



## 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 Sep 2023. 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

### I. RIGHTS ISSUES

#### 1. UNIFORM CIVIL CODE (UCC) IN UTTARAKHAND

##### SOURCE: THE HINDU

##### Why in news:

Uttarakhand is taking significant steps towards implementing a Uniform Civil Code (UCC), with the state receiving the final report from a committee led by retired Justice Ranjana Prakash Desai.

##### Key Aspects of Uniform Civil Code (UCC):

##### Definition and Objective:

- Aims to establish a single personal civil law applicable to all religious communities.
- Governs matters such as marriage, divorce, inheritance, and adoption.

##### Historical Context:

- The idea of a UCC has a long history in India and has been a subject of extensive debate and discussion.

##### Uttarakhand's Initiative:

- Uttarakhand appointed a committee, led by retired Justice Ranjana Prakash Desai, to draft the UCC.
- The UCC report is scheduled for presentation in the State Assembly on February 5, undergoing a detailed review before becoming law.

##### Key Recommendations of Uttarakhand UCC:

- **Gender Equality:** Focuses on achieving gender equality in various areas, including property rights and adoption rules.
- **Language Choice:** The draft is around 750 pages long, entirely written in Hindi, emphasizing a regional language without Urdu or other languages.
- **Protection of Tribal Community:** Recommends exclusion of the tribal community from the UCC, addressing their specific needs separately.

##### Ensuring Equal Rights:

- Strong recommendations against regressive practices like triple talaq, iddat, and halala.
- Proposes banning polygamy and polyandry.
- Advocates legalizing live-in relationships with mandatory registration.
- Grants women equal inheritance rights.
- Suggests setting the minimum age for women's marriage at 21 years.

#### UPSC MAINS QUESTION

Q. "Discuss the significance and implications of Uttarakhand's initiative towards implementing a Uniform Civil Code (UCC) and analyse its impact on gender equality and minority rights." (150 WORDS)

#### 2. FARMERS' 'DELHI CHALO' MARCH

##### SOURCE- THE HINDU

##### Why in news:

Around one lakh farmers associated with Samyukt Kisan Morcha-Non-Political (SKM-NP) led a rally in Delhi, seeking guaranteed Minimum Support Prices (MSPs) for their produce.

##### What is MSP?

MSP is guaranteed the amount paid to farmers when the government purchases their crops.

- **Determining Factors:** Decided based on recommendations from the Commission for Agricultural Costs and Prices (CACP), considering factors like production costs, market trends, and inter-crop price parity.
- **CACP's Role:** An attached office of the Ministry of Agriculture, the CACP recommends MSPs for 22 crops and fair prices for sugarcane.

##### Crops Covered by MSP:

- **Mandated Crops:** MSP is applicable to 22 mandated crops, including 14 kharif crops, 6 rabi crops, and 2 commercial crops.
- **Fair and Remunerative Price (FRP):** Sugarcane is considered under FRP.



## Production Cost Considerations:

- **Three Cost Types:** A2 (paid-out costs), A2+FL (includes imputed family labor), and C2 (comprehensive cost with rentals and interest).
- **CACP's Approach:** Recommends MSP considering both A2+FL and C2 costs but uses only A2+FL for return calculations.

## Need for MSP:

- **Economic Challenges:** Droughts, demonetization, GST, economic slowdown, and the pandemic led to farmers' distress.
- **Higher Input Prices:** Increased costs for diesel, electricity, and fertilizers added to the farmers' difficulties.
- **Fair Pricing:** MSP ensures fair prices, reducing farm distress and poverty, especially in states heavily dependent on agriculture.

## Concerns Related to MSP:

- **Limited Extent:** While MSP is announced for 23 crops, in practice, it significantly benefits only rice and wheat farmers.
- **Ineffective Implementation:** Shanta Kumar Committee's 2015 report highlighted that only 6% of MSP reaches farmers, indicating inadequate procurement mechanisms.
- **Skewed Crop Dominance:** Overemphasis on MSP for rice and wheat leads to an imbalanced cropping pattern, affecting ecological, economic, and nutritional aspects.
- **Middlemen Dependency:** Involvement of intermediaries creates inefficiencies, making it challenging for smaller farmers to benefit.
- **Burden on Government:** The government bears a substantial financial burden, diverting resources from other agricultural and rural development initiatives.

