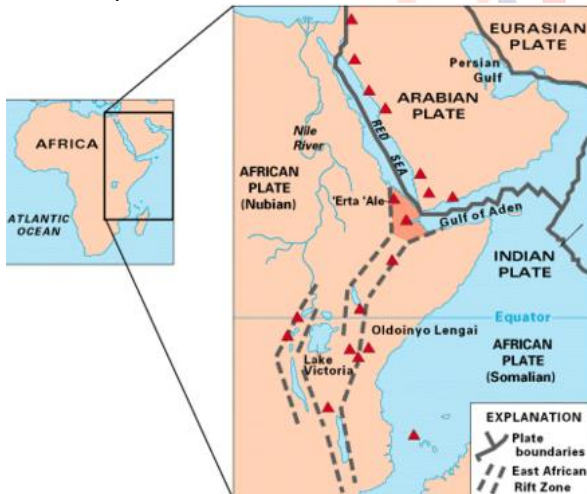
Why in news?

Recent geological studies have unveiled fascinating insights into the Afar Triangle in Africa, suggesting it could evolve into a new ocean in the next 5 to 10 million years.

- This development promises a deeper understanding of Earth's dynamic geological processes, offering a unique window into the planet's ever-changing landscapes.

**About Afar Triangle:**

- Location:** Situated in the Horn of Africa, the Afar Triangle is a geological depression.
- Tectonic Plates:** It is where three major tectonic plates - the Nubian, Somali, and Arabian plates - intersect.
- Significance:** Part of the East African Rift system, it reveals a rich paleontological history, with fossils of early hominins.



**Tectonic Movement and Rift Expansion**

- Historical Movements:** The Afar region has witnessed continuous tectonic activities over millions of years.
- Notable Events:** In 2005, a significant rift opened in the Ethiopian desert, indicating the continent's ongoing separation at the tectonic level.

**Factors Driving Rift's Expansion**

- Mantle Plume:** A massive plume of superheated rocks rising from the Earth's mantle beneath East Africa may be causing the crust to stretch and fracture.

- Magmatism:** Activities, particularly at the Erta Ale volcano, mimic mid-ocean ridge characteristics, indicating significant tectonic transitions.
- Magmatism Defined:** The movement and formation of magma beneath the Earth's surface contribute to various geological phenomena.

**Potential Ocean Formation**

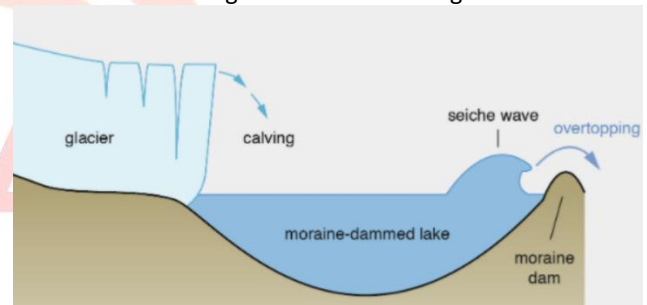
- Alvor-Teide Atlantic Rift:** The continuous rift expansion could lead to a new ocean formation.
- Formation Mechanism:** This would result from the flooding of the Red Sea and the Gulf of Aden over the Afar region, merging into the East African Rift Valley.

#### 2. GLACIAL LAKE OUTBURST FLOODS

**SOURCE: DOWN TO EARTH**

Why in news?

The Uttarakhand government has formed two expert teams to assess the risk of Glacial Lake Outburst Floods (GLOFs) from five hazardous glacial lakes in the region.



**About Glacial Lake Outburst Floods:**

- GLOFs are catastrophic events caused by sudden water discharges from glacial lakes.
- Glacial lakes are formed as glaciers melt, leaving depressions that fill with meltwater, often becoming dammed by unstable ice or debris.
- As glaciers retreat further, these lakes can expand and become increasingly perilous. If the natural barriers holding the water break, it can result in massive flooding downstream.
- Factors triggering GLOFs include glacial calving, where ice breaks off into the lake, causing rapid water displacement, as well as avalanches or landslides destabilizing the lake boundaries.

**GLOFs in Uttarakhand:**

- Uttarakhand houses 13 glacial lakes susceptible to GLOFs, categorized into three risk levels: 'A', 'B', and 'C'.
- Five of these glacial lakes, including Vasudhara Tal in the Dhauliganga basin, Maban Lake in Lassar Yangti Valley, Pyungru Lake in the Darma basin, and two unclassified lakes in the Darma and Kuthi Yangti Valleys in Pithoragarh district, fall into the high-risk 'A' category.

- These assessments aim to understand the potential threats these lakes pose and devise strategies to mitigate the risks, ensuring the safety of downstream communities and infrastructure.

### 3. MOUNT EREBUS

**SOURCE: TIMES OF INDIA**

**Why in news?**

Mount Erebus, a live volcano located in Antarctica, has gained attention for ejecting gold dust valued at \$6000 per day consistently.

- Mount Erebus, located on Ross Island, Antarctica, is Earth's most southerly active volcano, discovered in 1841 by British explorer Sir James Clark Ross. Named after his ship, the Erebus.
- **Type: It's a stratovolcano**, which means it has a conical shape with layers of hardened lava, tephra, and volcanic ash.
- **Lava Lake: Known for its persistent lava lake**, active since at least 1972.
- **Eruptions: Occasionally erupts with Strombolian eruptions**, spewing bombs of molten rock.
- **Monitoring: Researchers monitor it remotely using satellites due to its remote location.**



#### STRATOVOLCANO

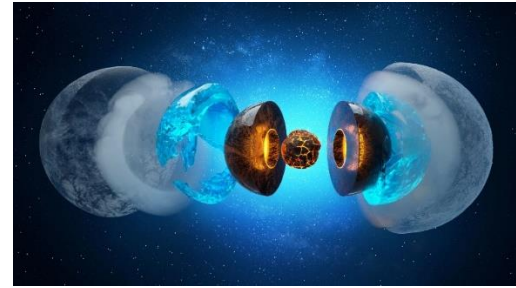
- A stratovolcano, also known as a composite volcano, is a type of volcano characterized by its steep, conical shape and explosive eruptions.
- **These volcanoes are built up over time by layers of hardened lava**, volcanic ash, and other volcanic materials.
- **The eruptions of stratovolcanoes can be highly explosive** and are often accompanied by pyroclastic flows, lava flows, and ashfall. Examples of stratovolcanoes include Mount Fuji in Japan,

### 4. RINGWOODITE

**SOURCE: THE HINDU**

**Why in news?**

Scientists have discovered a hidden ocean 700 km below Earth's surface within a mineral called ringwoodite.



**About Ringwoodite**

- Ringwoodite is a unique mineral found in the Earth's transition zone.
- It has a sponge-like structure that can absorb significant amounts of water and hydrogen.
- **This mineral forms from olivine under extreme pressures and temperatures, above 1,000°C.**

**Water Absorption and Release**

- High pressures and temperatures in the Earth's interior break down water into its components.
- When minerals containing this water move to certain depths, they undergo dehydration and release water to form magmas.
- **This "dehydration melting" is a common process in the shallow mantle, leading to magma formation in many volcanoes.**

**Implications for Earth's Water Cycle**

- The discovery suggests water can be transported from deep within the Earth to its surface, contributing to oceans, rivers, and lakes.
- **This internal water source may also influence volcanic activity and the creation of new crust.**

## II. PRELIMS POINTERS IN NEWS

### 5. ATAL TUNNEL

**SOURCE: TRIBUNEINDIA**

**Why in news?**

Manali-Leh highway blocked due to fresh snowfall near Atal Tunnel in Lahaul and Spiti districts.



**About Atal Tunnel:**

- Atal Tunnel, formerly known as Rohtang Tunnel, is the world's longest high-altitude tunnel.



- Situated at approximately 3,100 meters (10,171 feet) above sea level in the Pir Panjal Range, Himachal Pradesh.
- **Connects Manali to Lahaul and Spiti Valley. It is operational year-round, unlike before when heavy snow cut it off for six months annually.**
- South portal located 25 km from Manali at 3,060 meters altitude: north portal near Teling village, Sissu, Lahaul Valley at 3,071 meters altitude.
- **Tunnel spans 9.02 km, passing through Rohtang pass.**
- Features include a **horseshoe-shaped, double-lane design with an 8-meter roadway** and 5.525 meters overhead clearance.
- **Equipped with safety measures like semi-transverse ventilation, emergency exits every 500 meters, evacuation lighting, broadcasting systems, and fire hydrants.**

## 6. LEAP SECONDS

### SOURCE: SCIENCE NEWS

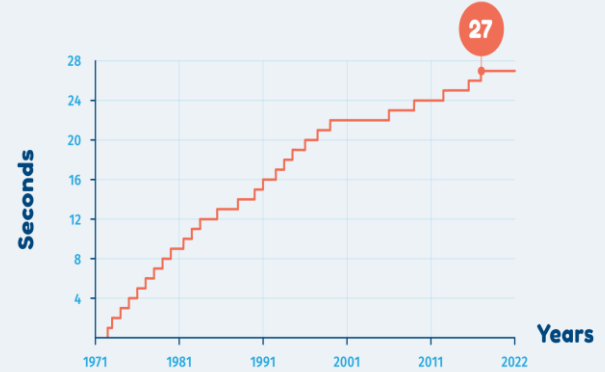
#### Why in news?

A recent study suggests that Earth's shifting rotation, influenced by climate change and geological movements, could lead to clocks needing to subtract a second, possibly requiring a "negative leap second" around 2029.

#### About Leap seconds:

- **The International Earth Rotation and Reference Systems Service (IERS) oversees the monitoring of Earth's rotation and decides when to introduce leap seconds.**
- **Leap seconds are added to Coordinated Universal Time (UTC) to align global clocks with Earth's slowing rotation due to factors like climate change and geological shifts.**
- The system of leap seconds **began in the early 1970s, with 27 positive leap seconds added so far to UTC.**
- UTC is based on a time scale from over 300 precise atomic clocks globally, maintaining accuracy within one second over millions of years.
- **Astronomical Time, known as Universal Time (UT1), represents Earth's rotational speed and determines day length.**
- Earth's rotation isn't consistent due to factors like gravitational forces from the moon, resulting in fluctuating speeds.
- **When the difference between UTC (Atomic time) and UT1 (Astronomical time) nears 0.9 seconds, a leap second is added to UTC.**
- Leap seconds are usually inserted on either **June 30 or December 31 to adjust the time.**

## Leap seconds applied to UTC since 1972



#### About Negative leap seconds:

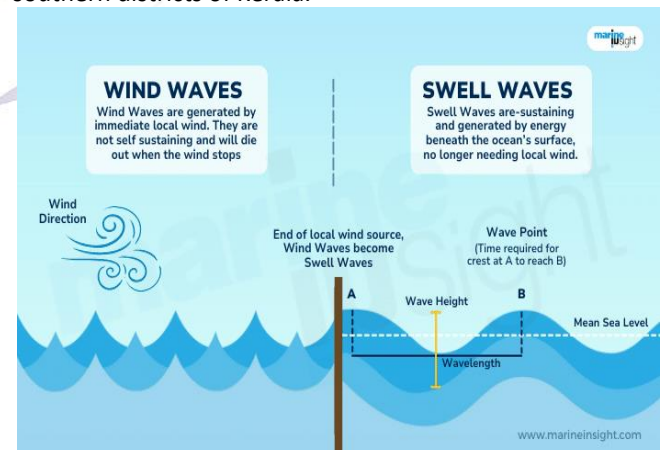
- The concept of negative leap seconds **aims to keep clocks aligned with Earth's changing rotational speed, ensuring accurate timekeeping globally.**
- Negative leap seconds, subtracting time from clocks, have **never been used before** due to Earth's consistently slow rotation in recent decades.
- **The recent increase in Earth's rotation speed made timekeepers consider using negative leap seconds for the first time to maintain synchronization with Earth's rotation.**

## 7. SWELL WAVES

### SOURCE: INDIAN EXPRESS

#### Why in news?

Swell waves recently inundated coastal areas in central and southern districts of Kerala.



#### About Swell waves:

- Swell waves are long wavelength waves formed on the sea surface, composed of a series of surface gravity waves.
- **They are not formed by local winds but by distant storms like hurricanes or long periods of fierce gale winds.**

- Huge energy transfer from air to water during storms leads to the formation of high waves that can travel thousands of kilometres until they reach the shore.
- Swells have a narrower range of frequencies and directions compared to locally generated wind waves because they disperse and lose randomness, taking on a defined shape and direction.
- They can propagate in directions different from the wind and have wavelengths usually less than 150 meters but can occasionally exceed 700 meters in severe storms.
- Swell waves occur without precursors or local wind activity.

## 8. TORRENTIAL RAIN

**SOURCE: THE HINDU**

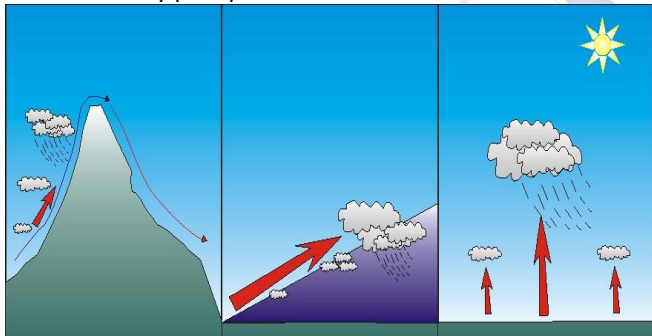
Why in news?

Torrential rain refers to extremely heavy rainfall, often exceeding a certain amount within a specific time period (e.g., exceeding 50 mm/hour or 100 mm/day).

Causes:

Low-pressure systems:

- Convergence of winds within low-pressure systems
- lead to rising air,
- Condensation,
- Heavy precipitation.




**Tropical cyclones:** These intense storms can bring torrential rain due to the high amount of moisture they carry.

**Convection:** Rapid heating of the ground can cause warm air to rise, condense, and produce heavy rain.

Impacts:

- **Floods:** Torrential rain can overwhelm drainage systems, leading to flash floods or riverine floods.
- **Landslides:** Saturation of soil due to heavy rain can trigger landslides, especially on slopes.
- **Infrastructure damage:** Torrential rain can damage roads, bridges, and buildings.




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## HISTORY

### I. ANCIENT HISTORY

#### 1. SIX NEW SITES FROM MADHYA PRADESH WERE ADDED TO TENTATIVE UNESCO LIST OF WORLD HERITAGE SITES

##### SOURCE: INDIAN EXPRESS

##### Why in news?

India's rich cultural and historical heritage has once again been recognized on the global stage with six new sites from Madhya Pradesh making it to the Tentative UNESCO list of World Heritage Sites (WHS).

##### Newly Added Sites to Tentative UNESCO List

##### Gwalior Fort:

- **Location & Overview:** Situated atop a hill, Gwalior Fort offers panoramic views of the city.
- **Historical Significance:** Founded in the 6th century AD by Rajput warrior Suraj Sen, the fort has witnessed numerous invasions and reconstructions.



- **Architectural Marvels:** Houses ancient temples like Teli ka Mandir, Chaturbhuj temple, and Sas Bahu temples. Also, the Gurdwara Data Bandi Chhor commemorates Guru Hargobind Sahib.
- **Cultural Importance:** Mentioned as Gopachala, Gopagiri in ancient Sanskrit inscriptions, highlighting its strategic location.

##### Historical Group of Dhamnar:

- **Overview:** The site includes 51 rock-cut caves, stupas, chaityas, and residences that date back to the 7th century AD.
- **Key Features:** Includes a colossal statue of Gautam Buddha in the nirvana pose and caves like Bari Kacheri and Bhima Bazar.



- **Historical Insights:** Named 'Dhamnar' possibly from the Shaivite term 'Dharmanatha,' indicating its historical and religious significance.

##### Bhojeshwar Mahadev Temple:

- **Overview:** A temple dedicated to Lord Shiva, housing a massive Linga carved from a single stone.



- **Architectural Significance:** Commissioned by Raja Bhoj in the 11th century, it showcases the Bhumija style with Dravidian architectural influences.

##### Chambal Valley Rock Art Sites:

- **Overview:** Hosts the world's largest concentration of rock art sites depicting scenes from various historical periods.



- **Geographical Spread:** Spanning across Madhya Pradesh, Rajasthan, and Uttar Pradesh.
- **Historical Depictions:** Features art from Mesolithic hunter-gatherers to Protohistoric periods, providing insights into ancient human life.

##### Burhanpur's Khooni Bhandara:

- **Overview:** An underground water management system comprising eight waterworks built during the Mughal era.





- **Architectural Design:** Utilizes the Persian qanat approach, with six sets of underground conduits remaining intact to this day.
- **Unique Feature:** The mineral-rich water has a hint of red color, earning it the name 'khooni' (bloody).

### Gond Memorial of Ramnagar, Mandla:

- **Overview:** The area previously referred to as the Central Provinces of India, spanning parts of today's Madhya Pradesh, Chhattisgarh, and Maharashtra, was historically known as Gondwana.



- This region was the ancestral home of the Gond tribe, India's largest heterogeneous tribe. The collection of monuments in this region comprises:
  - Moti Mahal
  - Raibhagat ki Kothi
  - Suraj Mandir (also known as Vishnu Mandir)
  - Begum Mahal
  - Dalbadal Mahal

### India's Contribution to UNESCO's World Heritage Sites

- **Current Status:** India boasts 42 UNESCO World Heritage Sites, with recent additions like Santiniketan in West Bengal and The Sacred Ensembles of the Hoysalas in Karnataka.
- **Previous Recognitions:** Notable sites include The Khajuraho Group of Monuments, Buddhist Monuments of Sanchi, and The Rock Shelters of Bhimbetka.

#### UNESCO's World Heritage Sites

**Definition:** World Heritage Sites are places recognized for their outstanding value to humanity and are protected by UNESCO.

**Tentative List:** A compilation by individual countries of sites considered to possess "outstanding universal value" suitable for World Heritage List inclusion.

**Types of Sites:** Cultural, Natural, and Mixed heritage sites, each with unique significance and values.

## 2. IRON AGE

#### SOURCE: DOWN TO EARTH

##### Why in news?

Archaeologists have reported the uncovering of an extraordinary megalithic site from the Iron Age in Ooragutta, located near Bandala village within the SS Tadvai mandal of Mulugu district, Telangana.



#### About iron age:

- Spanning from approximately 1200 B.C. to 600 B.C., the Iron Age succeeded the Stone Age and Bronze Age in human history.
- It occurred in Africa, Europe, and Asia during prehistoric times.

#### Spread of Iron:

- Iron was discovered during this period and quickly replaced bronze as the preferred metal for various applications.
- Ironworking began in Turkey before spreading to other parts of Europe.

#### Impact on Daily Life:

- Iron tools, such as the 'ard' (iron plow), revolutionized farming by making it more efficient than using wooden or bronze tools.
- Iron swords and weapons were also produced, leading to the formation of formidable armies.

#### Technological Advances:

- Significant technological advancements occurred during the Iron Age, including the construction of large forts, bridges, and improvements in pottery and weaving.

#### End of the Iron Age:

- The Iron Age is considered part of prehistory and ended with the widespread adoption of writing.
- Despite the end of the era, iron remains a crucial material for various applications, including tools, weapons, construction, and machinery.

## II. PRELIMS POINTERS IN NEWS

### 3. LALIT KALA AKADEMI

#### SOURCE: INDIANEXPRESS

##### Why in news?

Recently the Ministry of Culture restricted Lalit Kala Akademi Chairman's powers, preventing him from taking administrative actions.

##### About Lalit Kala Akademi:

- Lalit Kala Akademi (LKA) founded on August 5, 1954, under Societies Registration Act 1860.
- It houses a permanent collection showcasing contemporary, modern, folk, and tribal art of India.

- LKA serves as India's national academy of fine arts, aiming to promote and enhance understanding of Indian art globally.
- It fosters **cultural exchange and promotes Indian visual art through international agreements and exchange programs.**
- The National Exhibition of Art, held annually, stands as LKA's premier event.
- **Funding** for LKA is provided by the **Ministry of Culture.**
- **Regional centers of LKA are located in Chennai, Lucknow, Kolkata, Bhubaneswar, and Garhi.**

## 4. SANNATI BUDDHIST SITE

### SOURCE: THE HINDU

Why in news:

Why in news?

The Sannati Buddhist site, located on the banks of the Bhima river near Kanaganahalli in Kalaburagi district, Karnataka, underwent restoration in 2022 after being neglected since its discovery in the 1990s through ASI excavations.



About Sannati Buddhist site:

- Besides its historical significance, the **site is known for the Chandrala Parameshwari Temple**, attracting tourists to the area.
- The site's history traces back to three constructional phases, spanning from the **Maurya to the Satavahana periods, between the 3rd Century B.C. and 3rd Century A.D.**
- The **Ranamandala** area in Sannati provides a **unique chronological scale, showcasing transitions from prehistoric to early historic times.**
- Notable findings include an **inscription in the Prakrit language using the Brahmi script** and a **stone sculpture depicting Mauryan Emperor Ashoka**, accompanied by his queens and female attendants, with the inscription "Raya Asoko".
- The excavation also unveiled around **60 dome slabs showcasing sculptural renditions of Jataka stories**, significant events in Buddha's life, **portraits of Shatavahana monarchs**, and unique depictions of Buddhist missionaries dispatched by Ashoka.

- Additionally, the **ancient Nagavi Ghatikasthana, labeled as the "Takshashila of the South," is located approximately 40 km from Sannati**, serving as a prominent educational center during the Rashtrakuta and Kalyana Chalukya dynasties from the 10th to 12th centuries.

## 5. 900-YEAR-OLD CHALUKYAN INSCRIPTION DISCOVERED

### SOURCE: THE HINDU

Why in news?

A significant archaeological discovery was made in Gangapuram, Telangana, where a 900-year-old Kannada inscription from the Kalyani Chalukya dynasty was unearthed.

This inscription provides valuable insights into the history and administration of the Chalukyas.

Who were the Chalukyas?

Overview:

- Ruled parts of Southern and Central India from the 6th to the 12th century.
- Kingdom centered around the Raichur Doab, between the Krishna and Tungabhadra rivers.



Distinct Chalukya Dynasties:

Badami Chalukyas:

- Earliest Chalukyas with capital at Badami (Vatapi) in Karnataka.
- Rule began in mid-6th century and declined post the death of King Pulakesin II in 642 AD.

Eastern Chalukyas:

- Emerged in Eastern Deccan after Pulakesin II's death with capital at Vengi.
- Ruled till the 11th century.

Western Chalukyas:

- Descendants of Badami Chalukyas.
- Emerged in late 10th century with capital at Kalyani.





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## Administration and Cultural Contributions of Chalukyas:

### Military Strength:

- Had a comprehensive army including infantry, cavalry, elephant units, and a powerful navy.

### Religious Tolerance:

- Showed tolerance towards Buddhism and Jainism despite being Hindu rulers.

### Literary and Numismatic Contributions:

- Advanced developments in Kannada and Telugu literature.
- Coins featured various inscriptions, temple cryptograms, and symbols like lions, boars, and lotuses.

### Architectural Marvels:

#### Cave Temples:

- Built temples with religious and secular themes adorned with mural paintings.

#### Notable Temples:

- **Aihole temples:** Lady Khan (Surya), Durga, Huchimalligudi.

#### Badami temples.

- Pattadakal Temples: UNESCO World Heritage site with 10 temples in Nagar and Dravida styles, including Virupaksha and Sangameshwara Temples.

#### Aihole Inscription of Pulakesin II:

- **Found in Megudi temple at Aihole, Karnataka.**
- Provides insights into Chalukya history and achievements.
- A lyrical tribute to Chalukya dynasty and King Pulakesin II, highlighting their triumphs and their victory over adversaries like Harshavardhana.

#### Decline of the Chalukya Dynasty:

After the decline of Kalyani Chalukya Kingdom in the 12th century, new kingdoms emerged in South India:

- Yadavas of Devagiri
- Kakatiyas of Warangal
- Hoysalas of Dwarasamudra
- Pandyas of Madurai

This discovery reinforces the importance of preserving and understanding India's rich historical heritage, shedding light on the legacy of the Chalukya dynasty and its contributions to Indian history and culture.

## 6. POMPEII

**SOURCE: TIMES OF INDIA**

### Why in news?

Recent archaeological discoveries in Pompeii include a black-walled banqueting hall adorned with vivid frescoes depicting scenes from Greek mythology.



### About Pompeii:

- **Pompeii is an ancient Roman city near Naples, Italy, situated at the base of Mount Vesuvius.**
- **Originally settled in the Bronze Age, Pompeii grew into a thriving city known for trade and agriculture.**
- The city's population was estimated at 10-12,000, including a significant slave population.
- **Pompeii boasted advanced infrastructure, such as a municipal water system, an amphitheater, and a gymnasium.**
- In 79 CE, Pompeii was buried in volcanic ash during the eruption of Mount Vesuvius, preserving it for centuries.
- Rediscovered in 1748, Pompeii provides valuable insights into Roman daily life due to its exceptional preservation.
- **Pompeii is designated as a UNESCO World Heritage Site, attracting visitors from around the world.**

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## ENVIRONMENT

### I. BIODIVERSITY AND CONSERVATION

#### 1. CORALS

##### SOURCE: DOWN TO EARTH

Why in news?

Why in news?

The NOAA recently announced that an unprecedented rise in ocean temperatures has prompted the onset of the fourth worldwide mass coral bleaching event.

Corals:

- Corals are marine animals that attach themselves to the ocean floor and are unable to move from their location, a characteristic known as being sessile.
- They form a symbiotic relationship with single-celled algae called zooxanthellae, which provide them with food and nutrients through photosynthesis.
- **Coral reefs, often referred to as "rainforests of the sea,"**

Anatomy and Behavior:

- Corals have tentacle-like structures that they use to catch food particles from the water and direct them into their mouths.
- **Each individual coral animal is called a polyp, and they live together in colonies consisting of hundreds to thousands of genetically identical polyps.**
- The two main types of corals are hard coral and soft coral, with hard corals being responsible for building coral reefs.
- **Symbiotic relation between zooxanthellae and coral polyps**

##### The symbiotic relationship

- Corals excrete their wastes to tiny algae.
- The tiny algae produce nutrition for coral polyps.

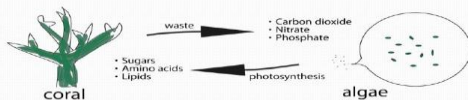


fig.1 Mutualistic, nutritional relationship

Formation of Coral Reefs:

- **Hard corals, with their stony skeletons made of limestone, are the architects of coral reefs, which are complex three-dimensional structures formed over thousands of years.**
- When coral polyps die, their skeletons remain and serve as foundations for new polyps to build upon, gradually expanding the reef.

Significance of Coral Reefs:

- They play a crucial role in marine ecosystems, providing habitats for thousands of species and contributing to biodiversity and ecosystem health.

#### 2. TUNDRA ECOSYSTEMS

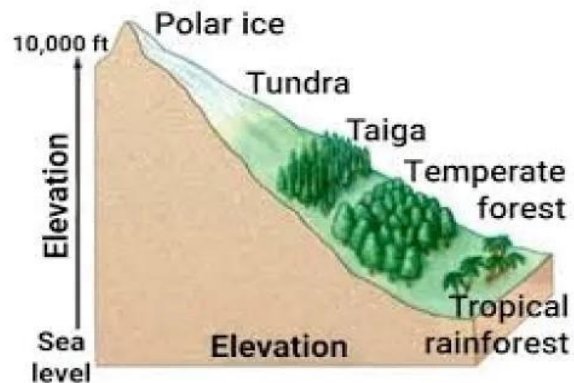
##### SOURCE: DOWN TO EARTH

Why in news?

A study warned that Warming temperatures may transform tundras from carbon sinks to carbon sources, altering their crucial role in carbon storage and affecting global climate patterns.

About Tundra ecosystems:

Tundra ecosystems are found in Arctic regions and atop mountains, characterized by cold climates, strong winds, and minimal rainfall.



Characteristics

- **Temperature:** Tundra regions experience average temperatures ranging from -34 to -6 degrees Celsius (-30 to 20 degrees Fahrenheit).
- **Growing Season:** The short summer lasts only 50 to 60 days, with up to 24 hours of daylight.
- **Permafrost:** Below the surface lies a layer of permanently frozen soil, varying in depth from a few inches to several feet.
- **Precipitation:** Despite being cold, tundras receive low levels of precipitation, mostly as snow.
- **Biodiversity:** Harsh conditions limit plant and animal diversity compared to other ecosystems.
- **Carbon Storage:** Due to slow decomposition rates in the cold, tundras act as significant carbon sinks, storing large amounts of carbon.

Types of Tundra

- **Arctic Tundra:** Located north of the taiga belt in the Northern Hemisphere, covering areas like Canada, Russia, Greenland, Iceland, Norway, Sweden, and Finland.
- **Alpine Tundra:** Found above the tree line in various mountain ranges globally, including the Rockies, Andes, Himalayas, and Alps.

- **Antarctic Tundra:** Encompasses sub-Antarctic islands and parts of Antarctica.

### Flora and Fauna

- **Flora:** Includes mosses, lichens, sedges, cotton grass, and birches, adapted to the harsh conditions.
- **Fauna:** Arctic foxes, snow geese, polar bears, and other cold-adapted animals inhabit the tundra.

## II. RENEWABLE ENERGY

### 3. BRIDGE FUEL

#### SOURCE: UNEP.ORG

##### Why in news:

Natural gas is often being termed a 'bridge fuel' as countries shift from coal and oil dependency towards renewables.

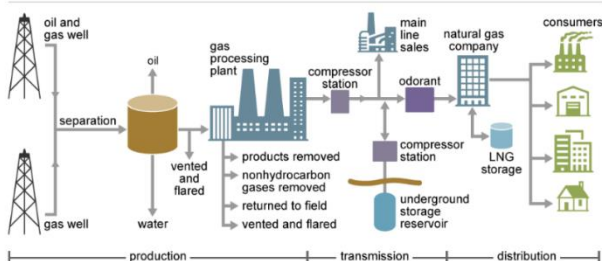
##### About bridge fuel:

- **A bridge fuel is a temporary solution to minimize environmental impact until renewable energy sources are fully deployed.**
- The primary objective is to transition to a cleaner, renewable energy economy with reduced greenhouse gas emissions.
- The **duration of the bridge and the fuel used are subjects of debate** within the energy transition discourse.
- **Natural gas is favoured as a bridge fuel due to its lower greenhouse gas emissions during combustion compared to coal and oil.**

##### About Natural gas:

- Natural gas is a fossil fuel and a non-renewable resource.
- **It is primarily composed of 70-90% methane (CH<sub>4</sub>) along with ethane (C<sub>2</sub>H<sub>6</sub>) and propane (C<sub>3</sub>H<sub>8</sub>), among others.**
- Formation of natural gas occurred over millions of years as organic matter decomposed and transformed under pressure and heat.
- **Natural gas reserves are typically found deep underground alongside coal and crude oil deposits.**
- After extraction, natural gas undergoes processing to remove impurities and convert it into usable forms.

#### Natural gas production and delivery



- **By-products like propane, ethane, and butane are extracted during processing for various industrial and domestic uses.**
- Uses of natural gas include electricity and heat generation, compressed natural gas (CNG) for vehicles, boiler and air conditioner fuel, and fertilizer production, particularly ammonia.
- **It emits 50% less CO<sub>2</sub> compared to coal, making it a cleaner alternative for energy production.**

### 4. INDIA'S FIRST SMALL-SCALE LIQUEFIED NATURAL GAS (SSLNG) UNIT AT GAIL

#### SOURCE: INDIAN EXPRESS

##### Why in news?

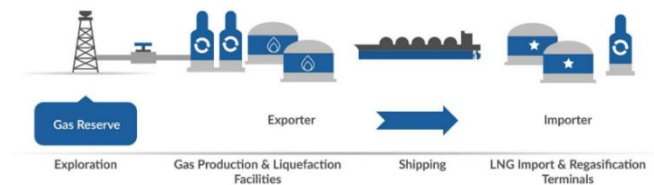
**India is taking significant strides towards a greener energy future by diversifying its energy mix.**

The recent inauguration of India's first small-scale liquefied natural gas (SSLNG) unit at GAIL (India) Ltd's Vijapur complex in Madhya Pradesh is a pivotal step in this direction. This initiative aligns with the government's **goal to increase the share of natural gas in the country's primary energy mix to 15% by 2030.**

##### What is LNG and SSLNG?

##### Liquefied Natural Gas (LNG):

- **LNG is natural gas cooled to a liquid state at about -260°F (-162°C).**
- It facilitates easier and safer storage and transportation of natural gas.
- **Natural gas is predominantly methane, making up 70-90% of its composition.**
- It's a cleaner and more economical alternative to coal and oil.
- **Currently, natural gas accounts for 6.7% of India's energy basket.**
- Globally, natural gas contributes to about a quarter of electricity generation.
- **Major producers include the United States, Russia, and Iran.**

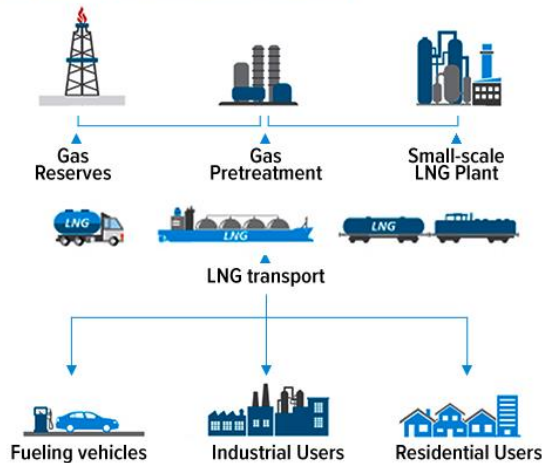


##### Small-Scale LNG (SSLNG):

- **SSLNG involves liquefying and transporting natural gas on a smaller scale.**
- It caters to areas without pipeline connections using specialized trucks and vessels.
- **SSLNG can deliver LNG directly to consumers using cryogenic road tankers or compact vessels.**

- It reduces dependency on costly gas imports, leading to foreign exchange savings.
- **SSLNG aids India's shift towards cleaner and more sustainable fuel options.**

### THE SMALL-SCALE LNG JOURNEY



### Major Applications of SSLNG:

#### Transportation:

- **Marine Fuel:** LNG is used as a cleaner fuel for ships and vessels, especially in emission-controlled zones.
- **Road Transport:** LNG powers trucks, buses, and heavy-duty vehicles, reducing emissions compared to diesel.

#### Industrial Applications:

- **Power Generation:** LNG is used in gas-fired power plants, offering cleaner energy with lower emissions.
- **Heating and Cooling:** Used in industrial processes for heating, cooling, and refrigeration.

#### Energy Storage and Backup:

- **Renewable Energy Integration:** LNG complements renewable sources like wind and solar by providing backup power.

#### Related Challenges:

- **High Costs:** Establishing LNG facilities and transportation requires significant investment.
- **Environmental Impacts:** While cleaner than coal, LNG production and transportation emit methane, a potent greenhouse gas.
- **Safety Concerns:** LPG, a component of LNG, is flammable and requires careful handling to prevent accidents.

### What is Compressed Natural Gas (CNG)?

#### About CNG:

- **CNG refers to natural gas subjected to high-pressure compression.**
- Compressed at pressures of 200 to 250 kg/cm<sup>2</sup>, reducing volume significantly.
- **Primarily consists of 80-90% methane.**

- **Unlike LNG, CNG remains in a gaseous state.**

#### Advantages of CNG:

- **Safety:** Lighter than air, disperses quickly in case of leaks.
- **Environmental Benefits:** Clean burning with reduced greenhouse gas emissions.
- **Cost-effective:** Lower costs compared to petrol and diesel with a higher calorific value.

#### Disadvantages of CNG:

- **Infrastructure:** Requires larger fuel tanks and has limited range per fill-up.
- **Availability:** Fewer filling stations compared to conventional fuels.
- **Vehicle Retrofitting:** Adapting older vehicles for CNG can be challenging.

#### About BioCNG:

- **BioCNG, or biomethane, is a renewable, clean-burning transportation fuel.**
- **Produced by upgrading biogas to natural gas quality.**
- Derived from organic waste, offering an environmentally friendly alternative to fossil fuels.

India's efforts towards integrating SSLNG and expanding CNG infrastructure demonstrate a commitment to cleaner and sustainable energy solutions.

**These initiatives not only reduce environmental impact but also contribute to energy security and economic growth.**

### MAINS QUESTION:

Q. "Discuss the significance of Small-Scale Liquefied Natural Gas (SSLNG) and Compressed Natural Gas (CNG) in India's transition towards cleaner and sustainable energy sources." (150 WORDS)

### 5. SOLAR SURGE

#### SOURCE: THE HINDU

#### Why in news?

India's government has enacted a policy to reduce dependency on imported solar panels, mandating certification for domestic manufacturers through the National Institute of Solar Energy (NISE).

Being listed as an 'approved' manufacturing facility allows companies to compete for government tenders, including the PM solar rooftop scheme.

#### Background:

- **Objective:** The policy aims to decrease reliance on Chinese imports, which dominate 80% of the global supply, amid strained diplomatic relations.
- **Ambitious Targets:** India aims to source 500 GW, nearly half its electricity requirement, from non-fossil fuel sources by 2030, with at least 280 GW from solar power. This necessitates adding 40 GW of solar capacity annually until 2030.



- **Challenges:** Despite assertions of being on track, the country has struggled to install sufficient solar capacity, particularly during the COVID-19 pandemic, with installations barely reaching 13 GW in the last five years.

### Challenges Faced:

- **Supply Shortage:** Meeting targets requires more panels and component cells than the domestic industry can provide, resulting in reliance on imports.
- **Dilemma for Domestic Manufacturers:** Domestic panel manufacturers face the challenge of paying for certification while losing orders to cheaper Chinese panels.

## III. FOREST CONSERVATION

### 6. FORESTS A NATIONAL ASSET AND MAJOR CONTRIBUTOR TO FINANCIAL WEALTH: SC

#### SOURCE: PIB

#### Why in news?

The Supreme Court made a significant ruling stating that now it's real and possible to use ideas like carbon credit and green accounting to figure out how wealthy a country is and crucial for the country's financial wealth.

#### Case Details:

- The judgment stemmed from an appeal by the State of Telangana against a High Court decision to grant forest land to a private individual.
- The State's Forest officials worsened the situation by submitting conflicting affidavits in court.

#### Criticism of Forest Conservation Act:

- The ruling coincided with criticism of the Forest Conservation Amendment Act 2023, which allegedly facilitates encroachments in protected forests and permits commercial exploitation.
- Concerns were raised about the Act's impact on forest preservation and biodiversity.

#### FOREST CONSERVATION AMENDMENT ACT 2023

##### Definition of Forest Land:

- The Act defines forest land broadly, encompassing areas recorded as forest on government records since October 25, 1980, with exceptions for certain conversions before December 1996.

##### Restrictions on Land Diversion:

- **Prior approval from the central government is necessary** for any diversion of forest land for non-forestry purposes. This requirement applies to all entities, including private ones.

##### Exemptions for Temporary Activities:

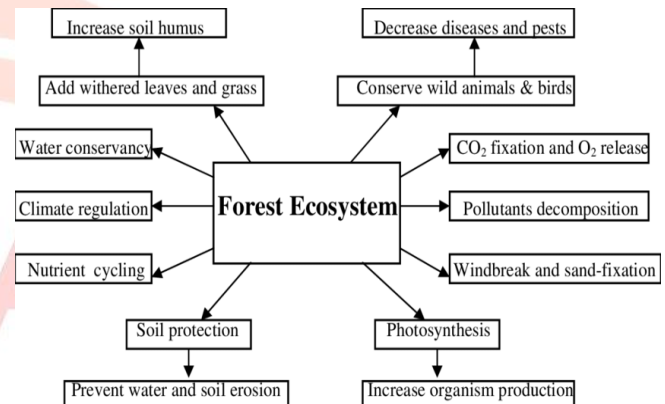
- Certain temporary activities like establishing check posts, fire lines, fencing, and wireless communication for forest management are exempted from being considered as non-forestry, provided they don't permanently alter land use.

#### Expansion of Permissible Activities:

- permissible activities within forests, infrastructure development for frontline forest staff, ecotourism projects, zoos, and safaris.

#### Strategic Considerations:

- Strategic linear projects of national importance related to security within 100 kilometers of India's borders are exempted from forest land use approval.
- security-related infrastructure projects can utilize up to 10 hectares of forest land without central government consent.



#### Indian government initiatives to protect its forests:

- **Legal Framework:** acts like the Indian Forest Act (1927), the Forest Conservation Act (1980), and the Wildlife Protection Act (1972) that regulate forest management, prohibit deforestation, and punish violators.
- **Protected Areas:** Designation of National Parks, Wildlife Sanctuaries, and Tiger Reserves to conserve biodiversity and limit human activity.
- **Afforestation Schemes:** National Afforestation Programme (NAP) and Green India Mission (GIM) to promote planting of trees and increase forest cover.
- **Joint Forest Management:** Involving local communities in forest protection and decision-making for sustainable forest management.
- **Compensatory Afforestation:** Planting trees to compensate for forest land used for development projects.
- **Tribal Rights:** Recognizing the rights of forest dwelling communities and incorporating their traditional knowledge in forest conservation efforts.

## 7. GLOBAL FOREST WATCH

### SOURCE: THE HINDU

#### Why in news?

According to the latest data from the Global Forest Watch monitoring project, India has seen a loss of 2.33 million hectares of tree cover since 2000.

#### About GFW:

- Open-source web application **monitoring global forests** in near real-time.
- Utilizes satellite data and inputs from various sources.
- Managed by the **World Resources Institute (WRI)**, based in Washington.
- Data primarily compiled by researchers from the University of Maryland.

#### Key Features of GFW

- Free and user-friendly platform enabling custom mapping, trend analysis, alerts, and data download.
- **Relies on tree cover as a metric for forest extent and change, easily measurable from space.**

#### Highlights from GFW's Annual Forest Loss Data

- Global decline of 9% in primary forest loss in the tropics in 2023.
- **Approximately 37,000 square kilometers of tropical primary forest lost, equivalent to Switzerland's size.**
- Brazil, the Democratic Republic of Congo, and Bolivia lead in tropical primary forest losses.

#### Forest Loss in India

- India lost 2.33 million hectares of tree cover since 2000, a 6% decrease.
- **4,14,000 hectares of humid primary forest lost from 2002 to 2023, comprising 18% of total tree cover loss.**
- Forests in India act as a net carbon sink, sequestering 89.9 million tons of carbon dioxide equivalent annually.
- **95% of tree cover loss occurred within natural forests.**
- Five states, including Assam, Mizoram, Arunachal Pradesh, Nagaland, and Manipur, account for 60% of tree cover losses.

## IV. DISASTERS

### 8. WHAT'S BEHIND HEAVY RAINFALL IN DUBAI

### SOURCE: INDIAN EXPRESS

#### Why in news?

The United Arab Emirates (UAE) recently witnessed an unprecedented rainstorm, making it the heaviest rainfall recorded since 1949.

- This event had significant impacts on daily life, infrastructure, and transportation across the UAE.

#### Heavy Rainfall Records Broken

- **Dubai:** Received over 142 millimeters of rain in one night, surpassing its average yearly rainfall of 94.7 millimeters.
- **Al Ain:** Recorded 254 millimeters of rain.
- **Fujairah:** Saw 145 millimeters of rain.

#### Impact on Daily Life

- **Flooding:** Widespread flooding occurred in homes, major roads, and shopping centres such as Dubai Mall and Mall of the Emirates.
- **Transportation:** Air travel faced severe disruptions, leading to flight suspensions and significant delays at Dubai International Airport.
- **Education and Work:** Schools across the UAE were closed, and the government implemented work-from-home directives to manage the situation.

#### Tragic Outcomes in Oman

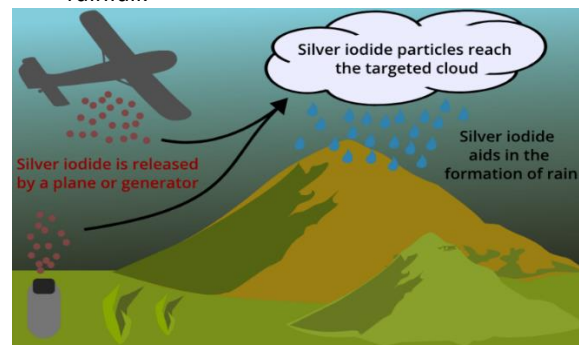
- **Casualties:** In neighboring Oman, the rain led to the unfortunate deaths of 18 people, including school children.

#### Reasons for Heavy Rains Storm System

- **Arabian Peninsula:** A significant storm system moved across the region, bringing unusually high rainfall to the UAE.

#### Cloud Seeding

- **Technology:** The UAE employed cloud seeding techniques, where salt mixtures were sprayed into clouds to induce rain.
- **Efforts:** Meteorologists conducted six or seven cloud-seeding flights before the storm to enhance rainfall.



#### Climate Change

- **Global Warming:** Rising temperatures due to global warming might have contributed to this event. Higher temperatures result in more water evaporating, enabling the atmosphere to retain greater moisture.

- **Temperature Rise:** The UAE has experienced a temperature increase of almost 1.5 degrees Celsius over the last 60 years.

### Natural Climate Variability

- **El Niño and La Niña:** Natural climate patterns like El Niño and La Niña also play a role in influencing weather extremes, making it challenging to directly link this event solely to climate change.

### About Cloud Seeding

Cloud seeding is a weather modification technique aimed at enhancing precipitation in clouds to increase rainfall.

- **This process involves dispersing substances, such as silver iodide or salt, into clouds to encourage the formation of ice crystals or water droplets.**
- As these particles accumulate, they promote cloud growth and precipitation.
- **Meteorologists and scientists use aircraft or ground-based generators to release these seeding agents into suitable clouds.**
- While cloud seeding has been employed in various regions worldwide to address water scarcity and manage weather conditions, its effectiveness remains a subject of ongoing research and debate in the scientific community.

## V. PRELIMS POINTERS IN NEWS

### 9. INDIAN LAUREL TREE

#### SOURCE: THE HINDU

#### Why in news?

Forest department authorities in Andhra Pradesh's Alluri Sitharama Raju district recently cut the bark of an Indian laurel tree, resulting in the release of water.



#### About the Indian Laurel Tree

- **Scientific Name:** Terminalia elliptica (also known as T. tomentosa)
- **Common Names:** The tree is known by various names across regions including Asna, saj, saaj, Indian laurel, marutham (Tamil), matti (Kannada), ain (Marathi), taukkyan (Burma), and asana (Sri Lanka). It's also called 'crocodile bark' due to its distinctive bark pattern.

- **Habitat:** The Indian laurel tree thrives in both dry and moist deciduous forests, primarily found in southern India up to an altitude of 1000 meters.
- **Geographical Distribution:** Native to southern and Southeast Asia, it is found in countries like India, Nepal, Bangladesh, Myanmar, Thailand, Laos, Cambodia, and Vietnam.



#### Applications of Indian Laurel Tree

- **Wood Usage:** The tree's wood is employed in various applications such as furniture, cabinetry, joinery, boat-building, and decorative veneers. **It is also used for crafting musical instruments like guitar fretboards.**
- **Silkworm Food:** The leaves serve as food for Antheraea paphia silkworms, which produce tussar silk—a commercially important wild silk.
- **Medicinal Uses:** The bark has medicinal properties and is used to treat diarrhoea. Oxalic acid can be extracted from it.
- **Dye and Tanning:** Both the bark and the fruit yield substances like pyrogallol and catechol, which are used for dyeing and tanning leather.

### 10. PURPLE-STRIPED JELLYFISH

#### SOURCE: THE HINDU

#### Why in news?

Recently, marine researchers observed a significant increase in the population of venomous mauve stinger or purple-striped jellyfish along the Visakhapatnam coast.



#### About purple-striped jellyfish:

- **Purple-striped jellyfish are characterized by their blue-purple coloration and globe-shaped umbrella covered in orange-brown warts.**

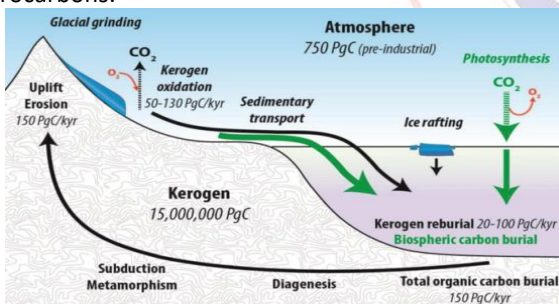


- These jellyfish **primarily inhabit the open ocean** but can also survive in benthic and temperate coastal habitats.
- They have a global distribution, being **found in tropical and warm-temperature seas across the Indo-Pacific, Atlantic Ocean, and the Mediterranean Sea.**
- A unique feature of the purple-striped jellyfish is that they possess stingers not only on their tentacles but also on their bell, which can produce light in the dark due to bioluminescence.
- **Purple-striped jellyfish are venomous, and their stings can cause various symptoms such as diarrhea, extreme pain, vomiting, and even anaphylactic shock.**
- The observed increase in the jellyfish population is termed a bloom, which occurs when the species' population grows rapidly within a short period.
- **Marine biologists attribute the frequent occurrence of jellyfish blooms to rising ocean temperatures, which contribute to increased reproduction rates and population growth among jellyfish species.**

## 11. KEROGEN

### SOURCE: DOWN TO EARTH

Kerogen is a natural organic material found in rocky underground formations, primarily serving as the source of hydrocarbons.



- It constitutes about **90% of the organic carbon in sediments and is insoluble in organic solvents.**
- Kerogen is typically composed of **organic constituents such as algae and woody plant material.**
- It can expel hydrocarbons when subjected to thermal cracking processes.
- **Kerogen contains both lighter and heavier hydrocarbons and acts as a precursor to oil and natural gas.**
- There are three main types of kerogens: **Type I, Type II, and Type III, each originating from different sources like algae, mixed terrestrial and marine material, and woody terrestrial material, respectively.**

- The types of kerogens present in a rock determine the type of hydrocarbons generated, with variations in hydrogen content influencing oil vs. gas yields.
- **Kerogen undergoes transformation into bitumen during petroleum generation processes, contributing to the formation of hydrocarbons.**

## 12. BUMBLEBEES

### SOURCE: SCIENCE DAILY

Bumblebees are large, hairy bees belonging to the family Apidae, which also includes honey bees and other types of bees.



- They are distributed worldwide but are most common in temperate climates, with over 250 known species primarily found in the Northern Hemisphere.
- **Known for their ability to collect nectar from flowers and pollinate plants, bumblebees are essential for ecosystem health.**
- Bumblebees are typically large, with yellow and black coloration, though there is variation among species, with some having red, yellow, and black bands.
- **They have stocky bodies covered in hairs that attract pollen, and their wings beat rapidly at 130-240 beats per second.**
- **Bumblebees are social insects living in colonies with specific roles for the queen, drones, and worker bees.**
- Unlike honeybees, **bumblebees do not produce honey**; instead, new queens hibernate over winter and establish new nests in the spring.

## 13. HYDROGEL

### SOURCE: THE HINDU

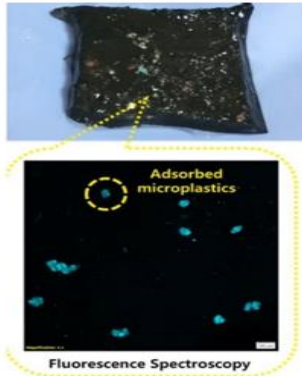
**Why in news?**

Researchers at the Indian Institute of Science (IISc) have designed a sustainable hydrogel to remove microplastics from water.

**About hydrogel**

- Three-dimensional network of hydrophobic polymers crosslinked with water-soluble polymers.
- Retains large amounts of water without altering its structure.
- Exhibits flexibility and swelling properties.
- Responsive to environmental factors like temperature, pH, and salt concentration.

### Key Features of the Sustainable Hydrogel



- **Developed by researchers at the Indian Institute of Science (IISc).**
- Utilizes an intertwined polymer network to bind and degrade microplastic contaminants.
- **Comprises three polymer layers: chitosan, polyvinyl alcohol, and polyaniline.**
- Forms an interpenetrating polymer network (IPN) architecture.
- **Infused with nanoclusters of copper substitute polyoxometalate (Cu-POM) as catalysts.**
- Catalysts activated by UV light irradiation to degrade microplastics effectively.
- Results in a robust hydrogel capable of adsorbing and degrading significant amounts of microplastics.

### Efficiency of the Hydrogel

- Demonstrated removal rates of approximately 95% and 93% for two types of microplastics.
- Effective at near-neutral pH levels (~6.5).

### MICROPLASTICS

- Defined as plastic debris smaller than 5 mm.
- Two main types: **primary and secondary.**
- **Primary** microplastics intentionally manufactured for **commercial use.**
- **Secondary** microplastics formed from the degradation of larger plastic objects due to **environmental exposure.**

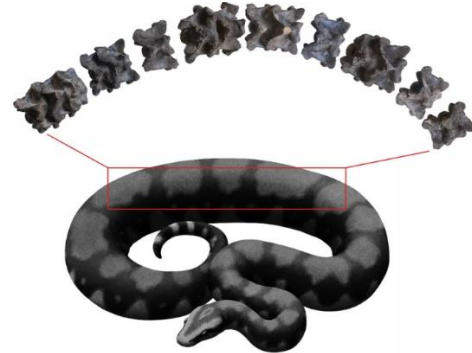


## 14. VASUKI INDICUS

### SOURCE: THE HINDU

#### Why in news?

Researchers have recently uncovered fossils of Vasuki Indicus, one of the largest snakes ever discovered. These fossils were found in Kutch, Gujarat.



- **Mythological Reference:** The snake is named Vasuki Indicus, with "Vasuki" referring to the mythical serpent often associated with the Hindu deity Shiva.
- **Time Period:** Vasuki Indicus lived during the Middle Eocene period, approximately 47 million years ago, in India.
- **Climate Conditions:** During its existence, the climate was relatively warm, with temperatures around 28°C.
- **Taxonomic Classification:** It belonged to the now-extinct Madtsoiidae snake family but represents a unique lineage native to India.

#### Historical Distribution:

- **Madtsoiidae snakes were terrestrial and originated from Gondwana.**
- They spread from India to southern Eurasia and eventually into North Africa after the collision of the Indian subcontinent with Eurasia around 50 million years ago.

#### Physical Characteristics:

- **Vasuki Indicus was estimated to reach lengths of 10 to 15 meters and weigh around 1 tonne.**
- It likely had a broad, cylindrical body, indicating a robust and powerful build similar to Titanoboa, one of the largest snakes known to have existed.

#### Behaviour:

- It was believed to be a slow-moving ambush predator, using constriction to subdue its prey, similar to modern-day anacondas and pythons.

## 15. ASHWAGANDHA

### SOURCE: INDIAN EXPRESS

Ashwagandha is gaining popularity both in India and internationally for its medicinal properties.



## Origin:

- Also known as Indian ginseng or Indian winter cherry, Ashwagandha is an evergreen shrub native to India, northern Africa, and the Middle East.
- Its scientific name is *Withania somnifera*, and its name derives from the root's horse-like smell ("ashwa" for horse and "gandha" for smell).

## Family:

- Ashwagandha belongs to the Solanaceae family, the same family as tomatoes and potatoes.

## Traditional Use:

- The shrub has been used in traditional Ayurvedic medicine for thousands of years.

## Health Benefits:

- Ashwagandha is considered an adaptogen, aiding the body in adapting to stress and promoting balance.
- It offers various health benefits, including reducing inflammation, boosting energy, alleviating anxiety, easing pain, and improving sleep quality.

## Bioactive Compounds:

- Different parts of the Ashwagandha plant, such as the roots, leaves, and berries, contain varying concentrations of bioactive compounds.
- Notably, withanolides are naturally occurring steroid compounds found in Ashwagandha, known for their antioxidant and anti-inflammatory properties.

## 16. SOIL ACIDIFICATION

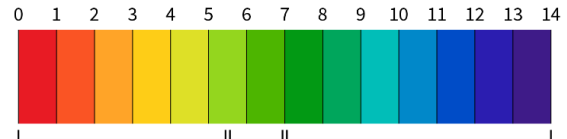
### SOURCE: DOWN TO EARTH

#### Why in news?

Over 30% of India's cultivable land is reported to have acidic soil, affecting plant growth and productivity.

#### Soil Acidification

- Soil acidification is a gradual decrease in soil pH over time, affecting both surface and subsoil.
- The process is exacerbated by intensive agricultural practices, especially in certain regions.



#### Acidic Soil (low pH)

At pH levels lower than 5.5, aluminum and manganese can become highly available to the point of being toxic. At similarly low pH levels, other elements like nitrogen, calcium, phosphorous, magnesium, and potassium become less available for absorption by plants.

#### Slightly Acidic to Neutral Soil

Ideal soil conditions for most plants

#### Alkaline Soil (high pH)

When the pH level of soil is above 7, elements like iron, zinc, copper, boron, phosphorous, and manganese also become less available for absorption by plants

## Contributing Factors

- High levels of ammonium-based nitrogen fertilizers contribute to soil acidity.
- Leaching of nitrate nitrogen from fertilizers further intensifies soil acidification.
- Removal of alkaline plant materials during harvesting adds to soil acidity.

## Impact on Soil and Plants

- Acidification leads to depletion of soil inorganic carbon, crucial for soil health and ecosystem services.
- Reduced soil pH limits the availability of essential plant nutrients, affecting crop growth.
- Acidic soils make plants more susceptible to various stress factors, both biotic and abiotic, compromising overall plant health and productivity.