## 3. WHAT IS BEHIND LADAKH'S UNREST?

### SOURCE: THE HINDU

#### Why in news:

Ladakh, since its transition to a Union Territory (UT), has been marked by unrest and protests. Initially supportive of the UT status, locals now demand full Statehood and inclusion in the Sixth Schedule to safeguard their identity, land, and culture.

#### Causes of Unrest:

- **Article 370 Abrogation (August 2019):** Ladakh's conversion into a UT, following the dilution of Article 370, led to optimism initially but raised fears about non-local influence and industrialisation.
- **Concerns about Demography and Identity:** Locals worried about the impact on Ladakh's demography, ecology, and distinct identity due to the influx of non-locals and potential exploitation of resources.
- **Economic Disempowerment:** Unemployment and lack of political representation fueled protests, especially in Kargil, leading to a jobs crisis and dissatisfaction.

#### Key Players and Demands:

**Leh Apex Body (LAB) and Kargil Democratic Alliance (KDA):**

#### Four-point Agenda (2021):

- Full-fledged legislature.
- Constitutional safeguards under the Sixth Schedule.
- Separate Lok Sabha seats for Leh and Kargil.
- Job reservations for locals.

#### Sonam Wangchuk's Involvement:

- Activist-engineer Wangchuk's hunger strike and 'Leh Chalo' protest intensified the movement.
- Advocates for full Statehood, citing the need for local voices to be heard.

#### Impact and Concerns:





- **Resource Exploitation:** Fear of industrial projects affecting wildlife, medicinal herbs, and nomadic lifestyles.
- **Loss of Political Representation:** Shift from four MLAs in J&K Assembly to zero representation; concerns about bureaucratic control by non-locals.
- **Economic Marginalisation:** No gazetted job openings since becoming a UT, creating economic discontent.

### **Demands and Geopolitical Significance:**

- **Extension of Territorial Control:** Demands to extend control up to Gilgit-Baltistan in PoK.
- **Reservation of Seats:** LAB and KDA demand reserved seats and a full-fledged elected legislature.
- **Constitutional Safeguards:** Seeking Sixth Schedule protection for Ladakh, similar to northeastern States.

### **Centre's Response:**

- **Scheduled Meeting (February 19, 2024):** Union Minister Nityanand Rai to meet Ladakh representatives.
- **Upcoming Elections:** The meeting's outcome will influence the protest's trajectory amid approaching elections.

### **UPSC MAINS QUESTION**

Q. "Examine the socio-political dynamics in Ladakh post its transition to a Union Territory, focusing on the demands for full Statehood and inclusion in the Sixth Schedule. (150 WORDS)

### **4. CAA RULES LIKELY TO BE NOTIFIED BEFORE LOK SABHA POLL CODE: REPORT**

### **SOURCE- HINDUSTAN TIMES**

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

The Ministry of Home Affairs (MHA) is set to notify rules for the implementation of the Citizenship (Amendment) Act (CAA) passed by Parliament in December 2019.

Despite the CAA being enacted four years ago, the delayed implementation is expected to be addressed with the forthcoming rules.

### **Key Provisions and Criteria:**

#### **Eligible Communities:**

- CAA allows non-Muslim migrants from Pakistan, Bangladesh, and Afghanistan (Hindu, Sikh, Christian, Parsi, Jain, and Buddhist) to apply for Indian citizenship through naturalization.
- Assumes religious persecution faced by these communities in the mentioned countries.

#### **Documentation Requirements:**

- Rules will specify evidence required to establish an applicant's religion and country of origin before December 31, 2014.
- Various documents like Aadhaar, school records, or government documentation declaring religion may serve as evidence.