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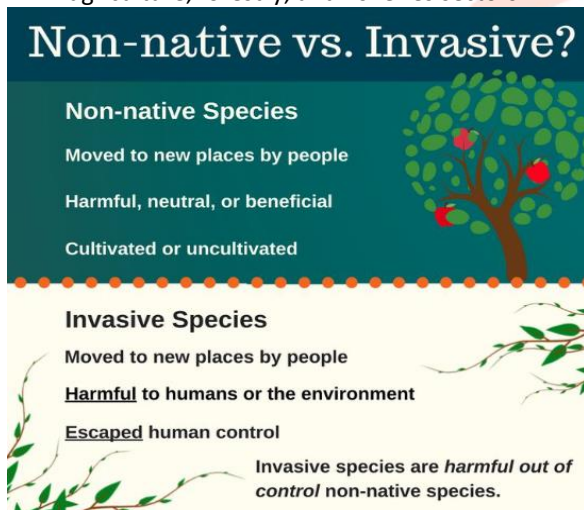


## INVASIVE ALIEN SPECIES (IAS)

**Invasive Alien Species (IAS) have emerged as a significant environmental concern, especially in regions like the Andaman and Nicobar Islands.** These species, once introduced, can pose severe threats to native ecosystems, biodiversity, and human livelihoods.

### About Invasive Alien Species (IAS):

- **Definition:** IAS are non-native organisms introduced into new environments, including plants, animals, and pathogens, which can cause harm to local biodiversity, economy, and human health.
- **Characteristics:** They possess the ability to "arrive, survive, and thrive" in new environments, often outcompeting native species for resources.
- **Impact:** They can disrupt local ecosystems, lead to the decline or extinction of native species, and negatively affect human livelihoods, particularly in agriculture, forestry, and fisheries sectors.



### Examples of IAS in India:

- **Wildlife:** African catfish, Nile tilapia, red-bellied piranha, and alligator gar are among the invasive species threatening India's ecosystems.
- **Aquatic Species:** The North American turtle, Red-eared Slider, introduced as a pet, has become invasive, impacting native aquatic species.

### Impact on Native Flora and Fauna:

- **Threat to Biodiversity:** 1 in 10 species listed on the IUCN Red List are threatened by IAS.
- **Ecosystem Disruption:** IAS disrupt natural food chains and ecological balance, often dominating habitats and leading to the extinction of native species.
- **Case Study:** In Keoladeo National Park, Rajasthan, African catfish have altered the park's ecological dynamics by preying on waterfowl and migratory birds.

### Amplifying Factors:

- **Environmental Factors:** Climate change, pollution, habitat loss, and human disturbances can exacerbate the impact of IAS, further disrupting ecosystems and human well-being.
- **Global Goals:** United Nations Sustainable Development Goal 15 highlights the risks posed by biological invasions to human health, food security, and livelihoods.

### Economic Implications of IAS:

- **Global Costs:** The IPBES reported over 37,000 established alien species globally, with annual economic costs exceeding USD 423 billion.
- **Impact on India:** A study estimates the economic cost of biological invasions in India to reach up to USD 182.6 billion, indicating significant economic repercussions.
- **Case Example:** The cotton mealybug has caused substantial yield losses in cotton crops in the Deccan region.

### Initiatives for Managing IAS:

#### Global Initiatives:

- **Convention on Biological Diversity (CBD):** CBD aims to prevent, control, or eradicate alien species threatening ecosystems, habitats, or species through global guidelines and coordination.
- **Kunming-Montreal Global Biodiversity Framework:** This framework requires member states, including India, to reduce the impact of IAS on biodiversity and ecosystem services by 50% by 2030.
- **IUCN Invasive Species Specialist Group (ISSG):** Manages databases on invasive species and provides information to support global management efforts.

#### National Initiatives in India:

- **National Biodiversity Action Plan:** Focuses on preventing and managing invasive species as one of its key targets.
- **National Action Plan on Invasive Alien Species (NAPINVAS):** Launched by MoEFCC, it emphasizes preventing new introductions, early detection, and management of established IAS.
- **National Invasive Species Information Center (NISIC):** it Raises awareness and gives information on invasive species in India.
- **Plant Quarantine (Regulation of Import into India) Order, 2003:** Regulates the import of plants and plant material to prevent the introduction of IAS.



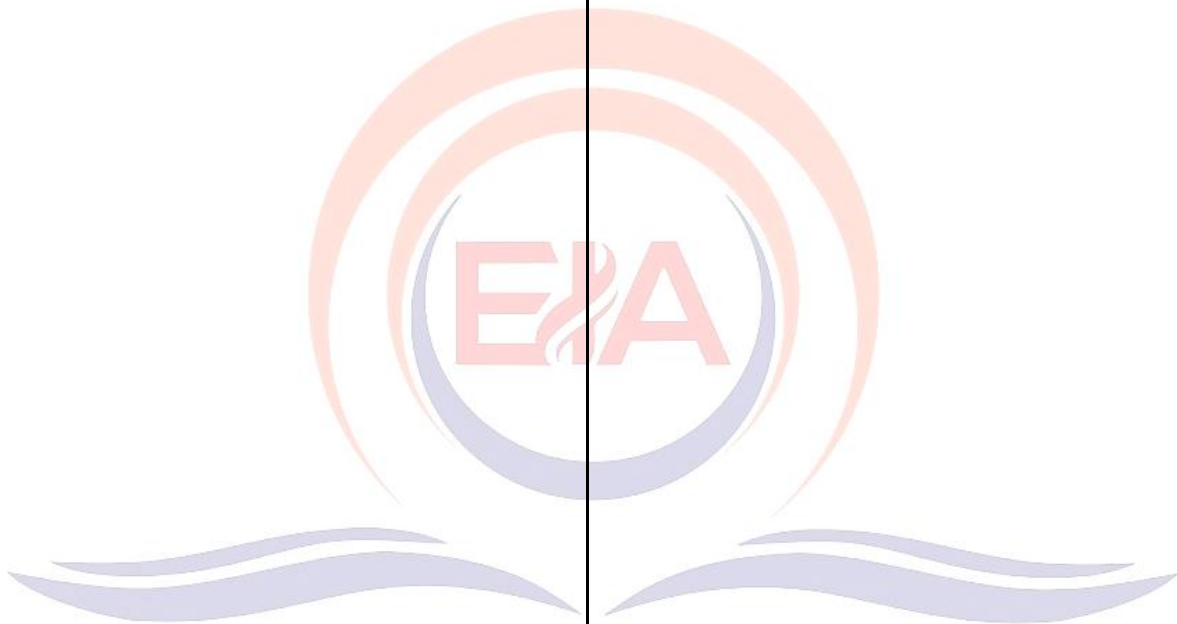
**Conclusion:**

Invasive Alien Species pose a significant threat to biodiversity, ecosystems, and economies globally and in India.

Ensuring the conservation of native biodiversity and safeguarding human livelihoods from the adverse impacts of IAS remains a critical challenge that necessitates continued attention and action.

**UPSC MAINS QUESTION**

**Q. Discuss the implications of Invasive Alien Species (IAS) on native ecosystems and human livelihoods in India. Highlight the measures taken at both global and national levels to manage and mitigate the impact of IAS. (150 WORDS)**



## SCIENCE AND TECHNOLOGY

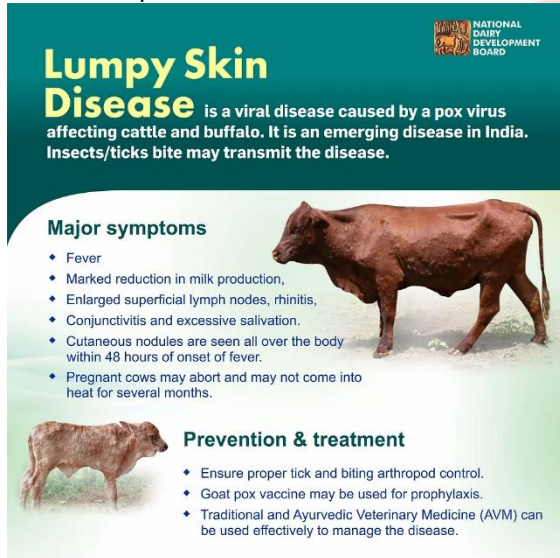
### I. MEDICAL HEALTH / VACCINES / DISEASES

#### 1. LUMPY SKIN DISEASE

**SOURCE: INDIAN EXPRESS**

**Why in news?**

Indian scientists have made notable progress in understanding the genetic makeup of the LSDV (lumpy skin disease virus) which is responsible for the 1,00,000 cattle deaths since May 2022.



**About Lumpy Skin Disease:**

- **Lumpy Skin Disease (LSD):** It is a contagious viral disease primarily affecting cattle.
- **Causative Agent:** The disease is caused by the lumpy skin disease virus (LSDV). This virus is part of the capripoxvirus genus within the poxviridae family, which also includes viruses causing smallpox and monkeypox.
- **Zoonotic Nature:** LSDV is not zoonotic, meaning it doesn't spread to humans.

**Geographical Spread of LSD:**

- **Endemic Regions:** Currently, LSD is prevalent in most parts of Africa, certain areas in the Middle East, and Turkey.
- **Global Spread:** Since 2015, the disease has expanded its reach to the Balkan countries, the Caucasus, and the Russian Federation.
- **Asian Outbreaks:** From 2019 onwards, multiple LSD outbreaks have been reported across Asia in

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countries like India, China, Vietnam, Thailand, and others.

**Modes of Transmission**

- **Vector-Borne Transmission:** The disease primarily spreads through blood-feeding insects such as flies, mosquitoes, and ticks.
- **Contaminated Sources:** Infected animals shed the virus through oral and nasal secretions, contaminating feeding and water troughs.
- **Direct Contact:** Transmission can occur through direct contact with infected vectors or through contaminated fodder and water.

**Clinical Symptoms of LSD**

- **Skin Nodules:** LSD causes the enlargement of lymph nodes, leading to lumps on the animal's skin, which gives the disease its name.
- **Nodule Progression:** The skin nodules, ranging from 2-5 cm, can evolve into ulcers and eventually scabs.
- **Additional Symptoms:** Affected cattle may exhibit high fever, reduced milk yield, eye and nose discharge, excessive salivation, loss of appetite, depression, damaged skin, emaciation, infertility, abortions, and potential fatality.

**Disease Specificity and Morbidity:**

- **Host-Specificity:** LSD primarily affects cows, with buffalo being less susceptible.
- **Morbidity Rates:** Cattle show a higher morbidity rate compared to buffalo when infected with LSD.

**Treatment and Control Measures**

- **Supportive Care:** Currently, there's no direct antiviral treatment for LSD. Infected animals receive supportive care including antibiotics, pain relievers, and wound care sprays to alleviate symptoms.
- **Vaccination:** Due to the absence of specific treatment options, vaccines are crucial for controlling the spread of LSD.

#### 2. CHOLERA VACCINE

**SOURCE: INDIAN EXPRESS**

**Why in news?**

The World Health Organization (WHO) recently granted prequalification to a novel oral cholera vaccine known as Euvichol-S.

**Cholera:**

- **Cholera is an acute diarrheal disease caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*.**
- It can lead to severe dehydration and even death if untreated.

**Symptoms:**

- Symptoms include severe watery diarrhea, vomiting, and dehydration.



- Without prompt treatment, cholera can lead to rapid loss of fluids and electrolytes, resulting in shock and death.

## How cholera affects the body

*Cholera is an acute intestinal infection that causes severe diarrhea, dehydration and, if not treated promptly, death.*

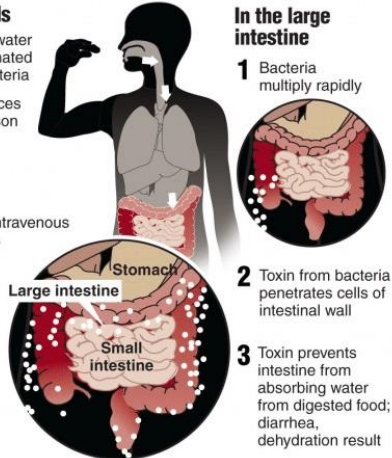
### How it spreads

- People ingest water or food contaminated with cholera bacteria
- In epidemic, feces of diseased person is source of contamination

### Treatment

- Salt solution, intravenous fluids, antibiotics
- In unprepared communities, death rates can be as high as 50 percent

© 2010 MCT  
Source: World Health Organization



### Epidemiology:

- Cholera remains a significant public health concern in regions with inadequate access to clean water and sanitation facilities.
- Outbreaks often occur following natural disasters, conflicts, or other emergencies, exacerbating the risk of transmission.**

### Treatment:

- Oral rehydration therapy (ORT)** is the cornerstone of cholera treatment, which involves replacing lost fluids and electrolytes.
- In severe cases, intravenous fluids and antibiotics may be necessary to manage dehydration and shorten the duration of illness.

### Prevention:

- Improving access to safe drinking water and sanitation infrastructure is essential for cholera prevention.
- Vaccination with oral cholera vaccines can provide additional protection, particularly during outbreaks or in endemic areas.**

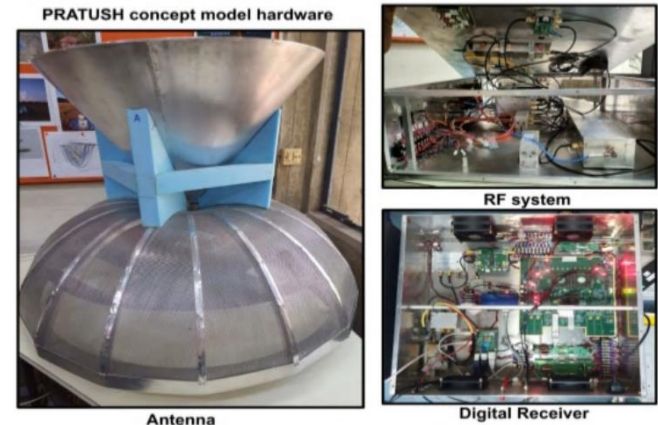
## II. SPACE TECHNOLOGY

### 3. PRATUSH TELESCOPE: INDIA'S LEAP INTO LUNAR RADIO ASTRONOMY

#### SOURCE: THE HINDU

#### Why in news?

Recently Astronomers anticipated that PRATUSH and similar telescopes will open new horizons in astronomy by providing high-resolution observations from the moon's vicinity.



### About PRATUSH:

- Origin:** PRATUSH stands for Probing Reionization of the Universe using Signal from Hydrogen.
- Development Team:** The telescope is being developed by the Raman Research Institute (RRI) in Bengaluru, in collaboration with the Indian Space Research Organisation (ISRO).
- Launch Plan:** Initially, ISRO plans to place PRATUSH in orbit around the Earth for preliminary adjustments. Subsequently, it will be launched towards the moon.

### Objectives and Capabilities

- Primary Goals:** PRATUSH aims to detect signals from the universe's first stars and galaxies, shedding light on the cosmic dawn.
- Key Questions:** It will help answer fundamental questions like when the first stars formed, their nature, and the light emitted by them.
- Instrumentation:** The telescope will be equipped with a wideband frequency-independent antenna, a self-calibrating analog receiver, and a digital correlator.
- Sensitivity:** PRATUSH is designed to achieve a high sensitivity level, capable of detecting radio noise from the universe's Dark Ages at a few millikelvin without systematic limitations.

### 4. PACE SATELLITE

#### SOURCE: THE HINDU

**PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) satellite orbits the Earth in a Sun-synchronous orbit.**

The primary aim of the (PACE) mission is to enhance our understanding of Earth's ecosystems, particularly the interconnected dynamics of plankton, aerosols, clouds, and oceans.

#### Key Instruments on PACE

- OCI measures ocean color across a spectrum from ultraviolet to shortwave infrared.
- Features two polarimeters: SPeXone and HARP2.

## Monitoring Ocean Color:

- PACE utilizes the **Ocean Colour Instrument (OCI)**.
- **Measures spectral characteristics of light** reflected from the ocean.
- **Helps study phytoplankton** abundance and distribution.
- Provides insights into **marine ecosystem dynamics**.

## Studying Aerosols and Clouds:

- Utilizes polarimeters like **SPEXone** and **HARP2**.
- **Examines interactions of aerosols and clouds**.
- **Investigates their impact on climate and air quality**.
- Enables comprehensive understanding of atmospheric processes.



## Significance of PACE Data

- Provides science-quality data for **studying microscopic life** in the ocean and particles in the air.
- **Enables research on fisheries health, harmful algal blooms, air pollution, and wildfire smoke**.
- Investigates **ocean-atmosphere interactions** and their response to climate change.

PACE satellite's data distribution facilitates research in diverse fields, enhancing our understanding of Earth's ecosystems and their responses to environmental changes.

## III. EMERGING TECHNOLOGIES

### 5. HUME AI

#### SOURCE: INDIANEXPRESS

#### Why in news?

New York-based tech company Hume introduces the world's first emotionally intelligent voice AI.



## About Hume AI:

- Hume AI accepts live audio and provides both generated audio and transcripts with vocal expression measures.
- It is **Powered by its proprietary empathic large language model (eLLM)** to emulate tones and word emphasis for better human-AI interactions.
- **Trained on human reactions to prioritize positive expressions like happiness and satisfaction**.
- Continually learns from user reactions to improve interactions.
- **Processes speech tune, rhythm, and timbre to enhance capabilities, determining when to speak and generating empathic language**.

## About large language model:

- A **large language model (LLM)** is an AI program capable of recognizing and generating text.
- LLMs are trained on extensive data sets using transformer models, a type of neural network.
- **Essentially, LLMs interpret human language and other complex data through examples fed during training**.

### 6. META LLAMA 3

#### SOURCE: INDIAN EXPRESS

#### Why in news?

Meta recently unveiled its latest Large Language Model (LLM), the Meta Llama 3, representing a significant advancement in their language processing capabilities.

#### Features:

- Claimed to be the most advanced model, showing significant progress in performance and AI capabilities.
- **Built upon the Llama 2 architecture**, available in 8B and 70B parameter sizes, with base and instruction-tuned versions.
- **Specialized for Chatbots:** The instruction-tuned version is tailored for AI chatbots, enhancing their conversational abilities.
- **Extended Context Length:** Supports context lengths of up to **8,000 tokens**, enabling more interactions and better handling of complex inputs.



- **Wide Compatibility:** Usable on various platforms like Facebook, Instagram, WhatsApp, Messenger, and the web.
- Integrated into the Hugging Face ecosystem for easy developer access.
- **Availability:** Currently accessible in English across the US on WhatsApp, hinting at potential expansion to other languages and regions.

## IV. PRELIMS POINTERS IN NEWS

### 7. WHITE DWARF

#### SOURCE: INDIAN EXPRESS

##### Why in news?

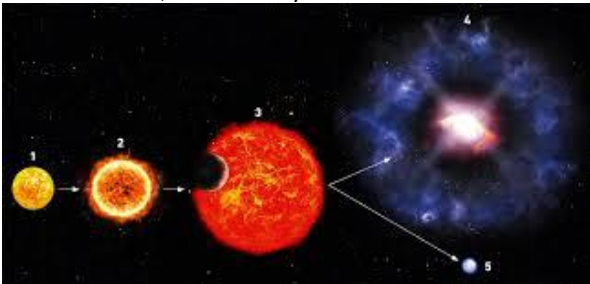
Astronomers have announced the identification of four white dwarf stars belonging to a newly uncovered and uncommon spectral subclass known as DAQ.

##### Formation and Composition:

- **White dwarfs are remnants of dying stars that have exhausted their nuclear fuel and shed their outer layers to form a planetary nebula.**
- They are what stars like the Sun evolve into after they complete their main sequence phase.

##### Characteristics:

- White dwarfs no longer undergo nuclear fusion but remain incredibly hot due to residual heat.
- **Despite being about half as massive as the Sun, they are only slightly larger than Earth, making them extremely dense.**
- They rank among the densest objects in the universe, second only to neutron stars.



##### Internal Structure:

- **White dwarfs initially consist of helium, carbon, and oxygen nuclei surrounded by highly energetic electrons.**
- Unlike other stars, they are supported against gravitational collapse by electron degeneracy pressure, a result of the Pauli exclusion principle.

##### Evolution and Cooling:

- Without accreting matter from nearby stars, white dwarfs cool over billions of years.
- **Eventually, they are predicted to become 'black dwarfs,' though none are expected to exist yet due to the universe's age.**

##### Cosmological Significance:

- **The luminosity of white dwarfs helps astronomers estimate the age of star formation in a region.**
- They serve as important astronomical tools, providing fossil records of the stars they originated from.

##### Observations:

- In 2006, the Hubble Space Telescope observed white dwarfs in globular star clusters, identifying them as the dimmest stars ever seen in such clusters.

### 8. GAIA-BH3

#### SOURCE: TIMES OF INDIA

##### Why in news?

**Gaia-BH3 is the most massive stellar black hole found in the Milky Way galaxy.**

- Astronomers identified it through data from the European Space Agency's Gaia mission.
- It was detected due to the peculiar motion it imposes on its orbiting companion star.



##### Confirmation of Mass

- Researchers used ground-based observatories including the European Southern Observatory's Very Large Telescope in Chile's Atacama Desert to confirm Gaia-BH3's mass.
- **It has a mass approximately 33 times that of the Sun.**
- **Gaia-BH3 is located 1,926 light-years away in the Aquila constellation, making it the second-closest black hole to Earth.**

##### Comparison with Other Black Holes

- The closest black hole, Gaia BH1, is located about 1,500 light-years away and has a mass nearly 10 times that of the Sun.
- **The most massive black hole in the Milky Way galaxy is Sagittarius A\*, a supermassive black hole at the galaxy's center with a mass about 4 million times that of the Sun.**



## Stellar Black Hole vs Supermassive Black Hole

- **Stellar-mass black holes form from the gravitational collapse of a single star or the merger of two neutron stars.**
- They typically have masses ranging from about 3 to 50 times that of the Sun.
- In contrast, supermassive black holes have a mass greater than about 50,000 times that of the Sun and are typically millions to billions of times the mass of the Sun.
- **Supermassive black holes are always located at the center of galaxies, while stellar-mass black holes are scattered throughout the galaxy.**

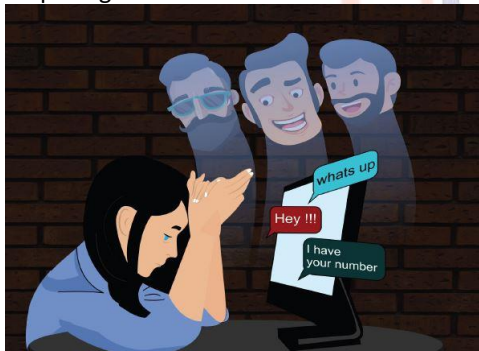
## 9. DOXXING

### SOURCE: THE HINDU

Doxing is derived from "dropping dox," referring to the act of disclosing personal information. Involves the unauthorized publication of an individual's personal details online.

#### Nature of Doxxing

- Information revealed can include full name, address, phone number, workplace, and other sensitive data.
- Often used for harassment, intimidation, or exposing individuals.



#### Consequences

- Can lead to severe outcomes such as **physical harm, stalking, or loss of employment.**
- Information obtained through illegal means like **hacking or theft.**

#### Prevention Measures

- Use **strong, unique passwords** and enable multi-factor authentication.
- **Avoid sharing photos** revealing personal or identifiable information.
- **Report instances of doxxing to relevant authorities**, such as the National Cyber Crime Reporting Portal.

Doxing poses significant risks to individuals' privacy and safety online. Employing preventive measures and reporting

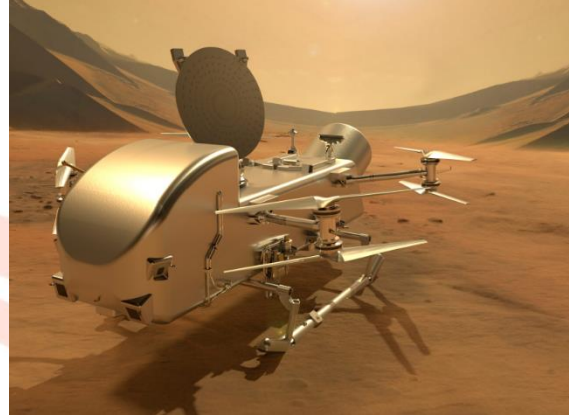
incidents are crucial steps in combating this form of harassment.

## 10. DRAGONFLY MISSION

### SOURCE: THE HINDU

#### Why in news?

**NASA has officially approved the Dragonfly rotorcraft mission to explore Titan, Saturn's largest moon.** The mission has been allocated a budget of \$3.35 billion and is scheduled to launch in July 2028.



#### Mission Objectives:

- **Dragonfly is a "dual quadcopter" designed to fly across Titan's surface, investigating various locations.**
- It aims to study the moon's organic compound-rich environment and conduct scientific measurements.

#### Power Source:

- Similar to the Curiosity rover on Mars, Dragonfly will use a radioisotope power system.
- **This system will allow the rotorcraft to operate during the day, with ample time to recharge its batteries at night on Titan.**

#### Exploration Timeline:

- Upon its arrival at Titan in 2034, Dragonfly will embark on flights to numerous promising locations on the moon.
- **It will search for prebiotic chemical processes that are common on Titan and were prevalent on early Earth before life emerged.**

#### Unique Features:

- **Dragonfly is equipped with eight rotors, enabling it to fly like a large drone.**
- This mission marks the first instance of NASA deploying a vehicle specifically for scientific exploration on another planetary body.

#### Scientific Significance:

- The mission aims to enhance our understanding of Titan's complex chemistry and potentially uncover insights into the conditions that existed on early Earth.

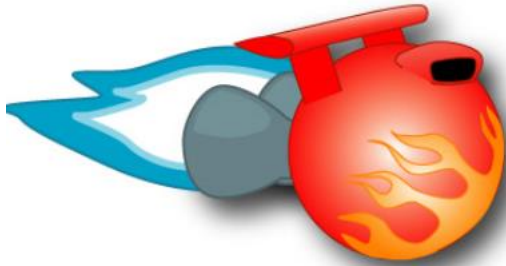


## 11. TACHYONS

**SOURCE: TIMES OF INDIA**

**Why in news?**

Physicists have proposed the existence of tachyons, hypothetical particles that move faster than light, challenging our understanding of the universe.



Tachyon

**What are Tachyons?**

- **Tachyons are theoretical subatomic particles believed to travel faster than the speed of light.**
- Coined by physicist Gerald Feinberg in 1967, tachyons are distinct from "bradyons," which include familiar particles like protons and electrons.
- **Unlike bradyons, tachyons have never been observed, remaining purely theoretical.**

**Properties and Characteristics**

- **According to special relativity, particles with mass cannot surpass the speed of light in a vacuum due to infinite energy requirements.**
- Tachyons are believed to possess imaginary mass, with their mass squared being a negative value, suggesting they could exceed light speed without violating current physics laws.
- **Interestingly, tachyons would decelerate with increased energy and accelerate with decreased energy.**

**Search and Detection**

- Several attempts to detect tachyons have been made using a Cerenkov detector, which measures particle speed in mediums.
- **While nothing can exceed light speed in a vacuum, some particles can outpace light in specific mediums, leading to Cerenkov radiation.**
- This radiation is comparable to a sonic boom produced by an aircraft exceeding the speed of sound or the bow shock wave from a ship moving through water.


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## INDIA TB REPORT 2024

The Ministry of Health and Family Welfare's India TB Report 2024 presents critical insights into the status and trends of Tuberculosis (TB) in India.

### Trends in TB Cases and Deaths:

#### Government vs. Private Sector Reporting:

- Government health centres remain the primary source for TB case reporting.
- The private sector reported a significant increase in notifications, accounting for 33% (8.4 lakh) of the 25.5 lakh cases in 2023, compared to 1.9 lakh in 2015.

#### TB Incidence and Mortality:

- The estimated TB incidence slightly rose to 27.8 lakh in 2023 from 27.4 lakh in the previous year.
- Mortality due to TB remained constant at 3.2 lakh.

#### Mortality Rate:

- The mortality rate declined from 28 per lakh population in 2015 to 23 per lakh population in 2022.
- India saw a significant drop in TB mortality from 4.94 lakhs in 2021 to 3.31 lakhs in 2022.

#### Treatment Initiatives:

- India successfully met its 2023 target by initiating treatment in 95% of diagnosed TB patients, highlighting the progress in treatment accessibility and effectiveness.

#### Risk Factors and Challenges

##### Undernourishment:

- In 2022, 7.44 lakh TB patients were undernourished.
- The government provides Rs 500 monthly support to nearly one crore beneficiaries to improve nutrition.
- The Ni-kshay Mitra programme encourages food basket donations.

##### HIV:

- People with HIV have a 20-times higher TB risk; 94,000 TB patients had HIV in 2022.

##### Diabetes:

- In 2022, 1.02 lakh TB patients also had diabetes.
- Diabetes doubles to triples TB risk and is linked to Multi-Drug Resistant TB.
- 92% of TB patients were screened for diabetes in 2023; 7.7% were diagnosed.