#### **Acceptable Evidence and Time-bound Application:**

##### **Evidence for Eligibility:**

- Documents like Aadhaar, school enrollment records, or any government declaration of religion can serve as evidence for eligibility.
- Rules may impose a three-month application window to address concerns in Assam and mitigate anxieties over the legislation's impact.

##### **Time-bound Application:**

- A possible three-month time limit for applying under CAA may be introduced.

##### **Presumption of Persecution:**

##### **Migration Presumption:**

- Rules may not necessitate evidence of religious persecution, presuming migrants moved to India due to persecution or the fear of persecution in their home countries.

### **Citizenship (Amendment) Act (CAA) 2019:**

#### **Objective:**



- Amends the definition of illegal immigrant for non-Muslims from Pakistan, Afghanistan, and Bangladesh.
- Grants fast-track Indian citizenship in 5 years (11 years earlier).

### Eligibility Criteria:

- Applies to those seeking shelter in India due to religious persecution, with a cut-off date for citizenship being December 31, 2014.

### Exclusions:

- Does not apply to areas under the Constitution's sixth schedule and states with inner-line permit regimes.

### OCI Registration Cancellation:

- Provides for the cancellation of Overseas Citizen of India (OCI) registration for violations of the Citizenship Act or any other applicable law.

## II. LEGISLATURE

### 5. HATE SPEECH, MANIPUR ISSUE RAISED DURING ZERO HOUR

#### SOURCE- THE HINDU

#### Why in news:

Congress chief whip Kodikunnil Suresh demanded a "White Paper" on ethnic violence, stricter laws against hate speech in Manipur highlighting threats faced by Christian missionaries and priests.

#### About Hate Speech:

- Hate speech involves words intended to generate hatred towards a specific group based on factors like community, religion, or race, potentially leading to violence.

#### Root Causes of Hate Speech:

- Individuals propagate hate speech due to ingrained stereotypes, perceiving certain groups as inferior.
- Stubborn adherence to a particular ideology, without promoting peaceful co-existence, contributes to hate speech.

#### Determining Hate Speech:

- The context of speech plays a crucial role in identifying hate speech.
- Courts consider the impact of words from the perspective of reasonable, strong-minded individuals.

#### Rise of Hate Speech on Social Media:

- Multiple platforms, especially social media, amplify hate speech, making it more prevalent and severe.
- Platforms like Facebook have been implicated in instances like the persecution of Rohingya Muslims.

#### Legal Perspective in India:

- Freedom of Speech and Expression is a fundamental right (Article 19(1)(a)), but not absolute (Article 19(2)).
- Hate speech infringes upon the right to free speech, necessitating restrictions.

#### Relevant Legal Provisions:

- Sections 153A, 153B, and 295A of the Indian Penal Code (IPC) address acts causing enmity, hatred, and outraging religious feelings.
- Sections 505(1) and 505(2) penalize content promoting ill-will between groups.
- Representation of People's Act, 1951 includes provisions preventing hate speech in elections.

#### UPSC MAINS QUESTION

Q. "Discuss the constitutional and legal framework in India pertaining to hate speech, and the measures necessary to curb its proliferation. (150 WORDS)

## III. EXECUTIVE

### 6. RAJYA SABHA PASSES BILLS TO ADD PVTGS OF ODISHA, A.P. IN ST LISTS

#### SOURCE: THE HINDU

#### Why in news:

The Rajya Sabha recently passed two significant bills, the Constitution (Scheduled Tribes) Order Amendment Bill, 2024, and the Constitution



## (Scheduled Castes and Scheduled Tribes) Order Amendment Bill, 2024.

These bills focus on adding new communities to the Scheduled Tribe (ST) list in Odisha and incorporating synonyms and phonetic variations of existing tribes in both Andhra Pradesh and Odisha.

### Key Inclusions:

- The Bills pave the way for adding several communities to the ST list of Odisha.
- **Seven Particularly Vulnerable Tribal Groups (PVTGs), a subset of STs, are included** — four in Odisha and three in Andhra Pradesh.
- Notable additions in Odisha include **Pauri Bhuyan and Paudi Bhuyan as synonyms of the Bhuyan tribe, Chuktia Bhunjia as a synonym of the Bhunjia tribe, and Bondo as a sub-tribe of the Bondo Poraja tribe.**
- In Andhra Pradesh, the PVTGs added are **Bondo Porja and Khond Porja as synonyms of the Porja tribe.**

**India's tribal population constitutes 8.6% of the total population.**

- **PVTGs represent the most vulnerable subset within tribal communities, facing challenges that require targeted developmental efforts.**
- Initially termed Primitive Tribal Groups (PTGs) in 1973 by the Dhebar Commission, the category was later renamed PVTGs in 2006 by the Government of India.
- In 1975, the government identified and declared 52 PVTGs, with an additional 23 groups added in 1993, totaling 75 PVTGs among the 705 Scheduled Tribes.
- **PVTGs share common characteristics, such as homogeneity, small population size, physical isolation, lack of a written language, simple technology, and a slower rate of change.**
- **Odisha has the highest number of PVTGs among the listed 75 groups.**

## IV. JUDICIARY

### 7. DOWNLOADING CHILD PORNOGRAPHY IS AN OFFENCE

#### SOURCE: THE HINDU

#### Why in news:

The Madras High Court's recent decision in a child pornography case has sparked controversy, asserting that downloading and privately viewing such material are not offenses.

#### Key Points:

#### Case Overview - S. Harish vs Inspector of Police:

- The Madras High Court controversially quashes judicial proceedings related to child pornography download.
- Court's ruling claims that downloading and private viewing are not offenses under Section 67B of the Information Technology (IT) Act, 2000.

#### Legal Reference - Section 67B of IT Act:

- Section 67B(b) criminalizes actions like downloading, advertising, promoting, or distributing material depicting children in obscene ways.
- The High Court's flawed interpretation focused on the accused not transmitting material, overlooking the inclusion of downloading as an offense in Section 67B(b).

#### Precedent Misinterpretation and Recent Case Law:

- The court cited an irrelevant Kerala High Court case, creating an inappropriate precedent.
- Recent case law (Aneesh vs State of Kerala, September 2023) distinguishes between adult and child pornography under Section 292 of the IPC.

#### Inherent Powers and Quashing - Section 482 of CrPC:

- Madras High Court utilized inherent powers to prevent misuse of court processes.



- Contradicting Supreme Court guidelines (State of Haryana vs Bhajan Lal, 1992) that suggest quashing only when no prima facie offense is evident.

### Inconsistency and Legislative Suggestions:

- Sections 67, 67A, and 67B of the IT Act address offenses, including child pornography.
- Suggests renaming "child pornography" to "child sexual abuse materials (CSAM)" for better reflection of the crime.
- Proposes amending the Protection of Children from Sexual Offences (POCSO) Act to align with the IT Act, making mere possession of CSAM a separate offense.

### Recommendations:

- Urges the State government to appeal the judgment to prevent detrimental precedent.
- Advocates for legislative amendments to harmonize laws, ensuring effective prosecution and child protection.

## 8. SC SAYS JAIL, NOT BAIL, IS THE RULE UNDER THE UAPA

### SOURCE: INDIAN EXPRESS

#### Why in news:

The recent denial of bail to Gurwinder Singh, an accused in an alleged Khalistan module, by the Supreme Court sheds light on the complexities of the Unlawful Activities Prevention Act (UAPA), 1967.

Singh is accused of involvement with Sikhs for Justice, a pro-Khalistan group banned by the Indian government.

#### Unlawful Activities Prevention Act (UAPA), 1967: Enactment and Purpose:

- Enacted in 1967, UAPA is India's primary counter-terror law.
- Aimed at outlawing and penalizing unlawful and terrorist activities threatening India's integrity and sovereignty.

#### Activities Covered:

- Aiding and abetting terrorists, funding terrorists, inciting anti-national sentiments, and other unlawful activities against the state fall under its purview.