##### Alcohol and Tobacco Use:

- Daily alcohol intake above 50 ml increases TB risk.
- 74% of TB patients were screened for alcohol use; 7.1% were users.
- 75% were screened for tobacco use; 11% were identified as users.
- 32% linked to tobacco cessation services.

### About Tuberculosis (TB)

#### What is TB?

Tuberculosis is a bacterial infection caused by Mycobacterium tuberculosis affecting various body organs, notably the lungs, pleura, lymph nodes, intestines, spine, and brain.

#### Transmission

- **Airborne:** Spreads through close contact in poorly ventilated areas, especially in densely populated spaces.

#### Symptoms

- Persistent cough with sputum and sometimes blood
- Chest pains
- Weakness and weight loss
- Fever and night sweats

#### Global Impact

- **Prevalence:** 10 million new cases yearly and 1.5 million TB-related deaths annually
- **High-Risk Groups:** Leading cause of death among HIV patients. Contributes significantly to antimicrobial resistance.
- **Regional Impact:** Most cases in low- and middle-income countries Half of global cases in eight countries including India, China, and South Africa

#### Treatment

##### Standard Treatment:

- 6-month course of 4 antimicrobial drugs
- Administered with guidance and support from health workers or volunteers.

##### Drug Resistance:

- Resistant strains documented globally.
- **MDR-TB:** Resistant to isoniazid and rifampicin; treatable with second-line drugs like bedaquiline
- **XDR-TB:** Even more resistant, leaving limited treatment options

##### Drugs used for treatment:

###### Isoniazid (INH):

- Effective against Mycobacterium tuberculosis
- Inhibits mycolic acid synthesis in bacterial cell wall.

###### Rifampicin (RIF):

- Inhibits bacterial RNA synthesis.
- Used in combination therapies to prevent drug resistance.

###### Delamanid:

- Newer drug for treating MDR-TB
- Often used in combination with other drugs

#### Initiatives to Combat Tuberculosis (TB)

##### Global Efforts

##### WHO's Initiatives:

- **Find. Treat. All. #EndTB:** Joint initiative with Global Fund and Stop TB Partnership to find and treat all TB cases.





- **Global Tuberculosis Report:** Annual release by WHO providing insights into TB trends and challenges.
- **Global Plan to End TB, 2023-2030:** Blueprint aiming to end TB as a public health threat by 2030.
  - Adopted by all UN Member States and WHO
  - Aligns with UN Sustainable Development Goal 3.3

## India's Efforts

### Government Programs:

#### Pradhan Mantri TB Mukh Bharat Abhiyan:

- A government initiative aimed at achieving a TB-free India by implementing comprehensive strategies for prevention, diagnosis, and treatment of tuberculosis across the country.

#### National Strategic Plan (NSP) 2017-2025:

- A detailed and inclusive plan designed to eliminate tuberculosis in India by 2025, focusing on improving healthcare infrastructure, increasing awareness, and ensuring access to quality treatment and care.

#### TB Harega Desh Jeetega Campaign:

- A nationwide campaign launched to combat tuberculosis by raising awareness, promoting early diagnosis, and encouraging community participation in TB control efforts to ultimately eradicate the disease from India.

#### Nikshay Poshan Yojna:

- A government scheme providing nutritional support to tuberculosis patients to improve their overall health and aid in the effectiveness of TB treatment, emphasizing the importance of proper nutrition in combating the disease.

#### Research:

**RePORT India:** Collaborative research program under Indo-US Vaccine Action Program (VAP) since 2013. Focuses on tackling TB threats in India and globally.

### UPSC MAINS QUESTION

**Q. Discuss the key findings and trends highlighted in the India TB Report 2024. Evaluate the government initiatives and challenges associated with combating Tuberculosis in India. (150 WORDS)**

## SECURITY

### I. BORDER DISPUTES

#### 1. ARUNACHAL AN INTEGRAL PART OF INDIA: CENTRE

##### SOURCE: THE HINDU

##### Why in news?

India categorically rejects China's attempts to rename places in Arunachal Pradesh, labelling them as "senseless".

- India asserts that assigning new names doesn't change the fact that Arunachal Pradesh is an integral and inalienable part of India.
- Despite Beijing's release of standardized names in April last year, India reaffirms its sovereignty over the region.

##### India-China Border Dispute Background:

- The dispute pertains to the lengthy and intricate territorial disagreements along their shared 3,488-kilometer border.
- Main contested regions include Aksai Chin in the western sector and Arunachal Pradesh in the eastern sector.



##### Aksai Chin Significance:

- China administers Aksai Chin within its Xinjiang region, while India claims it as part of Ladakh, considering its strategic importance near the China-Pakistan Economic Corridor (CPEC).

##### Arunachal Pradesh Claim:

- China asserts its sovereignty over Arunachal Pradesh, labeling it as "South Tibet," whereas India administers it as a northeastern state, integral to its territory.

##### Unclear Demarcation and LAC:

- Lack of clear demarcation along the border leads to disputes, with no mutually agreed Line of Actual Control (LAC) in certain areas.

- The LAC was established post the 1962 Indo-China war and divides the border into three sectors: Western (Ladakh), Middle (Himachal Pradesh and Uttarakhand), and Eastern (Arunachal Pradesh and Sikkim).

##### About McMahon Line And Line of Actual Control(LAC)

##### McMahon Line:

Boundary line between India and China, established after the signing of the Shimla Convention on July 3rd, 1914.

- Spans approximately 890 kilometers, stretching from Bhutan in the west to about 260 kilometres eastward, reaching the Brahmaputra River.

##### Initial Rejection by India:

- Initially rejected by the Government of India due to concerns regarding compatibility with the Anglo-Russian Convention of 1907.

##### Line of Actual Control (LAC):

- Another demarcation line between India and China, primarily in the western border regions and including the Ladakh region.
- The LAC serves as a de facto boundary, often disputed and subject to ongoing tensions between the two nations.

##### Henry McMahon and the Simla Agreement:

- The McMahon Line is named after Henry McMahon, who served as the Foreign Secretary of the British colonial government.
- He was the chief negotiator of the Simla Agreement of 1907, through which the McMahon Line was determined and established.

### II. PRELIMS POINTERS IN NEWS

#### 2. AGNI-PRIME MISSILE

##### SOURCE: THE HINDU

##### Why in news?

The Strategic Forces Command (SFC) and the Defence Research and Development Organisation (DRDO) successfully conducted a flight test of the Agni-Prime, a new-generation ballistic missile, from Dr APJ Abdul Kalam Island near the coast of Odisha.



## About Agni-Prime Missile:

- **Type:** Agni-Prime is a new-generation nuclear-capable ballistic missile, an advanced version of the Agni missile series.
- **Design:** It is a two-stage canisterised missile, designed for easier transport by road and rail.
- **Range:** The missile has a range between 1,000 to 2,000 km.
- **Weight:** It weighs around 50% less than its predecessor, the Agni-3 missile, due to its advanced guidance and propulsion systems.
- **Launch Mechanism:** Agni-Prime uses a cold launch mechanism and can be fired in a salvo mode, reducing preparation and launch time.

## Ballistic Missiles:

- **Definition:** Ballistic missiles are rocket-propelled weapons launched directly into the upper layers of the earth's atmosphere, traveling beyond into space.
- **Function:** They deliver conventional or nuclear warheads by detaching from the missile once outside the atmosphere, targeting predetermined locations.
- **Launch Points:** These missiles can be launched from various platforms including aircraft, ships, submarines, and land.

## Cruise Missiles

Unlike ballistic missiles, cruise missiles remain within the earth's atmosphere throughout their flight, maintaining a consistent speed.

- **Targets:** They are designed to hit terrestrial or naval targets, traveling at low altitudes and high speeds to reach their destinations.

## 3. PROJECT AKASHTHEER

### SOURCE: TIMES OF INDIA

#### Why in news?

The Indian Army has launched 'Project Akashteer' to enhance its air defense capabilities through advanced control and reporting systems.

### Meet Indian Army's "Akash Teer" System Complete Air-Defence Cover



#### About 'Project Akashteer':

- Project Akashteer aims to automate air defense control and reporting procedures by incorporating digital technologies.

- The initiative focuses on providing superior situational awareness and control to safeguard friendly aircraft and engage hostile aircraft in contested airspace effectively.
- The project facilitates monitoring of low-level airspace across the Indian Army's battle zones and efficient control of Ground Based Air Defence Weapon Systems.
- **Bharat Electronics Limited (BEL) is the developer of the Akashteer Command and Control Systems** as part of the 'Atmanirbhar Bharat' (Self-reliant India) initiative.
- The system features mobile, vehicle-based control centers capable of maintaining operational capabilities even in challenging communication environments.
- **'Akashteer' promises to revolutionize India's air defense capabilities through enhanced efficiency, integration, and automation.**
  - **Efficiency and Integration:** The digitization of air defense control and reporting processes will lead to improved efficiency and integration, allowing the Indian Army to respond promptly to hostile threats while reducing the risk of friendly fire incidents.
  - **Situational Awareness:** The system integrates radar and communication systems into a unified network, offering unparalleled situational awareness to detect and engage hostile targets more effectively.
  - **Automation:** 'Project Akashteer' signifies a significant step towards fully automating air defense operations, positioning India to address contemporary challenges in air warfare effectively.

## 4. RAMPAGE

### SOURCE: INDIAN EXPRESS

#### Why in news?

Israel deployed the Rampage, a highly effective air-to-surface missile, during an assault on an Iranian military facility.

#### Rampage missile:

- **Type:** It's a long-range, supersonic air-to-ground missile designed for precise strikes.
- **Developers:** Created by Israel Aerospace Industries and Israeli Military Industries Systems.
- **Purpose:** Made to destroy well-protected targets like communication centres and infrastructure.
- **Size and Weight:** Measures 4.7 meters (15.4 feet) long and weighs 570 kilograms.





- **Speed and Range:** Travels at supersonic speeds with a range of over 190 miles.
- **Payload:** Carries 150 kilograms of explosives with options for blast fragmentation or general-purpose warheads.
- **Guidance System:** Utilizes GPS/INS navigation and anti-jamming capabilities for accuracy.
- **Flexibility:** Can be launched from aircraft or as a standalone system.
- **Mid-flight Adjustment:** Capable of altering its trajectory during flight for precise targeting.
- **All-Weather Operation:** Works in any weather condition, day, or night

## 5. EXERCISE DUSTLIK

### SOURCE: NEWS9

#### Why in news?

Exercise DUSTLIK is a Annual collaborative military training event involving the Indian Army and the Uzbekistan Army.



#### About Exercise DUSTLIK:

- It alternates between being held in India and Uzbekistan.
- The inaugural edition was held in Uzbekistan in November 2019, with the most recent edition taking place in Pithoragarh, India, in February 2023.
- The **fifth edition, Dustlik-2024, is scheduled to be held in Termez, Uzbekistan.**
- The Indian contingent consists of 60 personnel, with 45 from the Indian Army, primarily from the JAT Regiment, and 15 from the Indian Air Force.

- The Uzbekistan contingent comprises approximately 100 personnel from the Uzbekistan Army and Air Force, represented by personnel from the Southern Operational Command.
- The primary objective of Exercise DUSTLIK is to enhance military cooperation and combined capabilities for joint operations in mountainous and semi-urban terrain.
- The exercise focuses on physical fitness, joint planning, tactical drills, and special arms skills.
- The complexity of Dustlik-2024 is increased with the inclusion of personnel from combat support arms and services in addition to infantry.

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## SOCIETY

### I. VULNERABLE SECTIONS OF THE SOCIETY

#### 1. PM-SUMAN SCHEME

##### SOURCE: INDIAN EXPRESS

##### Why in news?

PM-SUMAN scheme is introduced by the **Ministry of Union Health and Family Welfare (MoHFW)** in 2019.

- **Aim:** To eliminate preventable maternal and newborn deaths, ensuring zero-cost healthcare services for pregnant women and newborns.
- **Eligibility Criteria:** Open to pregnant women from all categories, including APL and BPL, as well as newborns aged 0 to 6 months and lactating mothers up to 6 months post-delivery.



##### Key Objectives:

- **Provide free detection and management of pregnancy-related complications.**
- Offer zero-cost delivery and C-section facilities at public health facilities.
- **Ensure no denial of services to pregnant women and children.**
- Provide free transport to and from health facilities for pregnant women.
- **Offer vaccination services for newborns at no cost.**
- **Maternal Mortality Rate (MMR) Reduction:** The scheme aims to contribute to achieving Sustainable Development Goal 3, which targets reducing the global MMR to less than 70 per 100,000 live births by 2030.

#### 2. CENTRE RELEASES CURRICULUM FRAMEWORK FOR ANGANWADIS

##### SOURCE: THE HINDU

##### Why in news?

The Ministry of Women and Child Development (MWCD) has introduced the National Curriculum for Early Childhood Care and Education 2024, named 'Aadharshila'.

This curriculum aligns with the National Education Policy 2020 and the National Curriculum Framework.

##### ANGANWADIS

Anganwadis are a network of rural childcare centres in India established by the Indian government in 1975 as part of the Integrated Child Development Services (ICDS) program.

##### Early Childhood Development:

- Pre-school education & play activities (ages 3-6).
- Boosts cognitive development, motor skills, and social interaction.
- Prepares children for formal schooling.

##### Nutrition & Health:

- Hot cooked meals & take-home rations to fight child malnutrition.
- Basic healthcare services like immunization, check-ups, and growth monitoring.

##### Women & Mothers:

- Health & nutrition education, especially for pregnant & lactating mothers.
- Promotes healthy childcare practices.
- Supports income generation activities for women.

##### Community Outreach:

- Focal point for community health, hygiene, and immunization programs.
- Raises awareness about social issues and government schemes.

##### The Poshan Tracker app

- It is a mobile tool used by Anganwadi workers in India to manage beneficiaries, track service delivery for nutrition, health, and early childhood development programs.

### II. EDUCATION SECTOR

#### 3. ANNUAL STATUS OF EDUCATION REPORT (ASER)

##### SOURCE: INDIAN EXPRESS

##### Why in news?

The Annual Status of Education Report (ASER) for 2023 was released in mid-January this year.

##### Key Findings from ASER 2023:

##### Reading Abilities:



- The ASER 2023 survey covered 28 rural districts across 26 states.
- Shockingly, 26% of 14–18-year-olds couldn't read a standard text in their regional language.

### School Enrollment:

- Among those lacking basic reading skills, 57% are enrolled in 10th standard or below.
- 28% are not enrolled in any educational institution.

### Fluency and Comprehension:

- Almost half of 8th graders who struggled with standard two-level text could manage simpler texts.
- Recognizing letters isn't the primary issue; it's reading fluently and understanding that poses challenges.

### Access to Reading Material:

- Rural households lack reading materials beyond textbooks, as highlighted by ASER 2022.

### Student Aspirations:

- Over 60% of surveyed 14-18-year-olds aim for college education.
- Girls are more ambitious with 65% aspiring for higher education, compared to 59% of boys.

### Vocational Education Perception:

- Vocational education varies in perception; in places like Solan, it's embraced due to relevant programs like tourism and hospitality.

### Reasons for Poor Performance:

#### Lack of Primary Skills:

- ASER 2018 revealed that 32% of 7th graders and 27% of 8th graders couldn't read a standard text, hindering foundational skill development.

#### Social Stigma:

- Children facing reading challenges often face ridicule, leading to a dislike for reading and learning.

#### Lack of Connections:

- Almost half of aspirational students lack access to professionals in their desired fields, like medicine or policing.

#### Recommendations for Improvement:

##### End the Stigma:

- Emphasize guidance, practice, encouragement, and motivation to nurture reading skills without ridicule.

##### Community Libraries:

- Establish vibrant community libraries to foster reading, creativity, and critical thinking, requiring effective management.

##### Leverage Technology:

- Utilize digital platforms to provide foundational knowledge in desired professions. For instance, aspiring nurses can access online foundational courses.

### Data Utilization:


- Harness data from surveys like ASER to inform policies and implement corrective measures effectively.

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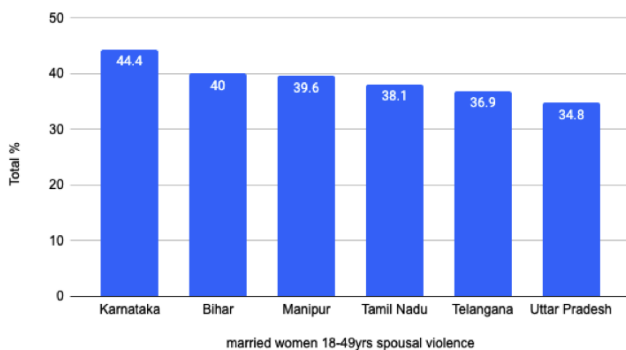
## DOMESTIC VIOLENCE IN INDIA

Domestic violence is a pervasive issue affecting women across India, irrespective of their religious or social backgrounds. Despite legal provisions aimed at protecting women, enforcement remains challenging due to various societal, economic, and legal factors.

### Extent of Domestic Violence in India:

- **32% of ever-married women in India have reported experiencing physical, sexual, or emotional violence by their husbands.**
- According to the National Family Health Survey-5 (NFHS-5) 2019-2021, 29.3% of married Indian women between 18 and 49 have experienced domestic or sexual violence.
- **NFHS data also indicates that 87% of married women who are victims of marital violence do not seek help, highlighting the underreporting and silent suffering of many.**

States with highest cases of domestic violence



### Factors Contributing to Domestic Violence:

- **Gender Disparities:** India's gender gap fosters a sense of male superiority, leading to violence as a means of asserting dominance.
- **Substance Abuse:** Alcohol or drug misuse can exacerbate violent tendencies and impair judgment, leading to increased instances of abuse.
- **Dowry Culture:** The dowry system is often linked to domestic violence, with violence escalating when dowry expectations are not met.
- **Sociocultural Norms:** Traditional beliefs and patriarchal systems reinforce gender roles and power imbalances, contributing to violence against women.
- **Socioeconomic Stressors:** Poverty, unemployment, and financial dependency can increase tensions within households, leading to violence.

- **Mental Health Issues:** Untreated mental health conditions may contribute to volatile behavior and escalate conflicts into violence.
- **Lack of Education and Awareness:** Limited understanding of healthy relationship dynamics and legal protections perpetuates acceptance of abusive behavior.

### Legal Frameworks Addressing Domestic Violence:

- **Protection of Women from Domestic Violence Act, 2005 (PWDVA):** Provides protection against physical, emotional, sexual, and economic abuse, and offers various orders for relief.
- **Indian Penal Code, 1860 (Section 498A):** Criminalizes acts of cruelty by husbands or relatives towards women.
- **Dowry Prohibition Act, 1961:** Addresses dowry-related offenses and prohibits the giving or receiving of dowry.
- **Criminal Law (Amendment) Act, 2013 (Section 354A):** Introduced new offenses related to sexual harassment, relevant in cases of domestic violence.
- **Juvenile Justice (Care and Protection of Children) Act, 2015:** Protects children's rights in cases of domestic violence.

### Global Initiatives:

- **Convention on the Elimination of All Forms of Discrimination against Women (CEDAW):** Works towards eliminating discrimination against women in all areas of life.
- **UN Declaration on the Elimination of Violence against Women (DEVAW):** Provides a framework for national and international action against violence towards women.
- **Safe Cities and Safe Public Spaces:** A UN Women initiative aimed at preventing and responding to violence against women in public spaces.
- **Beijing Platform for Action:** Identifies specific actions for governments to prevent and respond to violence against women and girls.

### Challenges in Enforcing Laws Against Domestic Violence:

- **Social Stigma:** Victims often hesitate to report abuse due to fear of retaliation and concerns about family reputation.
- **Lack of Awareness:** Many people, including victims, are unaware of their legal rights and available resources.



- **Dependency and Economic Factors:** Victims may be financially dependent on their abusers, hindering their ability to seek legal assistance.
- **Inadequate Implementation and Training:** Law enforcement agencies and judicial bodies may lack proper training in handling domestic violence cases.
- **Legal Hurdles:** Proving domestic violence in court requires substantial evidence, which may be challenging to obtain.
- **Cultural and Regional Variations:** Different cultural norms affect how domestic violence is perceived and addressed.

#### Way Forward:

- **Promote transformative change in attitudes** towards gender roles and power dynamics through education and awareness campaigns.
- **Mandate gender perspective training for stakeholders** involved in handling domestic violence cases.
- **Ensure victims have access to free or low-cost legal representation** throughout the legal process.
- **Implement programs that empower survivors economically** and provide them with job training and financial literacy skills.

#### Conclusion:

**Addressing domestic violence requires a multifaceted approach involving legal reforms, awareness campaigns, and socioeconomic empowerment programs.**

By addressing the root causes and barriers to enforcement, India can take significant strides towards combating domestic violence and ensuring the safety and well-being of all women.

#### UPSC MAINS QUESTION

**Q. Discuss the prevalence and underlying factors contributing to domestic violence in India. Evaluate the legal frameworks and challenges in effectively addressing domestic violence, suggesting measures for its prevention and mitigation. (150 WORDS)**

## I. AGRICULTURE IN TELANGANA

Agriculture is the backbone of many economies worldwide, providing food, livelihoods, and raw materials. In Telangana, agriculture plays a significant role in the state's socio-economic fabric. With a rich history of agrarian traditions, Telangana's agriculture sector contributes substantially to its economy.

### HISTORICAL BACKGROUND:

#### ANCIENT PERIOD

**Satavahana Dynasty (1st century BCE - 3rd century CE):**

- Under the Satavahanas, agriculture flourished in Telangana with the cultivation of crops like rice, pulses, millets, and cotton.
- The dynasty supported agricultural development through the **construction of irrigation tanks (cheruvus) and wells**, facilitating water management for farming.

**Kakatiya Dynasty (12th century - 14th century CE):**

- The Kakatiyas were known for their extensive irrigation projects, including the **construction of large reservoirs and tanks such as the Ramappa Lake and Pakhal Lake**.
- **The agricultural land was popularly known as Acchukattu Bhoomi**.
- Agricultural advancements during their rule led to increased productivity and prosperity in Telangana, with **rice being a major crop**.

#### MEDIEVAL PERIOD

**Bahmani Sultanate (1347-1527 CE):**

- The Bahmani Sultanate's rule in Telangana witnessed the continuation of agricultural practices, with an emphasis on **cash crops like cotton and sugarcane**.
- They **introduced Persian wheel technology for irrigation**, improving water distribution for farming.

**Qutb Shahi Dynasty (1518-1687 CE):**

- The Qutb Shahis encouraged agricultural development in Telangana, **promoting cultivation of crops such as rice, maize, and pulses**.
- They constructed irrigation structures like tanks and canals, supporting agricultural expansion in the region.

#### MODERN PERIOD

**Nizam of Hyderabad (18th century - 1948 CE):**

- **The Nizams imposed various land revenue policies**, which often exploited farmers and hindered agricultural growth.
- Despite challenges, **agriculture remained a vital component of the economy, with crops like rice, wheat, and cotton being cultivated**.

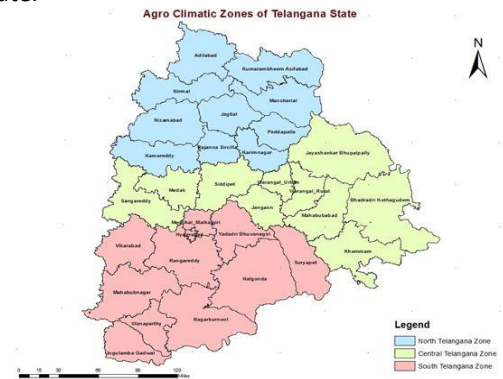
**Post-Independence India (1947 onwards):**

- After India gained independence, efforts were made to address agrarian issues in Telangana through land reforms and technological advancements.
- **Green Revolution initiatives in the 1960s and 1970s brought high-yielding crop varieties and modern agricultural practices to the region, boosting productivity.**

### AGRO-CLIMATIC ZONES OF TELANGANA

Telangana, located in southern India, exhibits diverse agro-climatic zones due to variations in topography, soil types, and climate.

These agro-climatic zones play a crucial role in determining the types of crops that can be cultivated in different parts of the state.



#### Northern Telangana Zone:

- **Characterized by undulating terrain and relatively cooler temperatures.**
- Suitable for cultivating crops like maize, sorghum, soybean, and pulses.
- **Irrigation facilities are essential due to moderate to low rainfall.**
- This zone includes Adilabad, Nirmal, Kumuram Bheem Asifabad, Mancherial, Jagtial, Peddapalli, Karimnagar, And Nizamabad districts.
- According to Telangana State Statistical Abstract 2022, the area covered under this zone is **8,171 acres**.

#### Central Telangana Zone:

- **Dominated by the Deccan Plateau, with moderate temperatures and semi-arid climate.**
- Major crops include cotton, maize, groundnut, pigeon pea, and sunflower.
- **Irrigation is largely dependent on tanks, wells, and lift irrigation.**
- This zone includes Sangareddy, Medak, Siddipet, Jangaon, Warangal, Mahabubabad, Khammam, Badradri Kothagudem, Mulugu, Jayashankar Bhupalpally Districts.



- According to Telangana State Statistical Abstract 2022, the area covered under this zone is 9,539 acres

### Southern Telangana Zone:

- Features lower elevations and hotter temperatures compared to other zones.
- Ideal for growing crops like paddy, cotton, chillies, turmeric, and mangoes.
- Requires extensive irrigation due to relatively lower rainfall and high evaporation rates.
- This zone includes Vikarabad, Narayanpet, Gadwal, Wanaparthy, Mahbubnagar, Nagarkurnool, Rangareddy, Nalgonda, Suryapet, Bhuvanagiri, Hyderabad And Medchal Malkajagiri Districts.
- According to Telangana State Statistical Abstract 2022, the area covered under this zone is 9,984 acres

## CROPPING SEASONS IN TELANGANA REGION

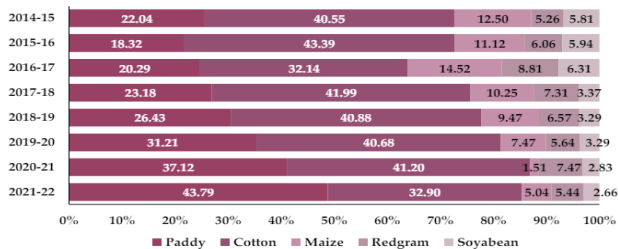
Telangana experiences three main cropping seasons:

### Kharif Season (June to October):

- The Kharif season coincides with the southwest monsoon, which brings ample rainfall to the region.
- Major Kharif crops cultivated during this season include paddy, maize, cotton, soybean, groundnut, and pulses.
- Farmers prepare their fields during the pre-monsoon period and sow their seeds at the onset of the monsoon, taking advantage of the moisture-rich soil.

The government of Telangana renamed kharif season as Vankalam in 2020.

### Area under top 5 major crops in Vanakalam in the years from 2014-15 to 2021-22



### Rabi Season (October to March):

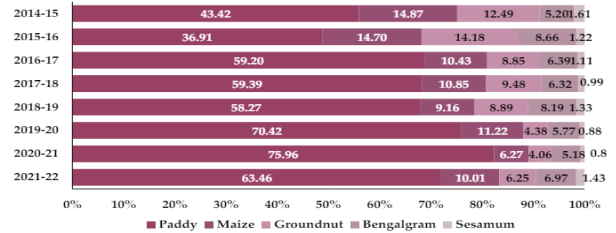
The Rabi season occurs during the post-monsoon period and extends into the winter months.

- Crops cultivated during the Rabi season in Telangana include wheat, barley, chickpeas, mustard, sorghum, and vegetables like tomatoes and onions.
- This season relies more on irrigation as rainfall decreases after the monsoon, and farmers often

utilize water from reservoirs, wells, and canals to irrigate their crops.

- The government of Telangana renamed kharif season as Yasangi' in 2020.

### Area Under Top 5 Major Crops in Yasangi from the year 2014-15 to 2021-22



### Summer Season (March to June):

- The summer season in Telangana is characterized by high temperatures and dry weather.
- Some farmers practice the cultivation of short-duration crops during this period, known as the "Summer" or "Zaid" season.
- Crops grown during the summer season include vegetables like cucumbers, watermelons, and muskmelons, as well as fodder crops and pulses.
- Irrigation is crucial during this season, and farmers often employ techniques like drip irrigation to conserve water and mitigate the effects of drought.

#### KHARIF CROP



#### RABI CROPS



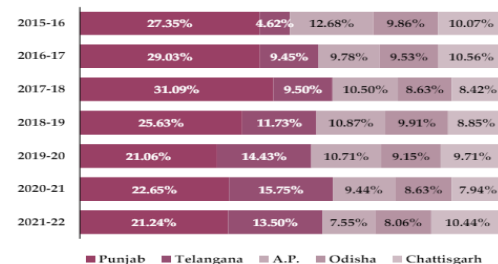
## MAJOR CROPS OF TELANAGANA

The major crops of Telangana are as follows

Rice:

- Rice is the staple food crop of Telangana, occupying a significant portion of the cultivated area.

### 5 States in Paddy Procurement by the Food Corporation of India from 2015-16 to 2021-22



Source: Food Corporation of India



- It is widely cultivated in both Kharif and Rabi seasons.
- According to socio economic outlook 2023 the paddy cultivation in both seasons has made Telangana as **Rice Bowl of India**.
- **Varieties like Sona Masuri, BPT 5204, and Swarna are extensively grown.**
- The cultivation of paddy is largely concentrated in Kamareddy, Nalgonda, Suryapet, Nizamabad and Karimnagar Districts.
- The state's abundant water resources and suitable climatic conditions make it ideal for rice cultivation.

### Cotton:

- **Telangana is a major cotton-producing state in India.**
- Cotton cultivation is widespread, with varieties like MCU 5, DCH 32, and Bunny 10 being popular among farmers.
- The cotton produced in Telangana is known for its quality and contributes significantly to the textile industry.
- It is mainly cultivated in the districts of Nirmal, Adilabad, Warangal, Hanumakonda, Mahbubnagar, Nalgonda, Jayashanagr Bhupalapally, and Jangaon.
- **According to socio economic outlook 2023, the state stands 3<sup>rd</sup> position in the production of cotton in india.**

### Red gram (Pigeon pea):

- **Red gram is an important pulse crop cultivated in Telangana.**
- It is grown both for domestic consumption and as a cash crop.
- **The state's red gram production plays a crucial role in meeting the protein requirements of its population.**
- It is mainly cultivated in the districts of Vikarabad, Narayanpet, Sangareddy, Nirmal, Nizamabad And Kumuram Bheem Asifabad Districts.

#### Tandur red gram

**Tandur red gram is the 16<sup>th</sup> product in Telangana to get GI tag.**

It is a local variety of pigeon pea that is primarily grown in the rain fed tract of Tandur and nearby places in state.

**This variety of Dal contains 22-24% of protein** which is three times more than the other varieties.

### Maize:

- **Maize cultivation is prevalent in Telangana, especially in districts with suitable climatic conditions and irrigation facilities.**
- It is largely grown in the districts of kamareddy, Warangal, nirmal and bhadradri kothagudem.
- **It is used for human consumption, livestock feed, and industrial purposes like starch and ethanol production.**

### Groundnut:

- Groundnut cultivation is widespread in Telangana, particularly in the **northern districts**.
- **The state is one of the leading producers of groundnut in India.**
- Groundnut cultivation provides a source of income for many farmers in the region.

### Soybean:

- Soybean cultivation is gaining momentum in Telangana due to its high protein content and versatility in food processing industries.
- Farmers are increasingly adopting soybean cultivation as a profitable alternative.
- **It is grown in Kamareddy, Adilabad, Nirmal, Jagital and Nizamabad Districts.**

### Castor oil:

- **Caster is one of the major oil production crop and is extensively cultivated in Kharif season.**
- It is cultivated in the districts of Mahabubnagar, Wanaparthy, Nalgonda, Gadwall, Suryapet, Rangareddy and Warangal

### Sugarcane:

- Sugarcane is cultivated in parts of Telangana, primarily for sugar production.
- **It is mainly an irrigation crop.**
- The cultivation of sugarcane is mainly done in Nizamabad, Karimnagar, Khammam, Warangal and Adilabad Districts.
- **The state has several sugar mills that process sugarcane into sugar and its by-products.**

### Tobacco:

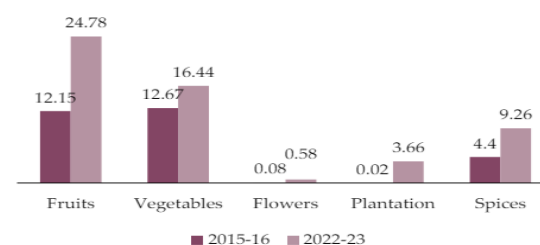
- Tobacco is one of the **commercial crops and mainly cultivated in the Rabi season.**
- It is mainly cultivated in the districts of jogulamba gadwall and jangaon.

## HORTICULTURE IN TELANGANA

Horticulture in Telangana is an integral part of the state's agricultural landscape and plays a significant role in its economy.

According to socio economic outlook 2023, the total area under horticulture in the state in 2021-22 is 12.94 lakh acres and the total production is 54.82 lakh metric tonnes.

### Horticulture Crops in 2015-16 and 2021-22 (in lakh MTs)



Source: Horticulture Department, Government of Telangana



## MAJOR HORTICULTURE CROPS

### Mangoes:

- Mango cultivation is prominent in Telangana, with **varieties like Banganapalli, Totapuri, and Neelam being cultivated extensively.**
- The state's mangoes are known for their sweetness, flavor, and aroma, contributing to both domestic and international markets.
- Mango orchards are widespread in districts like **Medak, Mahbubnagar, and Rangareddy.**

### Banana:

- Banana cultivation is prominent in Telangana, with varieties such as Grand Naine, Dwarf Cavendish, and Robusta being cultivated.
- **This crop is cultivated extensively in districts like Karimnagar, Warangal, and Khammam.**

### Pomegranate:

- Pomegranate cultivation is gaining popularity in Telangana due to its high demand and export potential.
- Varieties like Bhagwa and Ganesh are commonly grown in districts such as **Mahbubnagar, Rangareddy, and Nizamabad.**

### Guava:

- Guava cultivation is widespread in Telangana, with varieties like Allahabad Safeda, Lucknow 49, and Baruipur Seedless being cultivated.
- **Guava orchards can be found in districts like Adilabad, Nizamabad, and Medak.**

### Tomato:

- Tomato cultivation is a significant horticultural activity in Telangana, with both hybrid and indigenous varieties being grown.
- **This crop is cultivated in various districts across the state for both domestic consumption and commercial purposes.**

### Rose:

- Rose cultivation for flower production is significant in Telangana, especially for the production of rose oil and extraction of rose water.
- **Districts like Hyderabad, Rangareddy, and Medak are known for rose cultivation.**

### Spices:

The state produces two major spices:

#### Turmeric:

- Telangana is renowned for its turmeric cultivation, especially in districts like **Nizamabad and Warangal.**
- **Turmeric is an essential spice crop with significant medicinal properties,** and its cultivation provides livelihood opportunities for many farmers.

#### Chillies:

- **Chillies are a vital spice crop grown in Telangana.**

- Varieties like Guntur Sannam and Byadgi are cultivated for their pungency, color, and aroma.
- Chillies are not only used in culinary dishes but also in the production of spices and condiments.
- **It is majorly grown in the districts of Mahabubabad, Gadwall, Bhadradi Kothagudem, Jayashankar Bhupalapally and Warangal.**

## AGRICULTURE SCHEMES IN TELANGANA

### RYTHU BANDHU SCHEME

**Launched in 2018 by the Government of Telangana** to provide financial assistance to landowning farmers in the state.

**Offers Rs. 10,000 per acre per year,** which is comparatively higher than similar schemes in other states.

#### Comparative Analysis:

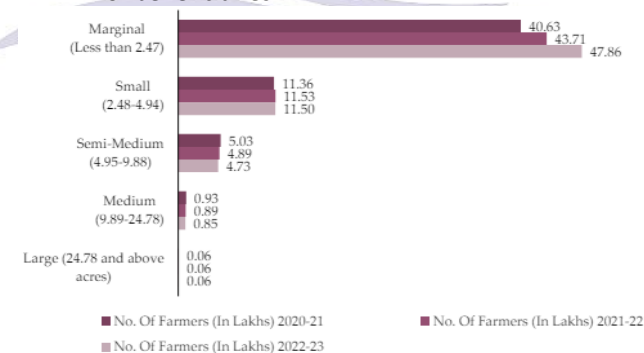
- Compared to other states like Andhra Pradesh, Jharkhand, and West Bengal, Telangana's Rythu Bandhu Scheme offers a higher amount of financial support.
- **The scheme is extended to all land-owning farmers regardless of the size of their landholding.**

#### Recommendation by ICRIER:

- The Indian Council for Research on International Economic Relations (ICRIER) **recognizes Rythu Bandhu as a superior scheme due to its simplicity, transparency, and inclusivity.**

#### Beneficiary Profile:

- In Vanakalam 2022, around **65 lakh farmers benefited from the scheme,** with the majority being marginal and small farmers.
- Large farmers account for only a small percentage of beneficiaries.



#### Disbursement and Coverage:

- In Vanakalam 2022-23, 148 lakh acres were covered under the scheme, with Rs. 7,435 crores disbursed.
- Cumulatively, Rs. 65,192 crores have been disbursed to beneficiaries over the last nine seasons (2018-19 to 2022-23).

#### Budget Allocation:

- In 2022-23, **54% of the total budget for the Agriculture and Allied activities sector in**





Telangana was earmarked for the Rythu Bandhu Scheme.

#### Beneficiary Distribution:

- Among the beneficiaries, **53% belong to the BC (Backward Class) category, 13% each to SC (Scheduled Caste) and ST (Scheduled Tribe) categories, and the remaining to the 'Others' category.**

#### CROP LOAN WAIVER SCHEME

Implemented by the government of Telangana to reduce the debt burden on farmers in the state.

Outstanding crop loans between 2014-15 to 2018-19, amounting to Rs. 16,144 Crores were waived off in four annual installments.

The scheme covers short-term production loans and crop loans taken against gold disbursed to farmers by various lending institutions.

#### Eligibility Criteria:

- Crop loans sanctioned or renewed on or after April 1, 2014, and outstanding crop loans as of December 11, 2018, are eligible for waiver under the scheme.
- **The amount eligible for waiver is up to Rs. 1.00 lakh per family.**

#### Implementation Phases:

- **In the first phase**, outstanding crop loans up to Rs. 25,000 for 2.96 lakh farmers were **waived off with an amount of Rs. 408 Crores.**
- **In the second phase** during the year 2021-22, loans up to Rs. 50,000 for 2.46 lakh farmers were **waived off with an amount of Rs. 799 Crores.**
- The government plans to waive off the remaining outstanding loans up to Rs. 1,00,000 for 33.84 lakh farmers with a target amount of Rs. 20,348 Crores.

#### Implementation Mechanism:

- The waiver amounts are **credited directly into the loan accounts of eligible farmers through the RBI e-Kuber payment system.**
- This ensures transparency and timely disbursement of the waiver amounts to the intended beneficiaries.

#### Objective:

The primary objective of the Crop Loan Waiver Scheme is to **alleviate the financial distress of farmers by reducing their debt burden** and providing them with relief from loan repayment obligations.

#### RYTHU BIMA SCHEME

Initiated by the government of Telangana from 2018 onwards to provide **financial relief and social security to the family members or dependents in case of the loss of a farmer's life due to any reason.**

#### Key Features:

- **Insurance Coverage:** The scheme offers an insured amount of Rs. 5.00 Lakhs to the designated

nominee in the event of the farmer's death due to any cause, including natural death.

- **Eligibility:** Farmers in the age group of 18 to 59 are eligible to enroll under the scheme.
- **Premium Payment:** The entire premium is borne by the State government without imposing any burden on the farmer, irrespective of their landholding size.
- **Online Implementation:** The scheme is implemented entirely online for enrollment, claim settlement, and disbursement, ensuring ease of access and transparency.
- **Nominee Settlement:**
  - Nominees are not required to approach any office for the settlement of the claim amount.
  - The concerned village-level outreach officer collects information from the revenue department and submits it to LIC on behalf of the nominee.
- **Timely Disbursement:** The insured amount of Rs. 5.00 Lakhs is deposited into the account of the designated nominee within 10 days of the farmer's death.

#### Claim Settlement:

- From the year 2018-19 to 2022-23, the Government of Telangana **settled claims to an extent of Rs. 4,771 crores, benefiting 95,416 bereaved families.**

#### Objective:

The primary objective of the Rythu Bima Scheme is to provide financial security to the families of deceased farmers, ensuring their well-being and social security in times of adversity.

#### RYTHU VEDIKA (RV)

Under this scheme Rythu Vedikas (Farmers' Forums) are constructed in every Agriculture Extension Officer Cluster, each consisting of 1-3 villages.

- **A total of 2,601 RVs have been constructed across the state.**
- **Each RV is constructed at a cost of Rs. 22 lakhs,** with Rs. 12 lakhs allocated from the Agriculture Department and Rs. 10 lakhs from MGNREGA funds.
- **The purpose of RVs is to provide a platform for farmers to share information on crops, markets, and other relevant topics** to enhance their knowledge and improve crop yields.

#### Telangana Rythu Bhandu Samithi (TRBS) Committees:

- TRBS committees have been formed at the village, Mandal, District, and State levels.
- **These committees consist of a total membership of 1,60,990 persons who act as a bridge between farmers and Agriculture & Allied Departments.**
- They facilitate communication, coordination, and implementation of various agricultural schemes and initiatives.



## Construction of Multi-purpose Cement 'Kallams' (Drying Platforms):

- The government initiated the construction of multi-purpose cement 'Kallams,' which are drying platforms.
- **These platforms serve multiple purposes, including drying of agricultural produce, facilitating storage, and enhancing post-harvest management practices.**
- The construction of Kallams aims to improve the efficiency of agricultural operations and add value to the produce.

## INPUTS FOR AGRICULTURE: IRRIGATION, FREE POWER, SEEDS, AND FERTILIZERS

### Irrigation and Free Power:

- Telangana government has implemented initiatives to improve irrigation facilities.
- **24x7 free power is provided for agriculture, making Telangana the only state in the country offering uninterrupted power supply for agricultural purposes at no cost.**

### Seeds and Fertilizers:

- Telangana's conducive climatic conditions favor high-quality seed production.
- **Farmers in the state have developed expertise in seed production of various crops.**
- The government supplies seeds and fertilizers at subsidized rates through cooperative societies at the village level.
- Multinational companies have established processing units and warehouses in the state to store locally produced seeds.
- **In 2022-23, the government plans to distribute 1.66 lakh quintals of green manure seeds to farmers with a subsidy of Rs. 71.46 crores.**
- **Fertilizer supplies have increased by 46% from 25.36 lakh tonnes in 2014-15 to 37.06 lakh tonnes in 2021-22.**

### Seed Production and Distribution:

- Telangana State Seeds Development Corporation (TSSDC) is the nodal agency for seed-related activities.
- **The state engages in seed production and certification, achieving a target production of 5.25 lakh quintals of seed of different crops in 2022-23.**
- Telangana's seeds are supplied to other states like Andhra Pradesh, Tamil Nadu, Uttar Pradesh, Maharashtra, Rajasthan, Karnataka, and Chhattisgarh.
- **These initiatives have earned Telangana the title of "Seed Bowl of India," ensuring food security within the state and contributing to agricultural productivity nationwide.**

## RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

Rashtriya Krishi Vikas Yojana (RKVY) is a centrally sponsored scheme launched in 2007.

It aims to foster holistic development in agriculture and allied sectors by providing financial assistance to states and union territories.

### Objectives:

- **Enhance the growth rate of agriculture and allied sectors.**
- Ensure inclusive development by addressing the needs of various stakeholders in the agriculture value chain.
- **Encourage private investment in agriculture and agribusiness.**
- Improve agricultural infrastructure and promote sustainable practices.

### Components:

- **State and District Level Projects:** States formulate their agricultural development projects based on their unique requirements and priorities.
- **Support for Innovation and Extension:** Funding is provided for innovative projects and extension services to disseminate new technologies and best practices.
- **Infrastructure Development:** Investments are made in agriculture-related infrastructure such as irrigation, storage facilities, market yards, etc.
- **Capacity Building and Training:** Training programs are conducted to enhance the skills of farmers, extension workers, and other stakeholders.
- **Promotion of Agribusiness:** Initiatives are undertaken to promote agribusiness, value addition, and market linkages

### Implementation:

- The scheme is implemented by the **Department of Agriculture, Cooperation & Farmers Welfare, Government of India.**
- Funds are allocated to states and union territories based on **specific criteria such as performance, agricultural potential, and priorities.**
- States prepare annual RKVY implementation plans outlining their proposed activities and expenditure.

### Achievements:

- **RKVY has contributed to increased agricultural productivity, income generation, and rural development.**
- It has facilitated the adoption of modern technologies, improved infrastructure, and enhanced market access for farmers.
- **The scheme has played a crucial role in empowering farmers and promoting sustainable agricultural practices across the country.**



## SOIL HEALTH CARD SCHEME

The Soil Health Card (SHC) Scheme was launched by the Government of India in 2015.

It aims to assess the health of soils and provide farmers with personalized recommendations to improve soil fertility and crop productivity.

### Objectives:

- Evaluate soil health through comprehensive testing of soil samples.
- **Provide farmers with information on nutrient deficiencies, soil pH, organic carbon content, and other critical parameters.**
- Offer customized recommendations on the type and quantity of fertilizers and soil amendments required for optimal crop growth.
- Promote sustainable agricultural practices and reduce input costs.

### Components:

- **Soil Sampling and Testing:** Soil samples are collected from farmers' fields and tested in accredited laboratories.
- **Data Analysis and Recommendation:** Test results are analyzed to generate Soil Health Cards containing nutrient status, soil health indicators, and crop-specific recommendations.
- **Distribution to Farmers:** Soil Health Cards are distributed to individual farmers, providing them with actionable insights to improve soil fertility and crop yields.
- **Awareness and Training:** Farmers are educated on the importance of soil health and trained in soil conservation practices, nutrient management, and sustainable agriculture.

### Implementation:

- **The scheme is implemented by the Department of Agriculture, Cooperation & Farmers Welfare, Government of India, in collaboration with state governments and agricultural extension agencies.**
- **Soil samples are collected at regular intervals, typically once in every 2-3 years, from farmers' fields across the country.**
- The collected data is compiled and analyzed, and Soil Health Cards are generated and distributed to farmers free of cost.

## ENHANCING FARMER'S INCOME THROUGH ANIMAL HUSBANDRY

To achieve the goal of doubling farmers' income, diversification into non-farm income sources is crucial.

Animal husbandry activities, including sheep rearing, dairy farming, and poultry, offer significant opportunities to augment farm income and provide additional employment to farmers.

## SHEEP REARING AND DEVELOPMENT PROGRAMME

SRDP aims to strengthen the rural economy and provide sustainable livelihoods to shepherd communities.

- **Under the scheme, farmers receive 21 sheep with a subsidy component covering 75% of the unit cost.**
- In the first phase, 82.64 lakh sheep were distributed to over 3.93 lakh members of Primary Sheep Breeder Cooperative Societies.
- **The scheme has led to a substantial increase in the sheep population and meat production in Telangana, contributing significantly to the state's rural economy.**

## DAIRY SECTOR:

The dairy sector is an important avenue for farmers to increase earnings and access nutritious food.

- **The government provides Rs. 4 per litre of milk collected as an incentive to cooperative dairy members, directly credited to their bank accounts.**
- **The scheme has resulted in a 38% increase in milk production** and significant growth in milk procurement, benefiting 29.39 lakh beneficiaries.

## FODDER PRODUCTION AND DEVELOPMENT:

Quality feed and fodder are essential for improving livestock production and productivity.

- **The government emphasizes supplying fodder seeds to farmers at a 75% subsidy rate.**
- Initiatives include supplying fodder seeds and promoting fodder crop cultivation, aiming to produce 15.00 lakh MTs of green fodder in 51,250 acres during the current year.

## POULTRY SECTOR:

Telangana ranks 3rd in egg production in India, contributing 12.98% to the national output.

- To incentivize the poultry sector, the government provides **free power up to 200 units to poultry farms since 2015.**
- The poultry sector has witnessed significant growth, contributing to higher income generation and employment opportunities.

## AQUACULTURE:

Fisheries play a crucial role in socio-economic development, providing income and nutritional food to fishermen families.

- The government focuses on enhancing seed production, stocking water bodies with quality fish seed, and promoting new technologies.
- **Initiatives such as the Integrated Fisheries Development Scheme and provision of customized vehicles aim to boost fish and prawn production, increasing income and welfare of fisheries communities.**

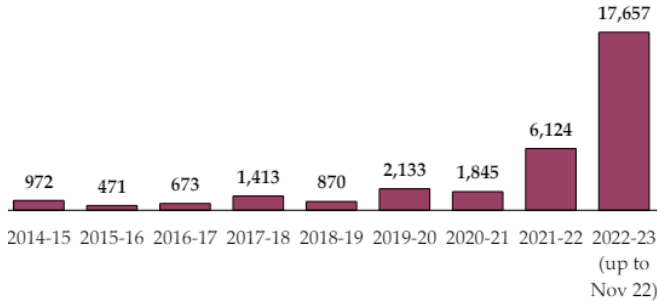


## TELANGANA'S OIL PALM SCHEME

Telangana State is recognized as one of the most promising regions for oil palm cultivation.

It ranks 6th in terms of cultivated area, with 68,440 acres dedicated to oil palm cultivation.

The state is the 2nd highest producer of Fresh Fruit Bunches (FFB) and ranks 1st in Oil Extraction Rate (OER) in India, holding a significant 19.32% share.



### Government Support and Assistance:

- The government offers substantial assistance to promote oil palm cultivation, providing 50% assistance on mechanization tools.
- A mission has been initiated to bring 20 lakh acres under oil palm cultivation as part of crop diversification efforts.

### Industry Presence and Infrastructure:

- Currently, 11 companies operate in the state, actively involved in oil palm cultivation and processing.
- These companies have established 30 nurseries with a collective capacity to raise 2.67 crore oil palm seedlings, indicating a robust infrastructure for the industry.

### Regulation and Legislation:

- Oil palm cultivation and processing activities in Telangana are regulated by the Telangana Oil Palm (Regulation of Production and Processing) Act 1993 (Act No.3 of 1993).
- The act mandates that allotted companies pay the fixed FFB price set by the government to farmers on a monthly basis, ensuring fair compensation for their produce.

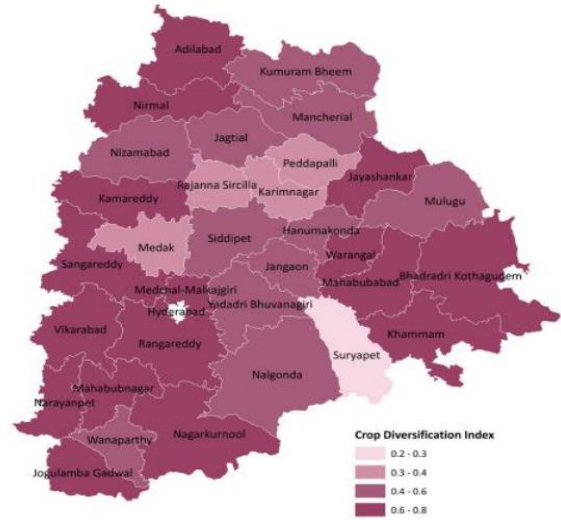
### Expansion and Potential:

- The government has identified and allotted factory zones for expanding oil palm cultivation in newly identified locations across the state.
- Approximately 9.49 lakh acres of potential land area have been notified for oil palm cultivation, indicating substantial scope for further expansion and growth in the sector.

## CROP DIVERSIFICATION IN TELANGANA

Crop diversification is identified as one of the most effective strategies recommended by researchers to enhance farm income.

By cultivating a variety of crops, farmers can mitigate the risks associated with fluctuating prices and market conditions, thereby stabilizing their income.



Source: Directorate of Economics and Statistics, Government of Telangana

### Government Emphasis and Recommendations:

- The government of Telangana has recognized the significance of crop diversification in improving farmer income and agricultural sustainability.
- Various crops have been recommended for diversification, including Groundnut, Sunflower, Sesamum, Bengal Gram, Black Gram, Green Gram, Jowar, Castor, Mustard, Safflower, and Oil Palm.

### Importance of Crop Diversification:

- Crop diversification helps in avoiding production glut by balancing the agricultural output across different crops.
- It reduces the dependency on a single crop, making the farming system more resilient to market fluctuations and climatic uncertainties.

### Regional Disparities in Diversification:

- In the fiscal year 2021-22, significant variations in crop diversification were observed across different districts of Telangana.
- Districts such as Nirmal, Vikarabad, and Rangareddy exhibited higher levels of crop diversification, as indicated by a crop diversification index.
- In contrast, districts like Peddapalli, Karimnagar, and Suryapet showed lower levels of diversification, potentially indicating the need for targeted interventions and support to promote diversification efforts in these regions.

## II. SOILS OF ANDHRA PRADESH

Andhra Pradesh, located in the southeastern part of India, exhibits diverse geographical features ranging from coastal plains to upland plateaus and hilly terrains.

This diversity contributes to the presence of various soil types across the state, each with unique characteristics and suitability for different agricultural activities.

### TYPES OF SOILS IN ANDHRA PRADESH

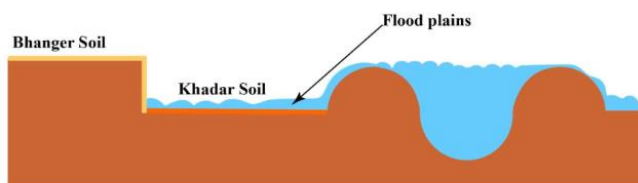
The six different soils of Andhra Pradesh are as follows:

1. Deltaic Alluvial Soils
2. Laterite Soils
3. Coastal sandy soils
4. Hill soils
5. Red soils
6. Black soils

#### DELTAIC ALLUVIAL SOILS

Deltaic alluvial soils in Andhra Pradesh are primarily located in the fertile delta regions of major rivers like the Godavari and Krishna.

- It makes up approximately 5% of soil in Andhra Pradesh
- These soils form through the deposition of fertile alluvium carried by rivers and deposited in their delta areas.
- Rich in organic matter and minerals, they are dark in color and well-drained, with good water retention capacity.
- Mainly found in coastal districts like East Godavari, West Godavari, and Krishna, these soils are highly fertile, making them suitable for intensive agriculture, particularly for paddy cultivation.



#### Alluvial soils: Bhangar and Khadar

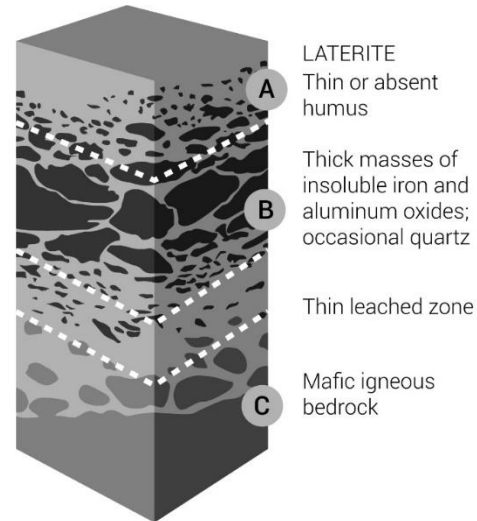
- The newer alluvial soil that forms along the flood plains are called Khadar soil. On the other hand, old alluvial soil that lies on slightly elevated location is called Bhangar soil.
- Farmers practice various agricultural techniques like crop rotation and intercropping to maintain soil fertility.
- However, challenges such as salinization and waterlogging in coastal areas require proper soil management practices like drainage systems and conservation measures to sustain agricultural productivity and prevent soil degradation.

- Apart from the Godavari and Krishna delta regions, alluvial soils also occur in the districts of SPS Nellore, Srikakulam, Vishakapatnam, Anakapalli, Konaseema and Guntur.

#### LATERITE SOILS

Laterite soils in Andhra Pradesh are predominantly found in the hilly regions of the Eastern Ghats.

They occupy just 1% of area of the state.



- These soils develop through the weathering of rocks rich in iron and aluminum minerals under conditions of high rainfall and warm temperatures. These soils are also called as Red Chalk Soils.
- They are typically red to yellowish red in color due to the presence of iron oxides.
- Laterite soils are often poor in fertility and have low water-holding capacity, making them less suitable for agriculture without proper soil management practices.
- However, they are suitable for certain crops like cashew, tea, coffee, and some fruit trees.
- Due to their porous nature, they are prone to erosion and leaching, leading to soil degradation issues.
- Therefore, conservation measures such as terracing, mulching, and afforestation are essential to prevent soil erosion and maintain soil health in laterite soil areas of Andhra Pradesh.

#### COASTAL SANDY SOILS

Coastal sandy soils in Andhra Pradesh are primarily found along the coastal areas of the state, particularly in regions close to the Bay of Bengal.

- These soils are spread over 3km to 12km from the sea coast in Andhra Pradesh.
- These soils are characterized by their sandy texture, low fertility, and high permeability.

- They are formed by the deposition of sand and other minerals carried by rivers and coastal currents over time.

## Sandy Soils



- Larger pore space
- Low water holding capacity
- Rapid infiltration and permeability
- Higher leaching
- Low organic matter
- Low fertility
- Generally better drained
- Easy to work with

This doesn't mean that sandy soils are not as "good" as clayey soils. Sandy soils are just good for different things (peanuts, timber production, etc.).

### Key features of coastal sandy soils include:

#### Sandy texture:

- These soils have a **coarse texture with large particles**, which results in good drainage but poor water retention.