#### Key Provisions:

- Grants wide-ranging powers to the Central Government to designate terrorist organizations.
- Prescribes penalties for participating in the activities of such organizations.

#### Applicability:

- Applies to offenses committed outside India, allowing charges against both Indian and foreign nationals.
- Timelines for filing a charge sheet and completing investigations are specified.

#### Special Court and Sanction to Prosecute:

- Establishes a special court for trials under UAPA.
- Prosecution requires prior sanction from the central or state government.

#### 2019 Amendment:

- Expanded the definition of terrorism to include individuals designated as terrorists.
- NIA's Director General's approval required for property seizure during NIA-led investigations.
- Added the International Convention for Suppression of Acts of Nuclear Terrorism to the list of treaties.

#### Section 43D(5) of UAPA:

##### Granting Bail under UAPA:

- This provision makes it challenging to grant bail to terror accused under UAPA.
- The court must be satisfied of a "prima facie" case against the accused.

##### Court's Role:

- Courts are directed not to analyse evidence but consider the totality of the state's case.
- The accused must convince the court if relying solely on the police's version.

##### Supreme Court's Interpretation:

- In the Zahoor Ahmed Shah Watali case (2019), the Supreme Court affirmed the

"prima facie true" test without examining evidence for granting bail.

- In Union of India v K A Najeeb (January 2021), the SC upheld bail under UAPA based on prolonged incarceration but deemed it an exception.
- The constitutional right to a speedy trial was recognized as a ground for bail.

### Recent Developments:

- In July 2023, in Vernon Gonsalves v State of Maharashtra, the SC disagreed with the Watali ruling.
- The bench emphasized the need for a basic analysis of evidence during bail examination.

## 9. JUDICIAL GIANT FALI S NARIMAN LEAVES AN UNMATCHED LEGACY

### SOURCE: HINDUSTANTIMES

#### Why in news:

Eminent jurist and Senior Advocate Fali S. Nariman, known for his remarkable legal career spanning 75 years, passed away at the age of 95. Throughout his tenure as a Senior Advocate at the Supreme Court of India, Nariman played a pivotal role in shaping the Indian legal landscape through his involvement in landmark cases.



#### Advocacy in the Second Judges Case:

##### Judicial Independence Advocacy (1981):

- In the Second Judges Case of 1981, Nariman championed judicial independence.
- Challenged the decision giving the Centre final authority in judicial appointments.
- Led to the establishment of the Supreme Court collegium system, emphasizing

consultation between the Chief Justice and the President.

#### Involvement in the Third Judges Case:

##### Procedure for Judicial Appointments (1998):

- Nariman's expertise was evident in the Third Judges Case of 1998.
- Assisted the Supreme Court in clarifying the procedure for judicial appointments.
- Mandated Chief Justice's consultation with senior judges, expanding the collegium system.

#### Opposition to the NJAC Act:

##### Defending Judicial Independence (2014):

- Opposed the National Judicial Appointment Commission (NJAC) Act, 2014.
- Argued it would undermine judicial independence by involving the executive and legislature.
- Efforts resulted in the Supreme Court striking down the NJAC Act as unconstitutional.

#### Defending Fundamental Rights:

##### Golaknath Case (1967):

- Intervened in the Golaknath Case to defend fundamental rights.
- Argued against Parliament's power to curtail these rights through constitutional amendments.
- Contributed to the Court's ruling that Parliament cannot infringe upon fundamental rights.

#### Legal Representation in High-Profile Cases:

##### Union Carbide and TMA Pai Foundation Cases:

- Advocated for victims' rights in the Union Carbide Case and minorities' rights in the TMA Pai Foundation Case.
- Demonstrated commitment to justice and constitutional principles.

#### Role in Resolving Political Crises:

##### Arunachal Political Crisis Case:

- Nariman's involvement showcased dedication to upholding constitutional norms and democratic principles.



- Arguments before the Supreme Court aided in restoring democratic governance during political turmoil.