#### Low fertility:

- Coastal sandy soils are **often nutrient-poor, lacking essential minerals required for plant growth**.
- They may require frequent fertilization to support agriculture.

#### High permeability:

- Due to their loose structure, **water infiltrates quickly through coastal sandy soils**.
- This can lead to rapid leaching of nutrients, especially during heavy rainfall.

#### Salt content:

- In some areas, **coastal sandy soils may have high levels of salinity, posing challenges for crop cultivation**.
- Soil salinity can be managed through proper irrigation and drainage practices.

#### Crop suitability:

- **Despite their limitations, coastal sandy soils support the cultivation of certain crops such as millets, pulses, vegetables, and cashew nuts.**

However, the productivity of these soils may be enhanced through soil amendments, organic matter addition, and appropriate crop selection.

### HILL SOILS

Hill soils in Andhra Pradesh are primarily found in the hilly and mountainous regions of the state, such as the Eastern Ghats and the Nallamala Hills.

- These soils constitute 5% area of andhrapradesh.
- These soils are characterized by their unique properties and diverse compositions, influenced by

factors such as elevation, climate, and geological formations.

### Key features of hill soils include:

#### Variable composition:

- Hill soils exhibit a wide range of compositions, including **sandy loam, clayey loam, and gravelly soils**, depending on the local geological conditions.

#### Weathering:

- Hill soils **undergo extensive weathering** processes due to the effects of temperature variations, precipitation, and biological activity.
- This results in the breakdown of rocks and minerals, contributing to soil formation.

#### Organic matter:

- Despite their rocky nature, **hill soils may contain organic matter derived from decaying vegetation and biological activity**.
- Organic matter helps improve soil structure, moisture retention, and nutrient availability.

#### Slope erosion:

- **Steep slopes in hilly terrain are prone to erosion, leading to soil degradation and loss of fertility.**
- Soil conservation measures such as terracing, contour plowing, and afforestation are essential for mitigating erosion and maintaining soil stability.



#### Crop cultivation:

- **Hill soils are generally less fertile compared to alluvial soils found in plains.**
- However, they support the cultivation of crops adapted to hilly conditions, such as pulses, oilseeds, fruits, and spices.
- **Terrace farming is commonly practiced to maximize arable land in hilly areas.**

#### Water drainage:

- Due to their topography, **hill soils exhibit rapid drainage characteristics, which can result in water runoff and soil erosion during heavy rainfall.**
- Sustainable land management practices are crucial for retaining soil moisture and preventing erosion.

### RED SOILS

Red soils, also known as "ferruginous soils," are prevalent in Andhra Pradesh, particularly in the regions with tropical and subtropical climates.



Red soils make up 66% of the cultivated regions across the state.

#### Color:

- The distinctive **red color of these soils is due to the presence of iron oxide**, primarily hematite.
- The intensity of redness can vary, ranging from **pale red to deep crimson**, depending on the iron content and degree of weathering.

#### Texture:

- Red soils typically have a **sandy to clayey texture, with a loose and friable structure**.
- They may contain a mixture of sand, silt, and clay particles, influencing their drainage and water-holding capacity.

#### Acidity:

- **These soils tend to be acidic in nature**, with a pH ranging from slightly acidic to moderately acidic.
- The acidity can **affect nutrient availability to crops** and may require lime application for pH correction.

#### Nutrient content:

- **Red soils are generally low in fertility**, particularly in nitrogen, phosphorus, and organic matter.
- They may exhibit deficiencies in essential nutrients, necessitating the use of **fertilizers and organic amendments for crop cultivation**.

#### Cropping suitability:

- Despite their low fertility, **red soils support a variety of crops, including millets, pulses, oilseeds, cotton, groundnut, and tobacco**.
- Certain crops, such as groundnut and cotton, are well adapted to the drought-prone conditions often associated with red soils.

#### Water retention:

- **Red soils have moderate water-holding capacity**, allowing them to retain moisture during the rainy season while facilitating drainage to prevent waterlogging.
- However, **their water retention capacity may vary depending on soil texture and structure**.

#### Soil management:

- Sustainable soil management practices, such as **organic farming, crop rotation, and mulching**, are essential for maintaining soil health and fertility in red soil areas.
- Soil conservation measures, such as **contour bunding and terracing**, help prevent erosion and soil degradation.
- **Red soils are abundantly found in Rayalaseema region and upland segments of Tirupati, Prakasam, Guntur, Kakinada, West Godavari, East Godavari, Eluru, Vishakapatnam and Srikakulam**.

## BLACK SOILS

Black soils, also known as regur soils or black cotton soils, are prominent in Andhra Pradesh, particularly in the central and western regions of the state.

Black soils cover nearly **25% of the land area**.

## Black Soil

Black soil is created when lava rocks weather away



#### Color and Texture:

- **Black soils are known for their dark color, ranging from deep black to dark grey**, attributed to their high clay content and organic matter.
- They have a clayey texture with excellent moisture retention capacity.

#### Formation:

- **These soils originate from the weathering of basaltic rocks rich in iron, magnesium, and aluminum**.
- The weathering process leads to the formation of clay minerals like **montmorillonite and smectite**, contributing to the unique properties of black soils.

#### Fertility:

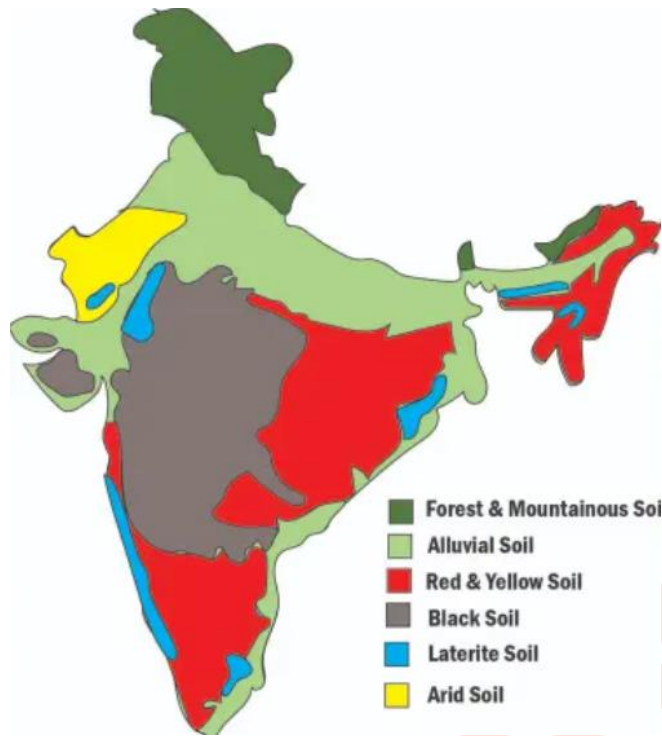
- **Black soils are highly fertile due to their rich mineral composition** and high moisture retention capacity.
- They support a variety of crops, including **cotton, sorghum, maize, pigeon pea, and soybean**, making them valuable for agriculture.

#### Suitability for Agriculture:

- Despite their fertility, black soils can become waterlogged during the rainy season, requiring proper drainage management.
- **Sustainable soil management practices, such as conservation tillage and crop rotation, are essential for maintaining soil fertility and productivity**.

#### Economic Importance:

- Black soils play a crucial role in Andhra Pradesh's agricultural economy, **supporting diverse crop cultivation and contributing significantly to food and fiber production in the region**.
- Understanding their properties and implementing appropriate soil conservation measures are essential for sustainable agricultural development in Andhra Pradesh.



## SOILS DEGRADATION IN ANDHRAPRADESH

Soil degradation in Andhra Pradesh is a pressing environmental issue driven by various factors.

- **Erosion, both water and wind-induced**, is a significant contributor, stripping away topsoil and reducing fertility.
- **Improper irrigation practices often lead to waterlogging and salinization**, further diminishing soil quality and productivity.
- **Chemical pollution** from intensive agricultural practices, such as **excessive fertilizer and pesticide use**, poses threats to soil health and ecosystem balance.
- Deforestation and land degradation exacerbate these problems, disrupting soil structure and stability.
- **Addressing soil degradation requires comprehensive strategies including erosion control measures, improved irrigation techniques, sustainable land management practices, afforestation initiatives, and promotion of organic farming methods.**
- **Collaborative efforts involving government intervention, community participation**, and scientific research are crucial for preserving soil quality and ensuring long-term agricultural sustainability in Andhra Pradesh.



## PRACTICE QUESTIONS: POLITY 2024

1. Which among the following constitutes the strongest argument in favour of democracy?

- (a) The democratically elected leaders know the best interest of the people.
- (b) The decisions are taken after many consultations and discussions.
- (c) The existence of democracy enhances the dignity of citizens.
- (d) Democracy solves the socio-economic problems of a nation

2. Which among the following is not explicitly stated in the Constitution of India but implicitly provided under it?

- 1. Doctrine of Eminent Domain
- 2. Doctrine of Basic Structure
- 3. Doctrine of Eclipse

How many of the doctrines given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

3. With regards to "Protection in respect of conviction for offenses" as mentioned in Article 20 of the Constitution of India, which of the below statements is/are correct?

- 1. It prohibits retrospective criminal legislation.
- 2. The immunity from self-incrimination extends to civil proceedings
- 3. It provides immunity from double jeopardy, including prosecution for an offence.
- 4. The Article also bars the medical examination of accused and taking thumb impressions

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

4. Racial discrimination in India is explicitly prohibited under which Article of the Constitution of India?

- (a) Article 14
- (b) Article 16
- (c) Article 17
- (d) Article 21

5. Consider following Assertion and Reason statements

Assertion (A): The State legislature cannot make a law to punish the persons practicing untouchability.

Reason (R): The subject matter 'untouchability' falls in the sphere of the Union List.

Choose the correct answer using the codes given below

- (a) Both 'A' and 'R' are individually true and 'R' is the correct explanation of 'A'.
- (b) Both 'A' and 'R' are individually true but 'R' is not the correct explanation of 'A'.
- (c) 'A' is true but 'R' is false
- (d) 'A' is false but 'R' is true.

6. Consider the following statements about framing of the Constitution

- 1. Jawaharlal Nehru opined that weak central authority would be incapable of ensuring peace
- 2. The Draft Constitution provided three lists of subjects for making legislation.
- 3. B.R. Ambedkar wanted a stronger centre than what it was under the British regime

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

7. As of now, the Right to Property, under Article 300A, could be considered as a right in which of the following ways?

- 1. Constitutional right
- 2. Statutory right
- 3. Fundamental right
- 4. Human right

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

8. Why the Board of Control for Cricket in India (BCCI) could not be considered a 'State' under Article 12 of the Indian Constitution?

- 1. It is not created by any law of the Parliament.
- 2. The Government does not have any share capital in the BCCI

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

9. Which of the following Supreme Court verdicts is either directly or indirectly related to the Right to Life and Liberty under Article 21 of the Indian Constitution?

- 1. Ak Gopalan case
- 2. Maneka Gandhi case
- 3. K.S Puttaswamy case
- 4. Vishaka Guidelines

How many statements given above are correct?





- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

10. Consider the following statements about Directive Principles of State Policy (DPSP)s.

1. The directives, enshrined in Part IV of the Indian Constitution, require legislation for its implementation.
2. The Judiciary cannot issue the writ of Mandamus against the state to enforce DPSP.
3. They can't be used by courts in determining the Constitutional Validity of any law
4. They promotes social and economic democracy in India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

11. Consider the following provisions of the Indian constitution

1. Fundamental Rights
2. Directive Principles of State Policy
3. Fundamental Duties

Which of the below constitutional amendment made changes to all above constitutional provisions?

- (a) 42<sup>nd</sup> Amendment Act
- (b) 44<sup>th</sup> Amendment Act
- (c) 97<sup>th</sup> Amendment Act
- (d) 86<sup>th</sup> Amendment Act

12. Consider the following pairs about the Constituent Assembly committees and their chairman

Constituent Committee	Assembly	Head of the Committee
States Committee		Jawaharlal Nehru
Minorities, Tribal and Excluded areas Committee		Sardar Vallabhai Patel
House Committee		G.V. Mavlankar
Order of Business Committee		Dr. Rajendra Prasad

How many pairs given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

13. After the expansion of the scope of Article 19 by the Supreme Court, how many of the following provisions are included under its ambit?

1. Right to Access to Internet
2. Right to be informed

3. Right not to listen
4. Right to Bandh

Select the correct answer

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

14. Mandamus can be issued under which of the following circumstances?

1. To indirectly restrain an authority from exercising statutory functions.
2. Against CJI acting in his/her judicial capacity
3. To enforce contractual obligations against a Private body performing public duty.
4. It can be issued against the Governor of a State

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

15. Consider the following statements about Fundamental Rights

1. The Right to vote is a Fundamental Right available to citizens only.
2. Right to know about the candidates contesting the election is a fundamental right of the voters.
3. Non-Resident Indians (NRI) are provided with Electoral Photo Identity Card (EPIC) to vote in the elections in India.

Which of the statements given above are incorrect?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

16. Consider the following statements

1. Unlike in the USA, Naturalized citizens can become the Head of state.
2. Oath of Allegiance is mandatory for Naturalization
3. Citizens living outside India continuously for 7 years will be deprived of their citizenship
4. State government can regulate the citizenship in India as like in USA

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

17. Consider the following statements about characteristics of Liberalism

1. Individual Liberty



2. Nationalisation of Industries
3. Welfare Measures by the state
4. Limited State

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

18. Consider the following statements

1. The Parliament of India can make a discriminative law in favour of women for affirmative reasons.
2. Currently, only four states in India are eligible to provide employment based on reservation with respect to residence within the state

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

19. With reference to the Indian Constitution, the concept of 'principled distance' is related to

- (a) Federalism
- (b) Socialism
- (c) Secularism
- (d) Separation of Powers

20. Consider the following pairs about the Country and the Status of Fundamental Rights

Country	Status of Fundamental Rights
Australia	Only Democratic country with No Bill of Rights
Britain	A Democracy with no Legislation concerning Human Rights
Canada	Has a Human Rights Act passed by Parliament
USA	Did not contain any Fundamental Rights in its original Constitution

How many pairs given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

21. The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, was enacted in accordance with which of the following provisions of the Constitution of India?

1. Article 21
2. Article 23
3. Article 17
4. Article 46

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

22. Women played a significant role during the freedom struggle and shaped the future of India after Independence. Consider the following statement related to the important political position held by women in free India:

1. Rajkumari Amrit Kaur was the only women minister in the 1st Government formed in free India (1947).
2. There was no women member in the Interim Government headed by the Viceroy Mount Batten.
3. Rukmini Devi Arundale was the first woman in Indian history to be nominated to Rajya Sabha
4. Sarojini Naidu was the first woman governor of an independent India state

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

23. Consider the following events in history of India

1. Establishment of the Supreme Court of Calcutta
2. Abolition of Secretary of State
3. Constitution of Governor General's Legislative Council
4. Abolition of Council of India

Arrange the above events in chronological order

- (a) 1-2-3-4
- (b) 1-3-4-2
- (c) 1-3-2-4
- (d) 4-2-3-1

24. Which article of Indian constitution is source of Judicial Review?

- (a) Article 32
- (b) Article 13
- (c) Article 142
- (d) Article 226

25. Consider the following statements about the Mandal Commission recommendations

1. The commission recommended 35% reservation for Other Backward Classes
2. V.P Singh government implemented the reservation for OBCS in government jobs.
3. In Mandal case, the Supreme Court excluded the Creamy layer within the ambit of OBC reservation
4. Ram Nandan committee was appointed to identify the creamy layer among OBCs.

How many of the statements given above are correct?

- (a) Only one



- (b) Only two
- (c) Only three
- (d) All four

26. Consider the following statements about the 'Death Penalty'

1. Indian judicial system is based on combination of deterrence and reformation
2. The Judiciary must record the reasons for awarding the death sentence
3. The President has discretionary power to decide on mercy petitions
4. The Supreme Court devised the 'Rarest of Rare Doctrine' in Bachhan Singh case of 1980

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

27. Consider the following directive provided under Part IV of Indian Constitution

1. Article 39: To Secure opportunities for healthy development of children
2. Article 48: To Protect and improve the environment and to safeguard forests and wild life
3. Article 45A: To provide early childhood care and education to children below the age of six years
4. Article 43A: To secure the participation of workers in the management of industries

How many of the above directives were added by 42<sup>nd</sup> Constitutional Amendment Act?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

28. Consider the following statements about Exceptions provided to Fundamental Rights under Article 31C

1. Article 31C was inserted by the 25<sup>th</sup> Constitutional Amendment Act
2. It gives immunity to the state to implement Article 39(b) or (c) against the violation of Fundamental Rights
3. Keshavanada Bharathi Case: 1973 is associated with it
4. President assent is required for the state governments to implement a law to give effect to Article 31C

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

29. Consider the following related to Article 15

1. Article 15 prohibits discrimination both by the state and individuals
2. The state is empowered to make any special provision for the empowerment of the economically weaker sections
3. Collective property holding shall be considered for the EWS test
4. EWS is available to only those who are not covered by SC/ST/OBC.

Which of the above statements are correct?

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) All of the above

30. Consider the following about Article 21

1. Before 86<sup>th</sup> CAA, provision for free and compulsory education for children never existed in any part of the Constitution
2. The 86<sup>th</sup> CAA added Article 51A as a fundamental duty.
3. The idea of compulsory education is grounded in ideal of social justice.
4. State shall provide free and compulsory education to all children of the age of six to fourteen years

How many of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) 3 only
- (d) All the above

31. Justice Verma Committee is related to how many of the following?

1. Fundamental Rights
2. Directive Principles of State Policy
3. Fundamental Duties

Select the correct code:

- (a) 1 Only
- (b) 2 Only
- (c) 3 Only
- (d) None

32. The most important feature of the Federal system adopted by the Indian Constitution is the principle that

- (a) Separate elections to the Central and the State legislatures
- (b) Division of powers under which states enjoy more autonomy than the Centre
- (c) Indian Union is a federal state with subsidiary unitary features
- (d) Relations between the States and the Centre would be based on cooperation





33. Consider the following statements

1. The State Legislature ceases to have the power to make law under a subject that has been voluntarily submitted by it to the Parliament
2. If the subject matter of law falls within the state list, the prior consent of the state legislatures has to be obtained by the Parliament to give effect to the international treaty.
3. The State Legislature will not have the power to enact a law on a subject for which a resolution in the Upper House already exists.
4. Rajya Sabha can pass a resolution with simple majority to enable parliament to make a law on state list

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

34. Consider the following pairs

Commission	Recommendation
Sarkaria commission	Permanent Intergovernmental Council
Punchhi commission	Power of the central government to deploy its armed forces in a state without the state's consent
1 <sup>st</sup> Administrative Reforms commission	Creation of more All-India Services
Tapas Majumdar committee	Right to Education as fundamental right under Article 21A

How many pairs given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

35. Consider the following statements

1. The President of India has the same constitutional authority as the United States of America.
2. As like USA, Indian President is part of Legislature
3. In the Indian Parliamentary system, the executive is indirectly responsible to the People.

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

36. Consider the following statements with reference to the Legislative powers of the Parliament and State Legislatures

1. Parliament has the discretionary power to override the state law enacted under the List II of the Seventh Schedule in any circumstances.
2. Parliament can override a state law made under the concurrent list
3. In case of conflict between the Centre and the State laws on the Concurrent list, the state law prevails if it has received the President's assent.
4. When the president rule is in operation in a state, Parliament get the powers to make laws on state list

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

37. Consider the following statements about Parliamentary committee on Sub-ordinate legislation

1. The Committee examines representations made to it in regard to rules, regulations, bye-laws, etc., made or required to be made under an Act
2. The Committee shall consist of not more than fifteen members, who shall be nominated by the Speaker
3. The term of office of members of the Committee shall not exceed one year
4. There are six Parliamentary committees to scrutinise and control the function of Executive

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

38. Consider the following statements about Delimitation Commission of India

1. It is constituted by the Election Commission of India from time to time
2. The Commission shall determine its own procedure and have all the powers of a civil court while functioning.
3. The orders of the Commission cannot be challenged once they are published in the Gazette of India
4. Five such delimitation commissions were constituted since Independence

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

39. Who among the following persons influences the process of Judicial appointments in India?



1. Council of Ministers
2. Governors
3. Chief Ministers
4. Chief Justice of India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

40. Consider the following statements about passage of bills in Parliament

1. A Private member bill is introduced by a legislator who is not acting on behalf of the executive branch.
2. Any member of the Parliament can introduce a Constitutional Amendment bill.
3. A Private member cannot introduce more than four bills during a session.
4. Private member bills can be introduced and discussed as like any other normal bill

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

41. Consider the following statements about the President

1. Parliamentary law made in the concurrent list should be executed by states
2. The President of India can exercise absolute veto if the cabinet resigns before the bill gets his/her assent.
3. Since the enactment of the Constitution of India, the pocket veto has not been exercised by the President.
4. Qualified Veto is not available to the Indian President

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

42. With reference to the 73<sup>rd</sup> Constitutional Amendment Act, 1992, consider the following statements:

1. A Panchayat reconstituted after premature dissolution does not enjoy the full period of five years.
2. Fresh elections to constitute a Panchayat shall be completed before the expiry of its duration of five years.

Identify the correct statement/s:

- (a) Only 1
- (b) Only 2

- (c) Both 1 and 2
- (d) Neither 1 nor 2

43. Consider the following statements about the constitutional amendment bills

1. There is no separate constituent body for amending the Constitution.
2. The State Legislature has to either ratify or reject the Constitutional Amendment Bill recommended to them within six months of the time period.
3. The role of the State Legislature in amending the Constitution is limited.
4. It is mandatory to get the views of the affected state when a state is bifurcating into two or more states/union territory

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

44. We adopted the post of the Vice President based on the model of the United States of America, but how does our model differ from that model?

1. The term of the Vice President of India differs from the term of the Vice President of the United States of America
2. The Vice President of India is indirectly elected, while the Vice President of the United States of America is directly elected
3. In the United States of America, when the office of President falls vacant, the Vice President becomes President and serves out the remaining of the previous President's term as President
4. Sarvepalli Radha Krishna was the first Vice President of India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

45. Consider the following statements about the financial relations between the centre and the states

1. All taxes levied and collected by the Centre and State form part of the Consolidated Fund of India.
2. The manner of distribution of any type of tax proceeds between the Centre and States is determined by the Parliament
3. No surcharge can be imposed on GST.
4. All proceeds of cesses are forms the part of the consolidated fund of India

How many statements given above are correct?

- (a) Only one



- (b) Only two
- (c) Only three
- (d) All four

46. Consider the following statements about Council of Ministers

1. Any person, who may or may not be a member of the Parliament, if preferred by the party having a majority in the Lok Sabha, can become the Prime Minister.
2. The Constitution explicitly states that the council of ministers is collectively responsible to the Parliament.
3. The Administrative Reforms Commission recommended replacing the oath of secrecy for the ministers with the oath of transparency.
4. The 91<sup>st</sup> Constitutional Amendment Act limited the number of ministers in council to 25% of total members of the Lok Sabha

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

47. Consider the following statements

1. In the absence of the Speaker of the House, the Deputy Speaker can certify the bill as a Money bill.
2. Article 176 of the Constitution of India provides a discussion of the Governor's address in the State Legislature
3. Legislative privileges in the House can be extended to those who have a Right to Speak or to participate in the proceedings of a House
4. Governor of a state is not entitled to the privileges of the legislature of a state

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

48. Consider the following statements about Vice-President

1. Vice-President is removed from office through a resolution passed by a majority of all the then members of the Rajya Sabha and agreed to by the Lok Sabha.
2. The State Governor cannot contest the election of Vice-President as it amounts to the office of profit.

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

49. Consider the following statements with reference to the process of electing the President of India

1. An elector cannot propose or second the nomination of more than one candidate.
2. A vote cast by each MP or MLA has equal value.
3. The Presidential candidate secures victory by getting the highest votes among the polled votes.
4. In the recently held Presidential election, only the Union Territories of Jammu and Kashmir, Delhi and Puducherry participated in the voting

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

50. Consider the following statements with reference to the Secretary-General of Lok Sabha and Rajya Sabha

1. The Secretary-General is appointed by the President of India on the recommendations of the Chairman in the case of Rajya Sabha and the Speaker in the case of Lok Sabha
2. He/She holds a rank equivalent to the highest civil servant of the Union Government.
3. Lok Sabha Secretary-general authenticate bills in the absence of Speaker

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

51. Which of the following committees recommended the constitutional status to Panchayat Raj institutions in India?

1. Thungon committee
2. Gadgil committee
3. Ashok Mehta committee
4. G.V.K Rao committee

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

52. Consider the following statements about the Central Council of Local governments

1. It is a constitutional body constituted by President of India
2. Presently, it can deal with the matters related to Urban Local bodies only
3. Prime Minister will act as a chairmen of Central Council of Local Government
4. It will examining the possibility of cooperation between the centre and the states





How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

53. Consider the following statements about the Cantonment Board

1. Cantonment Board are created by the Central Government for Civic administration in Border areas only
2. The elected and nominated members hold office for the term of 5 years
3. Military commander of the station is ex-officio president of the board
4. The executive officer of the cantonment board is appointed by the president

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

54. Consider the following statements about Municipalities

1. If an area is administered as industrial township, then it shall not be made as Municipality
2. Members having special knowledge can become a member of Municipality with voting rights
3. Ward Committees shall be constituted for one or more wards having a population of more than 5 lacks
4. Governor shall place the recommendations of state finance commission along with the action taken by the government before the state legislature

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

55. Who among the following is considered as "Father of Local-Self Government in India"

- (a) Lord Mayo
- (b) Lord Ripon
- (c) Lord Lytton
- (d) Earl Dufferin

56. Questions regarding disqualifications for becoming members of Panchayat shall be determined by:

- (a) High court of the state
- (b) Governor
- (c) State legislature
- (d) Such authority as determined by the state legislature

57. According to the Indian Constitution, power to legislate on 'Cyber Laws' lies with:

- (a) Union Government only
- (b) State Government only
- (c) Both Union and State Governments
- (d) None of the above as only regulations can be framed by autonomous regulators.

58. The Supreme Court of India is:

1. A federal court
2. Guarantor of Fundamental Rights
3. Guardian of Constitution
4. Highest court of appeal

Select the correct answer using the codes below:

- (a) 1, 2, 3 and 4
- (b) 2, 3 and 4
- (c) 2 and 4
- (d) 3 and 4

59. Who can designate an advocate as 'Senior Advocate'?

- (a) Supreme Court
- (b) High Court
- (c) Both (a) and (b)
- (d) Bar Council of India

60. With reference to contempt of court, which of the following statements are correct?

1. The Sanyal committee report recommended for Content of Court in India
2. The Supreme Court of India has the only power to punish for contempt of court
3. Civil contempt means wilful disobedience to any judgement of the court.
4. Criminal contempt means publication of any matter that lowers the authority of the court.

Select the correct code:

- (a) 1 and 2 only
- (b) 1, 3 and 4 only
- (c) 3 only
- (d) 1, 2 and 4 only

61. Consider the following statements regarding Tribunals:

1. Tribunal is a quasi-judicial institution that is set up to deal with problems such as resolving administrative or tax-related disputes.
2. Tribunals were not part of the original constitution, it was incorporated in the Indian Constitution by 42nd Amendment Act, 1976.

Which of the above statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2



62. Which of the following statements are correct regarding Lok Adalat?

1. The Lok Adalat shall have the same powers as are vested in a Civil Court.
2. It was given statutory status under the Legal Services Authorities Act, 1987.
3. There is no court fee and if court fee is already paid the amount will be refunded if the dispute is settled at Lok Adalat.

Select the correct answer:

- (a) 1,2 and 3
- (b) 2 and 3
- (c) 1 and 3
- (d) 2 only

63. Which of the following statements are incorrect regarding Gram Nyayalayas?

1. They have both civil and criminal jurisdiction over the offences.
2. They are presided over by Nyayadhikari, who is appointed by the State Government in consultation with the respective high court.

Select the incorrect statements:

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

64. Consider the following statements about Electoral Bonds

1. They are introduced as finance bill during the 2017 budget session
2. There is no cap on number bonds, a individual/company can purchase
3. All political parties are allowed to receive donations through electoral bonds
4. All unclaimed donations will be deposited into the Prime Minister's Relief Fund

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

65. Consider the following offences, which form the ground for disqualification under Representation of People's Act: 1951

1. Promoting enmity between different groups on the grounds of caste
2. Involved in hoarding or profiteering activities
3. If a candidate subsists a contract entered into by him in course of his trade with the appropriate government

4. If a candidate is a managing director of a company in which government has more than 10% of equity share

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

66. Consider the following statements

1. According to the Representation of the People Act 1951, a person cannot contest from more than two constituencies for a Lok Sabha elections
2. A person shall not vote at any election if he is under Preventive detention.
3. Acceptance of money to vote for a candidate is not an offense under the Indian Penal Code.
4. If somebody is convicted for some offense and is sentenced to imprisonment for 3 years, he cannot contest the election.

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

67. In the context of General Elections in India, which of the following rights are available to a Citizen of India?

1. Right to contest from anywhere in India
2. Right to vote from anywhere in India
3. Right to canvas anywhere in India
4. Right to form political party anywhere in India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

68. Consider the following statements about National Political Parties

1. To recognise as a national party, the party must win at-least 2% of votes from not less than three states
2. The party should be recognised as state party in at-least four states
3. Only one proposer is required to file nomination for a recognised national party candidate
4. The election symbol of that party cannot be used by any other political party in polls across India.

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four



69. Consider the following statements about Comptroller and Auditor General of India (CAG)

1. He assists the Public Accounts Committee of the Parliament.
2. Finance minister represents the CAG in the Lok Sabha
3. He can be removed by the president only in accordance with the procedure mentioned in the Constitution.
4. A retired CAG can be appointed as a governor of a state

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

70. Which of the following languages were added through an amendment to the Eighth Schedule of the Indian Constitution?

1. Sindhi
2. Santhali
3. Maithili
4. Konkani

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

71. Consider the following statements about the Consumer Protection Act: 2019

1. The Central Consumer Protection Authority under the act can suo-moto inquire and investigate violations of consumer rights.
2. Redressal against unfair or restrictive trade practices is recognized as one of the right of consumer under the act
3. State Consumer Dispute Redressal Commission can hear a cases where value is more than 10 crore but less than 100 crore
4. Product liability can be applicable only against manufacturer of the product

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

72. Consider the following statements about One Nation One Ration Card Scheme

1. The families coming under the category of below poverty line (BPL) only are eligible under the programme

2. Annavitran portal was lunched to register/record the inter-state transactions
3. Government has launched the "MERA RATION" mobile app to ease the process for migrant workers
4. This programme will help the country to achieve the SDG 1, 2 and 3

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

73. Consider the following statements about Tribunals in India

1. The provisions with respect to the tribunals existed as a part of the original Constitution.
2. The Parliament is empowered to establish tribunals for the adjudication of disputes related to the public services of local bodies.
3. State legislature has the power to create tribunals to resolve industrial and labour disputes
4. As per the constitution, appeals against the decision of tribunals shall be filled only in Supreme Court of India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

74. Consider the following statements about National Legal Services Authority (NLSA)

1. It implements the directive principle contained under Article 39A
2. It disburses funds to State Legal Services Authorities to implement legal aid programs.
3. It provides women to free legal aid irrespective of their income or financial status.
4. Serving or retired judge of the supreme court can be appointed as Executive Chairman of (NLSA)

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

75. Consider the following statements about Enforcement Directorate (ED)

1. It is a statutory body established under the Prevention of Money Laundering Act (PMLA).
2. It functions under Department of Financial Resources, Ministry of Finance
3. An Enforcement Directorate investigating officer can arrest an accused without prior intimation.





4. It is the only central investigative agency that does not require permission from the government to summon or prosecute politicians or government officials for inquiry into economic offences and financial crimes.

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

76. Which one of the following will be the result in a constituency where the highest number of votes polled are NOTA (None Of The Above)?

- (a) Fresh polls will be held without fielding of candidates rejected by voters.
- (b) The constituency will be merged with any of the adjacent constituencies.
- (c) Governor will nominate a candidate after consulting the Chief Electoral Officer
- (d) Candidate securing the highest number of votes will be declared elected

77. Consider the following statements about Cabinet Secretariat

- 1. It functions directly under the President of India
- 2. It is responsible for the administration of the Government of India (Allocation of Business) Rules, 1961.
- 3. It is headed by Cabinet Secretary, who is the ex-officio chairman of the Civil Services Board
- 4. It ensures that the President, the Vice President, and Ministers are kept informed of the major activities of all ministries/departments

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

78. Consider the following statements about Postal Ballot

- 1. Mediapersons on duty are authorized to cast their vote using postal ballot facility.
- 2. Any voter opting for a postal ballot facility cannot cast a vote at the polling station.

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

79. Consider the following statements about Lokpal and Lokayukta

- 1. Lokpal can suo-moto proceed against any public servant.
- 2. Jurisdiction of Lokpal include all council of minister excluding Prime Minister of India
- 3. Chairperson of Lokpal is appointed by the President based on the recommendations of a committee headed by Prime Minister
- 4. All expenses related to Lokpal are charged on the Consolidated Fund of India

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

80. Consider the following statements about Competition Commission of India (CCI)

- 1. It is a statutory body responsible for enforcing the Companies Act, 2013
- 2. Only a person who is qualified to be a judge of a High Court can be appointed as its Chairperson
- 3. One of the objective of CCI is to promote the benefit and welfare of consumers
- 4. It prohibits the Anti-competitive agreements, abuse of dominant position and combinations

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

81. Consider the following statements about Good Governance Index

- 1. It is launched by NITI Aayog
- 2. It evaluate the performance of 20 sectors

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

82. Consider the following statements about Electronic Voting Machine (EVMs)

- 1. Ballot papers and EVMs must carry the picture of the candidate with his or her name, educational qualifications, and party symbol.
- 2. EVMs were used for the first time in the general elections in 2004.
- 3. The Voter Verifiable Paper Audit Trail (VVPAT) were first time used in 2017 Goa Assembly Elections

Which of the statements given above are incorrect?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only



(d) 1, 2 and 3

83. Consider the following pairs about various portals and their purpose

Portal	Purpose
e-Nivaran	To ensure faster and easier resolution to taxrelated complaints
PRAGATI	An integrated platform through which the Prime Minister oversees the implementation of various government schemes and projects
CPGRAMS	Single portal connecting all ministries for 24x7 grievance redressal

How many pairs given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

84. Consider the following statements about Governance Knowledge Centre

1. It is a repository of practical solutions to day-to-day challenges to assist civil servants.
2. It is an initiative of NITI Aayog in collaboration with IIT Delhi.

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

85. Consider the following statements about State Public Service Commission (SPCS)

1. Appointment and Removal of chairperson and members of SPCS are done by governor of a state.
2. The recommendations made by it are only advisory in nature and not binding on the state government.
3. The Constitution authorises the governor to determine the conditions of services of members of SPCS
4. The chairman of a SPSC is not eligible for any other appointment under the Government of India or the state.

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

86. Consider the following statements about Official Languages

1. Governor is empowered to authorise the use of any language for the official purposes of a state

2. A state can adopt not more than three languages as official languages.
3. In choosing the official language, a state is not bound to choose the languages enumerated in the Eighth Schedule of the Constitution.
4. President can direct a state to use any language spoken in a state a official language to safeguard the interests of linguistic minorities

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

87. Consider the following statements about State Information Commissioner

1. It can suo-moto order inquiry into any matter.
2. The salary, allowances and other service conditions of the State Chief Information Commissioner and State Information Commissioner are determined by the Central Government.

Which of the statements given above are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

88. Consider the following statements about Finance Commission

1. It has all the powers of a civil court under the Code of Civil Procedure, 1908.
2. Recommendations made by it are not binding on the government
3. Only a retired or sitting judge of the Supreme Court can be appointed as its chairman
4. The constitution authorises the parliament to decide upon the qualification of members of the commission

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

89. Consider the following statements about National Commission for Scheduled Tribes (NCSTs)

1. Chairman of NCST was appointed by the Central government on the recommendations of a committee consisting of Prime Minister, Leader of Opposition and Chief Justice of India
2. To take measures to confer ownership rights in respect of major forest produce to STs
3. To take measure to eliminate the practise of shifting cultivation by tribals



4. Tribal Development Report was released by Ministry of Tribal Affairs annually

How many statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

90. Consider the following statements about the Joint State Public Service Commission (JSPSC)

- 1. JSPSC were provided under the Government of India Act: 1935
- 2. It is a constitutional body
- 3. JSPSC submit their annual performance report to the President
- 4. Andhra Pradesh and Telangana were the two states that had a JSPSC

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

91. Consider the following statements about the Attorney General for India (AG)

- 1. An eminent jurist can be appointed as a Attorney General for India
- 2. He held office during the pleasure of the President
- 3. Solicitor General, a constitutional body is to assist the AG in discharge of his duties
- 4. AG is debarred from any private practise when they are in office

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

92. Consider the following statements about duties of CAG

- 1. He audits the all expenditure from contingency fund of India
- 2. He is a statutory auditor of the Lokpal
- 3. He is a statutory auditor for stock accounts
- 4. Net proceeds of any tax or duty shall be ascertained and certified by the CAG

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

93. Which Constitutional Amendment Act provided for the Special Officer for Linguistic Minorities?

- (a) 7<sup>th</sup> Constitutional Amendment Act

(b) 17<sup>th</sup> Constitutional Amendment Act

(c) 27<sup>th</sup> Constitutional Amendment Act

(d) 37<sup>th</sup> Constitutional Amendment Act

94. Consider the following statements about the Whistle Blowers Protection Act: 2014

- 1. The Act clearly defines the who is considered as Whistle Blower
- 2. The act shall not be applicable to Special Protection Group
- 3. Information regarding the proceedings of the Cabinet of the Union and states are exempted from disclosure.
- 4. Appeals against the decisions of competent authority shall be placed with the High Court within 60 days from the date of orders

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

95. Consider the following statements about the process to get information under Right to Information Act: 2005

- 1. The Act clearly defined the term 'Public Authority'
- 2. The applicant below poverty line are exempted from fee for application
- 3. If information sought is concerned with life of an applicant information shall be provided within 48 hours
- 4. Appeals against the information provided can directly filed at Central Information Commissioner

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

96. Consider the following statements with respect to Official Secrets Act:

- 1. It is a colonial law that has been in effect since the British reign and declares that actions that aid an enemy state against India are punishable.
- 2. The Official Secrets Act defines 'secret material'.

Which of the above given statements are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

97. Consider the following statements:

- 1. Right to Information Act, 2005 defines Public Authority.





2. Information relating to internal security, relations with foreign countries, intellectual property rights (IPR), cabinet discussions are exempted from RTI.
3. Provides penalties in case of failure to provide information on time, incorrect, incomplete or misleading or distorted information.

How many of the following statements are correct?

- (a) 1 Only
- (b) 2 Only
- (c) 3 Only
- (d) None

98. Which of the following are modules of Sevottam model of Service delivery?

1. Citizen Charter
2. Public Grievance Redressal Mechanism
3. Services Delivery Capabilities
4. Establishment of Panchayats

Select the correct code:

- (a) 1 and 2
- (b) 1 and 3
- (c) 1,2 and 4
- (d) 1,2 and 3

99. Which of the following statements are incorrect regarding Whistleblower Protection Act, 2014?

1. The act is not applicable to the Special Protection Group (SPG) personnel and officers.
2. A whistleblower is anyone who has and reports insider knowledge of illegal, illicit, and fraudulent activities occurring in an organization.

Select the incorrect code:

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

100. Consider the following statements regarding Social Audit:

1. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was the first Act to mandate Social Audit by the Gram Sabha.
2. A social audit is a systematic, independent assessment of an organization's or program's social impact and ethical performance.

Which of the above given statements are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

### ANSWER KEY: POLITY 2024

Q.NO	KEY	Q.NO	KEY	Q.NO	KEY	Q.NO	KEY
1	C	26	C	51	C	76	D
2	B	27	B	52	C	77	C
3	B	28	C	53	B	78	C
4	B	29	D	54	A	79	B
5	C	30	C	55	B	80	A
6	D	31	A	56	D	81	D
7	C	32	D	57	A	82	D
8	C	33	A	58	A	83	C
9	D	34	C	59	C	84	A
10	C	35	A	60	B	85	B
11	D	36	C	61	C	86	B
12	B	37	D	62	A	87	C
13	C	38	B	63	D	88	C
14	A	39	D	64	C	89	A
15	B	40	C	65	B	90	A
16	C	41	C	66	B	91	B
17	C	42	C	67	B	92	C
18	A	43	C	68	C	93	A
19	C	44	C	69	C	94	C
20	C	45	B	70	D	95	C
21	C	46	B	71	B	96	A
22	D	47	D	72	B	97	C



23	B	48	A	73	B	98	D
24	B	49	A	74	D	99	D
25	C	50	C	75	B	100	C

## CSAT GRAND TEST - 1

### Directions for the following 5 (five) items:

Read the following **four** passages and answer the items that follow. Your answers to these items should be based on the passages only.

#### Passage – 01

For centuries, it was men who monopolized the culinary skills required to make harissa, a mutton delicacy in Kashmir, copied from a popular Armenian dish. Prepared overnight using the slow heat of firewood in a utensil buried in a tandoor or clay oven, the dish required muscle power, night-long patience and knowledge of spices. However, women in Kashmir are giving a tough competition to the harissa-goer or special harissa cooks this winter, with online platforms emerging as a game changer.

1. Which of the following statements is the most rational and logical corollary to the above passage?

- a) The glass ceiling can easily be broken.
- b) There is no difference between man and woman
- c) Women are natural cooks.
- d) Women can do any work which men can do if need be.

#### Passage - 02

Access to information by the poor and giving chance for them to have a voice in the public media can enhance their capabilities to strategic life choices and obtain the lifestyle they value. An attempt has been made to conclude that there does not exist a direct and casual relationship between Information and Communication Technologies and empowerment of the poor, but that in fact this relationship is being shaped by a dynamic, multi-dimensional interrelationship between technology and poverty reduction as a social context. However, government authorities should support and firmly focus on opening up private and public provisions of broadcasting and expanding access to communication tools, so that they can effectively play this intermediary role. be mad

2. Which of the following is the most crucial and logical inference that can be made from the above passage?

- a) Currently the poor do not have any access to information.
- b) Poverty reduction is impossible without the help of Information and Communication Technologies.
- c) Access to information can empower the poor and may even lead to poverty reduction.
- d) Suppression of information is one of the major causes of poverty in India

#### Passage - 03

We generally talk about democracy but when it comes to any particular thing, we prefer belonging to our caste or community or religion. As long as we have this kind of temptation, our democracy will remain a phoney kind of democracy. We must be in a position to respect a man as a man and to extend opportunities for development to those who deserve them and not to those who happen to belong to our community or race. This fact of favouritism has been responsible for much discontent and ill will in our country.

3. Which one of the following statements best sums up the above passage

- a) Our country has a lot of diversity with its many castes, communities and religions
- b) The democracy could be established by providing equal opportunities to all
- c) So far, none of us have actually understood the meaning of democracy
- d) It will never be possible for us to establish truly democratic governance in our country.

#### Passage – 04

Five months after the Supreme Court verdict that the army's short service commission women are entitled to permanent commission, no matter how long they have served, the Centre has acceded to the order. This case only covers women in ten streams like army air defence, signals, engineers, service and intelligence corps - but is still a win for equal work opportunities. This is one heartening step in the journey to gender parity in the military. So far, women make up only 3.89% of the Indian army, 6.7% in the navy and 13.2% in the air force, excluding the various medical services. The more fraught question of women in direct combat roles still remains to be addressed. While women will have to pass exacting standards to prove themselves fit for these roles, as do men, there is no place for worries about unit cohesion, or patriarchal ideas of honour and protection. The physical and mental standards for the role must be uniform and gender-neutral, and women and men free to compete for them.

Mindsets have changed, young men today are more used to seeing women as peers, and occupying leading public roles. A woman commanding them in combat would not blow their mind, as it might have older generations of army men. Women will need separate barracks and toilets, and there must be clear anti-harassment policies. The average male default in military equipment must now also accommodate other bodies.



4. Which of the following statements cannot be inferred from the passage above?

- a) Women are better manager as compared to men in their managerial roles.
- b) Women will need lucid anti-harassment policies.
- c) Women will have to pass exacting standards to prove themselves fit for these roles, as do men.
- d) All of the above

### Passage – 05

The Jazz Age was a period in the 1920s and 1930s in which jazz music and dance styles gained worldwide popularity. The Jazz Age's cultural repercussions were primarily felt in the United States, the birthplace of jazz. Originating in New Orleans as mainly sourced from the culture of African Americans, jazz played a significant part in wider cultural changes in this period, and its influence on popular culture continued long afterwards. The Jazz Age is often referred to in conjunction with the Roaring Twenties, and in the United States, it overlapped in significant cross-cultural ways with the prohibition Era. The movement was largely affected by the introduction of radios nationwide. During this time, the Jazz Age was intertwined with the developing youth culture. The movement also helped start the beginning of the European Jazz movement.

5. According to the above passage Jazz Age was largely affected by which of the following?

- a) Roaring twenties
- b) Nationwide Radio
- c) Developing Youth Culture
- d) Prohibition Era

6. Some boys are sitting in a row. P is sitting fourteenth from the left and Q is seventh from the right. If there are four boys between P and Q, how many boys are there in the row?

- a) 19
- b) 21
- c) 23
- d) 25

7. A naughty boy Amrit watches an innings of Sachin and acts according to the number of runs he sees Sachin scoring. The details of these are given below.

- 1 run Place an orange in the basket
- 2 runs Place a mango in the basket
- 3 runs Place a pear in the basket
- 4 runs Remove a pear and a mango from the basket

One fine day, at the start of the match, the basket is empty. The sequence of runs scored by Sachin in that innings are given as 11232411234232341121314. At the end of the above innings, how many more oranges were there

compared to mangoes inside the basket? (The Basket was empty initially).

- a) 4
- b) 5
- c) 6
- d) 7

8. Suppose  $n$  is a positive integer. Then  $(n^2 + n)(2n+1)$

- a) May not be divisible by 2
- b) Is always divisible by 2 but may not be divisible by 3
- c) Is always divisible by 3 but may not be divisible by 6
- d) Is always divisible by 6

9. Of the following statements, the one that is incorrect is?

- a) Doubling the base of a given rectangle doubles the area.
- b) Doubling the altitude of a triangle doubles the area.
- c) Doubling the radius of a given circle doubles the area.
- d) Doubling the diagonal of a square quadruples the area.

10. Priya was asked to state her age in years. Her reply was, "Take my age two years hence, multiply it by 2 and then subtract two times my age two years ago and you will know how old I am." What was the age of Priya (in years)?

- a) 8
- b) 10
- c) 42
- d) 33

11. P, Q, R, S and T are related to belong to the same family. P is the brother of S. Q is the wife of P; R and T are the children of the siblings P and S, respectively. Which one of the following statements is necessarily FALSE?

- a) S is the sister-in-law of Q
- b) S is the aunt of R
- c) S is the brother of P
- d) S is the aunt of T

12. What is the tens' digit of the sum of the first 50 terms of 1, 11, 111, 1111, 11111, 111111, ...?

- a) 2
- b) 4
- c) 5
- d) 8

13. If  $x\%$  of  $a$  is the same as  $y\%$  of  $b$ , then  $z\%$  of  $b$  is?

- a)  $(yz/x)\%$  of  $a$
- b)  $(xy/z)\%$  of  $a$
- c)  $(xz/y)\%$  of  $a$
- d) None of these

**Directions for the following 5 (five) items:**





Read the following **four** passages and answer the items that follow. Your answers to these items should be based on the passages only.

### Passage - 01

Human rights are the rights relating to life, liberty and equality and dignity of individuals guaranteed by the constitution or embodied in international covenants and enforceable by the courts in India. In west, they are predominantly matters of civil and political liberty. However, for the development and underdeveloped Asian, African and Latin American nations, they are also matters of survivals. Human rights are therefore about being a citizen of the earth, or being part of the earth family. Human rights are exercised to their fullness through participating in earth Democracy – the democracy of all life. And as earthlings, our human duties to protect the earth and all her beings are the ground from which human rights emerge.

14. On the basis of the passage, the following assumptions have been made:

1. Human rights are common to all irrespective of nationality or region.
2. In reality, human rights in developed countries are related to different freedoms but in underdeveloped and developing countries human rights pertain to basic survival.
3. Human rights are the prerogative of all individuals and must be protected everywhere in each country.
4. If human beings care about the mother earth, their rights will be automatically safeguarded.

Which of the above assumption(s) is/are valid?

- a) Only 3
- b) 1 and 2
- c) 1 and 3
- d) All of these

### Passage - 02

To understand the importance of metaphors used in literature by poets and writers a study was conducted. In it, half of the participants read about a crime-ridden city where the criminal element was described as a beast preying upon innocent citizens (an animal metaphor). A separate group read essentially the same description of the city, only it described the criminal element as a disease that plagued the town (a disease metaphor). Later, when asked how to solve the crime issue, those who read the animal metaphor suggested control strategies (increasing police presence, imposing stricter penalties). Those who read the disease metaphor instead suggested diagnostic or treatment strategies (seeking out the primary cause of the crime wave, bolstering the economy).

15. Which of the following best reflects the crux of the given passage?

- a) Metaphors are essentially meant to persuade readers
- b) The way a metaphor is understood varies widely among readers
- c) Metaphor is both a literary and psychological technique
- d) Reading is not just hobby for many, it is a process to become more aware

### Passage – 03

The nation's growing wealth has yet to find a panacea of India's overburdened public healthcare system. India's spending on public health is very low in comparison to spending in developed countries just 4.2% of total national Gross Domestic Product (GDP). The World Health Organization (WHO) global healthcare profile ranked India's healthcare system 112<sup>th</sup> out of 190 countries. In most of India's poorer rural areas, quality medical facilities are scarce or non-existent. The challenge is that healthcare facilities in public sector are at saturation point giving place to private medical care, which takes away 80% of India's healthcare dollars.

16. Which is the critical inference that can be drawn from the above passage?

- a) India must increase spending on public healthcare to improve and save the lives of people
- b) India's ever-growing population has overburdened India's public healthcare system
- c) India should not compete with developed countries as far as spending on public healthcare system is concerned
- d) Public healthcare system in India is in pathetic condition and immediate steps should be taken to boost this sector, so that health of millions of rural and the urban poor people can be saved

### Passage – 04

In a year of severe disruption for schools caused by the COVID-19 pandemic, students in rural areas have received only marginal assistance in the form of structured learning materials from teachers, and have had to rely more on parents and siblings to study at home. This unsettling finding by the Annual Status of Education Report 2020 should prompt the Centre and the State governments to plan remedial measures for the future, when it will be safe again for students to return to the classroom. In the interim, they must work with schools to make remote learning possible.

The ASER 2020 survey covering 26 States and four Union Territories has come up with striking findings, including one of a shift in enrolments from private schools to government institutions, of about five percentage points over 2018, ranging from class one to higher secondary levels. Also, with the suspension of physical classes since the



lockdown in March, there is a marked rise in students not being enrolled, either because they dropped out, or because it was not possible to get admitted. It must also concern governments that the digital divide stands out starkly once again: the survey found 43.6% of students in government schools without access to a smartphone, while 67.3% of those who received learning materials in these institutions got them over WhatsApp, underscoring the role played by gadgets and connectivity. On the other hand, only half the children got help with studies at home, a third got materials from teachers, and nearly 60% used textbooks.

The ASER survey provides data that could facilitate intervention by the education system in some respects, even if, going forward, schools opt for a hybrid solution of partial reopening and online learning. Expanding availability of textbooks to all, including those who dropped out or are waiting to be formally admitted, will help parents and siblings aid learning. Bridging the divide on educational aids, now including smartphones, will enable transmission of learning materials, and personal tutorial sessions. Beyond these basics, however, the education system could creatively use opportunities during the current year to broaden learning. Students could use the safety of the open countryside to learn, under guidance from teachers, a host of topics by doing things themselves. This is particularly feasible for lower classes, where observational learning creates a strong foundation.

Educational video, which has helped thousands, can advance learning even beyond the pandemic, using talented teacher-communicators. States such as Tamil Nadu and Kerala have already hosted curriculum-based video lessons on the Internet, after beaming them on television. It will take out-of-the-box thinking during the pandemic to come up with interventions that are a substitute for traditional methods and prevent 2020 becoming a zero year, as parents everywhere remain wary of sending children to school.

17. Given below are some of the observations of the covid – 19 pandemics mentioned by the author. Select the options that contain the correct answer

- during the pandemic, rural areas have received only marginal assistance in the form structured learning materials from teachers.
- Parents are still wary in sending their children to schools.
- Lot of students have started taking more admissions in private schools during the pandemic.
- Around 67.3% of students of government schools have access to smartphones.

Select the correct code

- (1) and (2)
- (1), (2), (3) and (4)
- (1) and (3)
- (1), (2) and (3)

18. Which of the following is the main idea behind the passage?

- In order to prevent the year 2020 from becoming a zero year, we need to stress and implement some novel ideas in the terms of teaching and learning both
- Only the traditional teaching and learning methods can still revive the education during this pandemic.
- Parents are still wary sending their children to schools as they do not wish to pay the fees anymore during the pandemic.
- None of the above

19. If A is coded as 2, B as 3, C as 5 and so on i.e. every letter with prime number, which of the following is the numerical value of the word 'GHEE' if the numerical value of 'CABLE' is 58?

- 61
- 50
- 58
- 77

20. A boy and a girl are talking.

"I am a boy" – said the first child.

"I am a girl" – said the second child.

At least one of them is lying. Then who is lying?

- First child
- Second child
- Both
- None

21.  $\frac{3}{7}$ <sup>th</sup> of the number of students who passed the Geology exam is the same as  $\frac{6}{7}$ <sup>th</sup> of the number of students who passed the Physics exam. Which of the following is necessarily true?

- The same number of students passed the Geology and Physics exams.
- Total number of students who passed the Geology exam was twice that of the students who passed the Physics exam.
- Total number of students who passed the Geology exam was half that of the students who passed the Physics exam.
- The ratio of the number of Geology to the number of Physics students was 7 : 3.

22. In English alphabets, all the letters are written in capitals, few letters are called symmetric i.e. appears same when looked at in a mirror. For example, letters like H, Z...etc. other letters in the alphabet are asymmetric letters.

Consider the following statements.

- Number of four – letter computer passwords can be formed using only the symmetric letters (no repetition allowed) = 3960



2. Number of three – letter computer passwords can be formed (no repetition allowed) with the asymmetric letters only = 2730

Which of the following above statements are/is incorrect?

- a) Only I
- b) Only II
- c) Both I & II
- d) Neither I nor II

23. The ratio of salary of a worker in July to that in June was  $2(1/2) : 2(1/4)$ . But what % was the salary of July more than salary of June?

- a) 10%
- b)  $11(1/9)\%$
- c)  $7(4/9)\%$
- d)  $6(2/5)\%$

24. Four milkmen rented a pasture. 'A' grazed 24 cows for 3 months. 'B' grazed 10 cows for 5 months. 'C' grazed 35 cows for 4 months and 'D' grazed 21 cows for 3 months. If A's share of rent is Rs. 720. Find the total rent of the field?

- a) 3250
- b) 2670
- c) 4500
- d) 2750

25. Two cars 'P' and 'Q' start at the same time from 'A' and 'B' which are 120 km apart. If the two cars travel in opposite directions, they meet after 1 h and if they travel in the same direction, then P meets Q after 6 h. What is the speed of the car P?

- a) 60 km/h
- b) 70 km/h
- c) 100 km/h
- d) 120 km/h

26. Amongst five students A, B, C, D and E who got the maximum marks?

- 1. D got more than A and C.
- 2. B got less than E but more than D

Select the correct code

- a) If the statement I alone is sufficient to provide the answer
- b) If the statement II alone is sufficient to provide the answer
- c) If both the statements are required to provide the answer
- d) If neither statement I nor II is sufficient to provide the answer

**Directions for the following 5 (five) items:**

Read the following **four** passages and answer the items that follow. Your answers to these items should be based on the passages only.

**Passage – 01**

Entrepreneurship is an innovative and dynamic process whereby a new enterprise is created. Entrepreneur is a catalytic agent of change, which generates employment opportunities for others. Entrepreneurship among women is a recent phenomenon. When an enterprise is established and controlled by a women, it not only boosts economic growth, but also has many desirable outcomes. It is estimated that presently, women entrepreneurs comprise about 10% of total entrepreneurs in India and this percentage is growing every year. Growth of women entrepreneurs can be a vehicle of their socio-economic empowerment. They can play a powerful role in confidence building and creating in other women a feeling of self-reliance.

27. With reference to the above passage, consider the following statements.

- 1. Women entrepreneurs in India can be the best vehicle of socio-economic empowerment making women self-reliant.
- 2. A drastic change can be brought in the status of women by encouraging them to be an entrepreneur.
- 3. In India, nothing much has been done to provide opportunities to women entrepreneurs to showcase their talents.

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

- a) Only 1
- b) 2 and 3
- c) 1 and 2
- d) All of the above

**Passage -02**

A famous proverb 'cleanliness is next to godliness' was envisioned by Mahatma Gandhi who believed that sanitation was more important than independence. It is sad that even after 73 years of independence, cleanliness goal could not be achieved. Therefore, 'A SWACHH BHARAT ABHIYAN', a national campaign has been started by the government of India. The main objectives of this campaign are removing trend of open defecation, changing insanitary toilets into pour flush toilets, removal of manual scavenging, proper disposal of solid and liquid wastes, enhance health and education awareness. Involvement of gram panchayat, panchayat samite and zila perished have been sought to improve quality of life of people living in rural areas.