### Legacy in Water Dispute Resolution:

#### Cauvery Water-sharing Dispute:

- Contributions in resolving the Cauvery water-sharing dispute highlighted skillful negotiation and federalism commitment.
- Efforts in securing interim orders and advocating for Karnataka's interests were praised by the Supreme Court.

### Conclusion:

Fali S. Nariman's illustrious career has left an indelible mark, emphasizing judicial independence, fundamental rights, and constitutional principles. **His legacy will inspire generations of legal professionals in upholding the rule of law and ensuring justice for all.**

## V. INSTITUTIONS

### 10. NATIONAL COMMISSION FOR SCHEDULED CASTES SUBMITS REPORT TO PRESIDENT OF INDIA

#### SOURCE: THE HINDU

#### Why in news:

The National Commission for Scheduled Castes (NCSC) plays a crucial role in safeguarding the interests of Scheduled Castes (SCs) in India.

Recently, the Ministry of Social Justice & Empowerment submitted the NCSC's Annual Report 2022-23 to the President of India.

**This report contains recommendations on various issues related to the protection of Constitutional Safeguards of SCs, as mandated by Article 338 of the Constitution of India.**

#### National Commission for Scheduled Castes (NCSCs):

The NCSC is a Constitutional Body established to provide safeguards against the exploitation of Scheduled Castes and promote their social, educational, economic, and cultural interests.

### History:

- **Initially, a Special Officer was appointed under Article 338 as the Commissioner for Scheduled Castes and Scheduled Tribes.**
- **The 65th Constitutional Amendment Act, 1990,** replaced the single-member system with a multi-member National Commission for SCs and STs.
- **The 89th Constitutional Amendment Act, 2003, led to the establishment of separate Commissions for SCs and STs.**

### Composition:

- The NCSC comprises a **Chairperson, a Vice-Chairperson, and three additional Members appointed by the President.**
- Their conditions of service and tenure of office are determined by the President.

### Functions:

- The NCSC is entrusted with several key functions, including:
- **Investigating and monitoring matters** relating to constitutional and legal safeguards for SCs.
- **Inquiring into specific complaints** concerning the deprivation of rights and safeguards of SCs.
- Advising on the **planning process of socio-economic development** for SCs and evaluating their progress.
- **Presenting annual reports** to the President on the working of constitutional safeguards for SCs.
- **Making recommendations** for effective implementation of safeguards and other measures for the welfare of SCs.

### Power of NCSC:

- The Commission has the **power to regulate its own procedure.**
- It **possesses the powers of a civil court** while investigating any matter or inquiring into any complaint.
- Central and state governments are required to consult the Commission on major policy matters affecting SCs.



## Other Constitutional Provisions for the Upliftment of SCs:

- **Article 15:** Prohibits discrimination based on caste and ensures the protection and upliftment of SCs.
- **Article 17:** Abolishes Untouchability and prohibits its practice in any form, promoting equality and dignity for all individuals.
- **Article 46:** Directs the State to promote the educational and economic interests of SCs and protect them from social injustice and exploitation.
- **Article 243D (4) and Article 243T (4):** Mandate reservation of seats for SCs in Panchayats and Municipalities, respectively, in proportion to their population.
- **Article 330 and Article 332:** Provide for reservation of seats in the Lok Sabha and legislative assemblies of States, respectively, in favor of SCs and STs.

## Way Forward:

- **Enhanced Autonomy:** Providing the NCSC with greater autonomy can help it function more effectively.
- **Increased Resources:** Adequate resources are necessary to address the challenges faced by SC communities.
- **Proactive Measures:** The NCSC should take proactive steps to address systemic discrimination and ensure timely resolution of complaints.
- **Strengthened Outreach:** Collaborating with civil society organizations and strengthening outreach programs can enhance the Commission's effectiveness in safeguarding the rights of SCs.

### UPSC MAINS QUESTION

Q. Examine the constitutional provisions and functions of the National Commission for Scheduled Castes (NCSC) in India. (150 WORDS).