28. Which one of the following is the most valid assumption with reference to the above passage?

- a) India is a vast country and it is not easy to solve the sanitation problem of the millions in few years





- b) Coordination among various organizations and more awareness has been sought to make India – a clean India
- c) Due to extraordinary growth of population and lack of proper facilities, India could not be made a clean nation even after 73 years of independence
- d) Sanitation and cleanliness is increasingly a collective responsibility

### Passage -03

There is no denying that India will have to live with the problem of unemployment for many years to come. The immediate crisis cannot be solved by any measures taken either to curb population growth or to reorient the educational system.

29. The author implies that
- a) even in developed countries, the problem of unemployment exists.
  - b) unemployment is a problem that India has been facing for a number of years.
  - c) India cannot solve the problem of unemployment.
  - d) unchecked population growth and an education system that is not oriented towards employment generation are the two major reasons for the very high level of unemployment in India.

### Passage - 04

The mythological history of India does not provide many clues to the direct rebellions of the oppressed masses against their oppression. However, it is inconceivable that they did not take place at all over a long period of millennia that nibbled at their existence every moment with a 'divine' contrivance called caste. The extraordinary success of this contrivance of social satisfaction is as much attributable to its own design that effectively obviated coalescence of the oppressed castes and facilitated establishment and maintenance of ideological hegemony as to its purported divine origination. None could ordinarily raise a question as it meant incurring divine wrath and consequent ruination of the prospects of getting a better birth in their next life.

Thus, the caste system held society in a metaphysical engagement and at the same time in physical alienation with itself. Materially, it provided for the security of every one through caste profession and psychologically an aspirational space for every caste including the non-caste untouchables to feel superior to some other. Right from the early revolts like Buddhism and Jainism down to the Bhakti movement in the medieval age, one finds articulation of opposition to the caste system materialising in a religion-ideological idiom. This trend in fact extends well down to modern time that marks a new awakening of the oppressed castes and the birth of the contemporary Dalit movement.

All anti-caste movement thus, from the beginning to the present, invariably got engaged in religious confrontation with Brahmanism, either by its denouncement or adoption of some other religion. They argue that even in the past inter-caste mingling of people took place. However, the fact remains that their argument is not corroborated by sufficient evidence at least till the advent of British Rule.

30. Which statement correctly depicts the stand of the author of the passage?

- a) The contention about flexible caste system is proved beyond doubt
- b) Rigidity of caste system remained the same till the advent of British Rule
- c) Inter caste movements were possible in earlier times
- d) Caste system of earlier times was not rigid

31. Identify the statement, which is/are correct?

- 1. All caste movements whether pre-modern or modern attack on Brahmanism.
- 2. Medieval age also witnessed anti-caste movements.

Select the correct answer using the code given the below

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

32. Five courses—A, B, C, D and E, each of one month duration are to be taught from January to May, one after the other, though not necessarily in the same order by lecturers P, Q, R, S and T. P teaches course 'B' but not in the month of April or May. Q teaches course 'A' in the month of March. R teaches in the month of January but does not teach course 'C' or 'D'.

Consider the following statements

- 1. S teaches either C or D course
- 2. lecturer's Q course immediately follows course B
- 3. E was taught in the month of January

Which of above statements are/is correct?

- a) Only 1 & 2
- b) Only 2 & 3
- c) All the above
- d) None of the above

33. Consider the following statements.

- 1. There are two instances where the cube of the number (integer) is equal to the number itself
- 2. If p and q are any two odd primes then  $(p^2 - q^2)$  is composite.
- 3. For any natural number x,  $x^5$  has the same unit digit as x has.

Which of the following above statements are/is correct?



- a) 1 & 2 only
- b) 2 & 3 only
- c) All the above
- d) 1 & 3 only

34. In a party, there were  $x$  men and  $y$  women. One hour later,  $y$  men had left the party and  $x$  women had joined the party making the total number of men and women 60. How many women were initially there?

- a) 10
- b) 20
- c) 25
- d) Can't say

35. The sum of all the natural numbers between 1 and 101 which are divisible by 5 is?

- a) 1000
- b) 1050
- c) 1500
- d) 2550

36. A worker noticed that the hour-hand on the factory clock had moved 225 degrees during her stay at the factory. For how long does she stay in the factory?

- a) 8.5 hours
- b) 7.5 hours
- c) 3.75 hours
- d) 4 hours and 15 minutes

37. Two numbers,  $x$  and  $y$  are such that when divided by 6, they leave remainder 4 and 5 respectively. Find the remainder when  $x^3 + y^3$  is divided by 6?

- a) 2
- b) 3
- c) 4
- d) 5

38. A ball rolling up an incline covers 36 metres during the first second, 32 metres during the second, 28 metres during the next and so on. How much distance will it travel during the 8<sup>th</sup> second?

- a) 8 metres
- b) 6 metres
- c) 7 metres
- d) 9 metres

**Directions for the following 5 (five) items:**

Read the following **four** passages and answer the items that follow. Your answers to these items should be based on the passages only

**Passage – 01**

Without doubt, the confusion and the controversy in the power sector is a dark reminder of the government's patchy approach to privatisation. Perhaps the only area

where the government has come shining through is in the successful removal of the barriers to the entry of corporates into the sector.

39. Which of the following can be inferred from the passage?

- a) There are likely to be more power cuts in summer in the years to come.
- b) The corporate sector is not interested in entering the power sector unless certain guarantees are given by the government.
- c) The power policy is an example of the government's failure to carry the liberalisation process to its logical conclusion.
- d) It is now possible for the Essar group of companies to set up a power plant in A.P.

**Passage – 02**

Desertification' is a term used to explain a process of decline in the biological productivity of an ecosystem, leading to total loss of productivity. While this phenomenon is often linked to the arid, semi-arid and sub-humid ecosystems, even in the humid tropics, the impact could be most dramatic. Impoverishment of human-impacted terrestrial ecosystems may exhibit itself in a variety of ways, such as accelerated erosion as in the mountain regions of the country, salinisation of land as in the semi-arid and arid 'green revolution' areas of the country, for example, in Haryana and Western Uttar Pradesh, and site quality decline- a common phenomenon due to general decline in tree cover and monotonous monoculture of rice/wheat across the Indian plains.

A major consequence of deforestation is that it relates to adverse alterations in the hydrology and related soil and nutrient losses. The consequences of deforestation invariably arise out of side degradation through erosive losses. Tropical Asia, Africa and South America have the highest levels of erosion.

The already high rates for the tropics are increasing at an alarming rate (For example, through the major river systems, such as the Ganga and the Brahmaputra in the Indian context), due to deforestation and ill-suited and management practices subsequent to forest clearing. In the mountain context, the declining moisture retention of the mountain context, the declining moisture retention of the mountain soils, drying up of the underground springs and smaller rivers in the Himalayan region could be attributed to drastic changes in the forest cover.

An indirect consequence is drastic alteration in the upland-lowland interaction, mediated through water. The current concern the tea planter of Assam has is about the damage to tea plantations due to frequent inundation along the flood-plains of Brahmaputra, and the damage to tea plantation and the consequent loss in tea productivity is due



to rising level of the river bottom because of siltation and the changing course of the river system.

The ultimate consequences of site desertification are soil degradation, alteration in available water and its quality, and the consequent decline in food, fodder and fuel-wood yields essential for the economic well-being of rural communities.

40. Which of the following is/are the correct inference/inferences that can be made from the passage?

1. Deforestation can cause changes in the course of rivers.
2. Salinisation of land takes place due to human activities only.
3. Intense monoculture practice in plains is a major reason for desertification in Tropical Asia, Africa and South America.

Select the correct answer using the code given below.

- a) Only 1
- b) Both 1 and 2
- c) Both 2 and 3
- d) None of the above is a correct inference

41. With reference to 'desertification' as described in the passage, the following assumptions have been made:

1. Desertification is a phenomenon in tropical areas only.
2. Deforestation invariably leads to floods and desertification.

Which of the above assumptions is/are valid?

- a) Only 1
- b) Both 1 and 2
- c) Only 2
- d) Neither 1 nor 2

### Passage – 03

I would say that if the village perishes India will perish too. India will be no more India. Her own mission in the world will get lost. The revival of the village is possible only when it is no more exploited. Industrialization on a mass scale will necessarily lead to passive or active exploitation of the villagers as the problems of competition and marketing come in. Therefore, we have to concentrate on the village being self-contained, manufacturing mainly for use.

42. The author of the passage holds the view that,

- a) Exploitation and industrialization are inseparable.
- b) Industries cannot survive without competition and marketing.
- c) Setting up of industries in villages should be prohibited.
- d) Mass industrialization of villages is undesirable.

### Passage – 04

**Sage:** Consider what you are doing! When you say, "I want to exist", it is not you alone that says this, but everything, absolutely everything, that has only a vestige of consciousness. Consequently, this desire of yours is just that which is not individual but which is common to all without distinction. It does not proceed from individuality, but from existence in general; it is the essential in everything that exists, nay, it is that whereby anything has existence at all; accordingly, it is concerned and satisfied only with existence in general and not with any definite individual existence; this is not its aim. It has the appearance of being so because it can attain consciousness only in an individual existence, and consequently looks as if it were entirely concerned with that. This is nothing but an illusion which has entangled the individual; but by reflection, it can be dissipated and we ourselves set free.

It is only indirectly that the individual has this great longing for existence; it is the will to live in general that has this longing directly and really, a longing that is one and the same in everything. Since, then, existence itself is the free work of the will, nay, the mere reflection of it, existence cannot be apart from will, and the latter will be provisionally satisfied with existence in general, in so far, namely, as that which is eternally dissatisfied can be satisfied. The will is indifferent to individuality; it has nothing to do with it, although it appears to, because the individual is only directly conscious of will in himself. From this it is to be gathered that the individual carefully guards his own existence; moreover, if this were not so, the preservation of the species would not be assured. From all this it follows that individuality is not a state of perfection but of limitation; so that to be freed from it is not loss but rather gain. Don't let this trouble you any further, it will, forsooth, appear to you both childish and extremely ridiculous when you completely and thoroughly recognise what you are, namely, that your own existence is the universal will to live.

43. Which of the following can be inferred from what the sage says?

- A. The understanding of existence in general is a feature of enlightenment.
- B. The desire for individuality is born out of immaturity
- C. Abnegation of one's individuality is the hallmark of enlightenment.
- D. The recognition of individuality is valueless.

Select the correct answer

- a) A, B and C
- b) A, B and D
- c) A, C and D
- d) B, C and D

44. It can be understood from what the sage says that, in his view,



- A. in recognising existence in general, one could realise one's individuality.
- B. the desire for individuality is the very feature that confirms the fact of existence.
- C. it is the collective recognition of individuality that amounts to the realisation of existence in general.
- D. the desire for individuality is common to all that is capable of thought.

Select the correct answer

- a) A, B and C
- b) A, B and D
- c) B, C and D
- d) A, B, C and D

45. In a chess game competition, P boys and Q girls ( $P > Q > 1$ ) of a school participate in which every student has to play exactly one game with every other student. Out of the total games played, it was found that in 99 games one player was a boy and the other player was a girl.

Consider the following statements.

1. The total number of students that participated in the competition is = 20
2. The number of games in which both players were girls is = 36

Which of the following above statements are/is correct?

- a) Only 1
- b) Only 2
- c) Both 1 & 2
- d) Neither 1 nor 2

46. In an examination paper there are two groups, each containing 4 questions. A candidate is required to attempt 5 questions but not more than 3 questions from any group. In how many ways can 5 questions be selected?

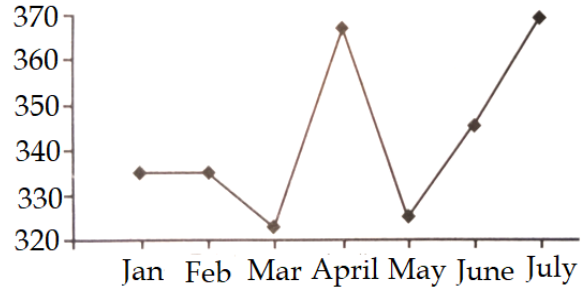
- a) 24
- b) 48
- c) 96
- d) None

47. A square field ABCD of side 90 m is so located that its diagonal AC is from north to south and the corner B is to the west of D. Muong and Thames start walking along the sides from B and C respectively in the clockwise and anticlockwise direction with speeds of 8 m/s and 10 m/s. Where shall they cross each other the second time?

- a) On AD at a distance of 30 m from A
- b) On BC at a distance of 10 m from B
- c) On AD at a distance of 30 m from D
- d) On BC at a distance of 10 m from C

Refer to the graph (Fig.) and answer the questions given below that.

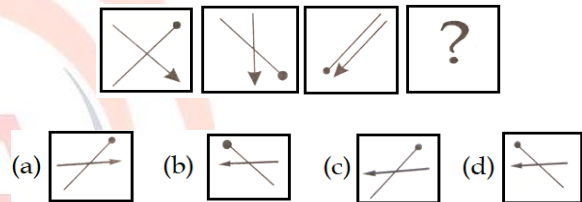
**(Consumer price index in 2023-2022)**



48. Which month showed the highest absolute difference in the Consumer price index (CPI) over the previous month?

- a) March
- b) April
- c) May
- d) July

49. Figures given below are changing according to certain rule from left to right. Identify the missing figure of the series.



50. P, Q, R and S are working on a project. Q can finish the task in 25 days, working alone for 12 hours a day. R can finish the task in 50 days, working alone for 12 hours per day. Q working 12 hours a day but took sick leave in the beginning for two days, R worked 18 hours a day on all days. What is the ratio of work done by Q and R after 7 days from the start of the project?

- a) 10 : 11
- b) 11 : 10
- c) 20 : 21
- d) 21 : 20

51. Given  $(9 \text{ inches})^{1/2} = (0.25 \text{ yards})^{1/2}$ , which one of the following statements is **TRUE**?

- a) 3 inches = 0.5 yards
- b) 9 inches = 1.5 yards
- c) 9 inches = 0.25 yards
- d) 81 inches = 0.0625 yards

52. a, b, c are positive integers. The arithmetic mean of a, b, c is 17. If a is two less than c, then which of the following is necessarily true?

- a) a is odd
- b) a is even
- c) c is odd
- d) b is odd



53. Statement:

India economy is depending mainly on forests.

Conclusions:

- I. Trees should be preserved to improve Indian economy.
- II. India wants only maintenance of forests to improve economic conditions.

Select the correct answer

- a) If only conclusion I follows
- b) If only conclusion II follows
- c) If both I and II follows
- d) If neither I nor II follows and

### Passage-1

Both Houses of Parliament have passed a Bill making instant triple talaq a criminal offence, amidst persistent doubts whether it ought to be treated as a crime or just a civil case. It is true that the Muslim Women (Protection of Rights on Marriage) Bill, 2019, is a diluted version of the Bill as it was originally conceived. Earlier, it did not specify who could set the law in motion. Now the offence is cognisable only if the affected wife, or one related to her by blood or marriage, files a police complaint. A man arrested under this law may get bail, after the Magistrate grants a hearing to the wife. Thirdly, the offence is compoundable, that is, the parties may arrive at a compromise. The government says its main objective is to give effect to the Supreme Court's 2017 verdict declaring instant triple talaq illegal. It claims that despite the court ruling, several instances have been reported. Making it an offence, the government says, will deter further resort to triple talaq, and provide redress for women in the form of a subsistence allowance and custody of children, besides getting the erring husband arrested. However, the core question regarding the necessity to criminalise the practice of talaq-e-biddat has not been convincingly answered.

In the light of the Supreme Court ruling on its validity, there is really no need to declare instant triple talaq a criminal offence. The practice has no approval in Islamic tenets, and is indeed considered abhorrent. Secondly, once it has been declared illegal, pronouncing talaq obviously does not have the effect of "instantaneous and irrevocable divorce" as this Bill claims in its definition of 'talaq'. The provisions that allow a woman to claim a subsistence allowance from the man and seek custody of her children can be implemented in the event of the husband abandoning her, even without the man's arrest. If triple talaq, in any form, is void, how the questions of children's custody and subsistence allowance arise while the marriage subsists, is not clear. And then, there is the practical question of how a man can provide a subsistence allowance while he is imprisoned. It has been argued by the Bill's proponents that dowry harassment and cruelty towards wives are treated as criminal offences even while the marriage subsists. It is a

patently wrong comparison, as those acts involve violence and cruelty and are rightly treated as criminal offences. The same cannot be said of a man invoking a prohibited form of divorce. The BJP projects the passage of the Bill as a historic milestone in the quest for gender justice. Such a claim will be valid only if there is a non-sectarian law that addresses abandonment and desertion of spouses as a common problem instead of focusing on a practice, which is no more legally valid, among Muslims.

54. One woman Salma, is wife of Salim. Salim pronounced instant Triple Talaq on Salma. One NGO, Nari Shakti organisation filed a police complaint against Salim and demanded his instant arrest since the offence is cognizable offence i.e., arrest can be made without a judicial warrant. Can police arrest Salim instantly?

- a) Yes, Salim can be arrested immediately No, Salim cannot be arrested
- b) No salim cant be arrested
- c) He can be arrested after obtaining a judicial warrant
- d) None of the above and sa

55. What do you understand 'Compoundable Offences'? by the term

- a) Offences which can be compromised by the courts
- b) Offences which cannot be compromised
- c) Offences which can be compromised by the parties themselves
- d) Offences which are cognizable offences

### Passage - 4

Evading a direct reply on the possible inclusion of Ladakh under the Sixth Schedule of the Constitution, the Union Home Ministry has informed a Parliamentary panel that the main objective of the inclusion of tribal populations under the said schedule I to ensure their overall socio-economic development, which the Union Territory's administration "has already been taking care of since its creation".

56. Based on the above passage that following assumptions have been made:

1. Since Governments take care of the socio-economic development, Sixth Schedule of the Constitution is redundant now.
2. Since Ladakh is a Union Territory governed by the Union Govt. inclusion of Ladakh under the Sixth Schedule is irrelevant.

Which of the above assumption(s) is/are valid?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

57. Arrange the following in ascending order:

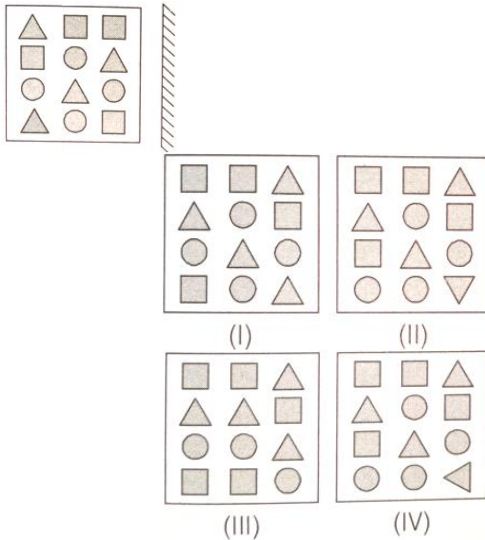
$$P = 91^4;$$

$$Q = 90 \times 89 \times 88 \times 87;$$

$$R = 89 \times 90 \times 92 \times 93;$$

- a)  $R < Q < P$
- b)  $Q < P < R$
- c)  $R < P < Q$
- d)  $Q < R < P$

58. Find the appropriate mirror image of the figure.



- a) I
- b) II
- c) III
- d) None

59. A container originally contains 10 litres of pure spirit. From this container 1 litre of spirit is replaced with 1 litre of water. Subsequently, 1 litre of the mixture is again replaced with 1 litre of water and this process is repeated one more time. How much spirit is now left in the container?

- a) 7.58 litres
- b) 7.84 litres
- c) 7 litres
- d) 7.29 litres

60. Out of all the 2-digit integers between 1 and 100, a 2-digit number has to be selected at random. What is the probability that the selected number is not divisible by 7?

- a) 13/90
- b) 12/90
- c) 78/90
- d) 77/90

61. Circular tyres X and Y start rotating simultaneously at uniform speeds. Tyre X makes 12 revolutions each minute and tyre Y makes 48 revolutions each minutes. How long will it take from the time that the tyres start rotating for tyre Y to make 9 revolutions more than tyre X?

- a) 18 seconds
- b) 15 seconds
- c) 12 seconds
- d) 10 seconds

62. The length and the breadth of a cuboid are increased by one-eighth and one-third respectively. What should be the percentage increase in the height such that the volume which was 150 cu.cm. earlier, becomes 300 cu.cm.?

- a) 50%
- b) 25%
- c)  $16\frac{2}{3}\%$
- d)  $33\frac{1}{3}\%$

63. Statements

I: Regular polygon has equal sides and equal angles.

II: Square is a regular polygon

Conclusions

I: Square has equal sides.

II: Square has equal angles

- a) Conclusions I follows.
- b) Conclusions II follows.
- c) Neither I nor II follows.
- d) Conclusions I & II follows

64. Read both the statements given below and answer the question.

Statements:

1. Harish missed his usual train of 4.15 p.m. A train comes in every 15 minutes.
2. Harish did not catch the 4.45 p.m. train or any train after that time.

Question: Which train did Harish catch to go to office?

- a) If statement 2 alone is sufficient but statement 1 alone is not sufficient.
- b) If statement 1 alone is sufficient but statement 2 alone is not sufficient.
- c) If both statements together are sufficient, but neither statement alone is sufficient.
- d) If statement 1 and 2 together are not sufficient

65. In a particular year, first and last day of the year are different days, in that particular year which month will have same calendar as that of January in that year?

- a) March
- b) April
- c) August
- d) July

### Passage – 01

Democracy in India would appear differently to different classes of India. To more privileged class of society, it would mean the freedom of enterprise and to the lower orders, it would mean the freedom of enterprise and to the





lower orders, it would mean equality (at least between communities) and representation. Despite many odds, India has sustained a fairly stable democracy, while the countries with less serious problems have abandoned democracy for authoritarian form of rule. Indian state has a deep commitment to democratic system and values, as democracy provides impulse towards change and looks at contemporary struggles and movements of the people as a part of the democratic process.

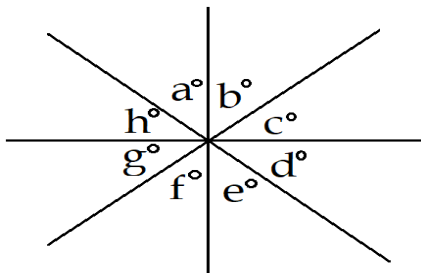
66. Which one of the following statements best sums up the above passage?

- a) India is facing many challenges to maintain its democratic structure
- b) Many countries have given up democracy and had adopted authoritarian form of rule
- c) In spite of all odds, India has survived as a democratic country as it is open to change towards betterment and takes people's movements in its stride
- d) India can hardly be called a democratic country where individual rights are not taken care of at all with a great divide between the rich and the poor

67. Two friends A & B were discussing their marks in an examination. While doing so they realized that both the numbers had the same prime factors, although A got a score which had two more factors than B. If their marks are represented by one of the options as given below, which of the following options would correctly represent the number of marks they got?

- a) 30 & 60
- b) 20 & 80
- c) 40 & 80
- d) 20 & 60

68. In the figure below, which of the following MUST equal 180°?



- I.  $a + b + e + h$
- II.  $b + e + g + h$
- III.  $a + b + d + g$

- a) I only
- b) II only
- c) I & III only
- d) II & III only

69. Statements:

- 1. All parrots are pigeons.
- 2. No pigeons are tables.

Conclusions:

- I. All pigeons are tables.
- II. No parrot is a tables.

Select the correct answer

- a) Only conclusion I follows.
- b) Either conclusion I or II follows.
- c) Both conclusions I and II follow.
- d) Only conclusion II follows.

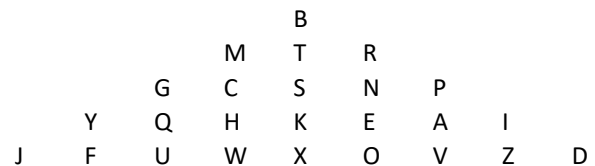
70. What is the next number in the series?

50/500, 40/1200, 30/1500, 20/1400, \_\_\_\_\_

- a) 10/800
- b) 10/1000
- c) 10/900
- d) 10/9000

Directions (Q. 72 – 73): Read the following information carefully and answer the question below it.

Study the pyramid of the letters given below and answer the questions.



71. Which letter is missing in the pyramid?

- a) F
- b) I
- c) L
- d) P

72. If all the horizontal lines were to be studied separately which neighbours in the alphabetical order are the farthest?

- a) F and U
- b) Q and Y
- c) C and S
- d) H and Q

73. In a school, 90% of the students faced problems in Mathematics, 80% of the students' faced problems in Computers, 75% of the students' faced problems in sciences, and 70% of the students' faced problems in Social Sciences. Find the minimum percent of the students who faced problems in all four subjects.

- a) 10%
- b) 15%
- c) 18%
- d) 17



74. A rope was cut into three parts such that the longest part was three times as long as the shortest part and 10 meters longer than the middle part. If the middle part was  $\frac{5}{2}$  as long as times the shortest part, then what was the initial length of the rope (in metres)?

- a) 114
- b) 120
- c) 130
- d) 140

### Passage – 01

Climate change is beginning to awaken people to fact that our species has permanently damaged the planet. In discussions with indigenous elders in Africa and the Amazon, their first question is what is the source of the crisis now confronting us? The essential truth, which the climate discourse tends to avoid is the interconnectedness of the symptoms; the sixth mass extinction of species; global warming; depletion of minerals and fossil fuels; escalating social inequity, toxic pollutants in the Earth's soils, seas and atmosphere and the globalization of the western industrial model of 'development' penetrating into the farthest reaches of the planetary ecosystem.

It is this industrial paradigm, which has generated the symptoms of climate change. It has cultivated a belief that the Earth's abundant complex living biosphere is nothing more than resources to be exploited.

The industrial paradigm which has been so well-articulated over the last 200 years, that the education, health, media, government and corporate sectors each reinforce the belief that progress is about more money and things; that consumption bring well-being, that endless economic growth will trickle down to the burgeoning 'poor', despite all evidence to the contrary and that human nature is inevitably greedy and selfish a necessary belief to drive industrial growth.

75. According to the passage which of the following is/are a matter of intense concern for all of us.

- 1. Climate change is a reminder to all developed and developing or underdeveloped countries that we human beings have damaged the planet Earth.
- 2. Industrial revolution in the West has been largely responsible for climate change.
- 3. Earth's biosphere consists of resources, which are meant to be exploited.

Select the answer using the codes given below.

- a) Only 1
- b) 2 and 3
- c) Only 2
- d) All of these

76. In this passage, the author has put the responsibility of damaging the planet Earth on the developed countries of the West because

- 1. For these countries, acquiring of wealth and more assets has been more important.
- 2. These countries claim that industrial revolution will bring economic growth, which will benefit the poor class also
- 3. Western countries have been responsible for bringing prosperity all around but at a heavy cost of depletion of minerals and fossil fuels and Earth's soils, seas and atmosphere are full of toxic pollutants.

Select the correct answer using the codes given below.

- a) Only 1
- b) 1 and 2
- c) 1 and 3
- d) All of these

77. Which one of the following is essentially discussed in the passage?

- a) Occurrence of climate change due to industrial revolution perused by Western countries.
- b) Damaging the planet Earth due to selfishness and greed of people, especially people of developed countries
- c) Lack of political and social will to stop overusing or exploitation of natural resources
- d) Lack of government initiatives for sustainable growth.

78. A person walks towards his house at 8:00 am and observes his shadow to his right. In which direction he is walking?

- a) North
- b) South
- c) East
- d) West

79. The difference between the number of numbers from 1 to 100 which are not divisible by any other number except 1 and itself and the numbers which are divisible by at least one more number along with 1 and itself.

- a) 25
- b) 50
- c) 49
- d) can't be determine

80. A fruit seller sold a basket of fruits at 12.5% loss. Had he sold it for Rs. 108 more, he would have made a 10% gain. What is the loss in Rupees incurred by the fruit seller?

- a) 48
- b) 52
- c) 60
- d) 108



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## ANSWER KEY: CSAT GRAND TEST-01

Q.NO	KEY	Q.NO	KEY	Q.NO	KEY	Q.NO	KEY
1	D	21	B	41	B	61	B
2	C	22	C	42	D	62	D
3	B	23	B	43	B	63	D
4	A	24	A	44	B	64	D
5	B	25	B	45	C	65	D
6	D	26	C	46	B	66	C
7	C	27	C	47	D	67	C
8	D	28	D	48	B	68	D
9	C	29	D	49	B	69	D
10	A	30	B	50	C	70	C
11	D	31	C	51	C	71	C
12	A	32	C	52	D	72	C
13	C	33	B	53	A	73	B
14	D	34	D	54	C	74	C
15	C	35	B	55	C	75	B
16	D	36	B	56	D	76	D
17	A	37	B	57	D	77	B
18	A	38	A	58	A	78	B
19	C	39	C	59	D	79	B
20	C	40	A	60	D	80	C



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