## 11. HAVING PANCHAYATS AS SELF-GOVERNING INSTITUTIONS

### SOURCE: THE HINDU

#### Why in news:

It has been thirty years since the 73rd and 74th Constitutional Amendment Acts came into effect, envisioning local bodies in India as institutions of local self-government.

Instituted in 2004, the Ministry of Panchayati Raj aimed to strengthen rural local governments in line with these amendments.

**The fiscal devolution, a key aspect, encourages local bodies to generate their own revenues.**

Despite these efforts, recent data raises concerns about the financial sustainability of Panchayati Raj Institutions (PRIs).

#### Salient Features of the 73rd and 74th Amendments:

- **Constitutional Additions:** Added Part IX ("The Panchayats") and Part IXA ("The Municipalities") to the Constitution.
- **Basic Units:** Gram Sabhas for villages and Ward Committees for Municipalities, following a three-tier system.
- **Reservation Provisions:** Reserved seats for SCs, STs, and women at various levels.
- **Tenure:** Uniform five-year term with elections to constitute new bodies before term expiry.
- **Developmental Planning:** Empowered Panchayats to prepare plans for economic development and social justice.
- **Revenue and Finances:** Dependent on budgetary allocation, revenue share, Central Government programs, and Union Finance Commission grants.

#### Current Status of Finances of PRIs:

- **Revenue Statistics:** In FY 2022-23, panchayats recorded Rs 35,354 crore total revenue, with only Rs 737 crore from own tax revenue.
- **Revenue Per Panchayat:** On average, each panchayat earned Rs 21,000 from own tax



revenue and Rs 73,000 from non-tax revenue.

- **State Revenue Share:** Panchayats' share in State revenue remains minimal, varying widely across states.

#### Need for Self-Sufficiency:

- **Excessive Reliance on Grants:** Panchayats earn only 1% of revenue through taxes, with 80% from the Centre and 15% from States.
- **Disparities Across States:** Wide variations in revenue earned per panchayat among states.
- **General Aversion Towards Generating Income:** Panchayats show less interest in own-source revenue due to increased grants from the Central Finance Commission (CFC).

#### Suggestions for Boosting Financial Resources of PRIs:

- **Expert Committee Report:** Detailed State Acts on tax and non-tax revenue collection.
- **Establishing Conducive Environment:** Panchayats to decide tax and non-tax bases, rates, periodic revisions, and enact effective tax management laws.
- **Diversifying Non-Tax Revenues:** Exploring potential in fees, rent, income from investments, and innovative projects.
- **Leveraging Local Resources:** Gram sabhas play a role in leveraging local resources for revenue generation.
- **Fostering Partnerships:** Promoting entrepreneurship, fostering partnerships, and enhancing effectiveness in revenue generation.

#### Related Initiatives:

##### SVAMITVA Scheme:

- Launched on National Panchayati Raj Day 2020.
- Aims to provide "Record of Rights" to every rural household owner.
- Enables economic progress in rural India through land rights.

#### e-Gram Swaraj e-Financial Management System:

- Simplified Work Based Accounting Application for Panchayati Raj.
- Streamlines financial management processes for local governance.
- Enhances transparency and accountability in financial transactions.

#### Geo-Tagging of Assets:

- "mActionSoft" developed by the Ministry of Panchayati Raj.
- Mobile-based solution for capturing photos with Geo-Tags (GPS Coordinates).
- Facilitates tracking and monitoring of assets created through government programs.

#### Citizen Charter:

- Platform provided by MoPR to upload Citizen Charter documents.
- Focuses on improving the standard of services delivered by PRIs.
- Promotes accountability and citizen empowerment in local governance.

#### Revamped Rashtriya Gram Swaraj Abhiyan (2022-23 to 2025-26):

- Aims to reimagine PRIs as vibrant centers of local self-governance.
- Special focus on Localisation of Sustainable Development Goals (LSDGs) at grassroots level.
- Emphasizes a collaborative approach involving Central Ministries, State Line departments, and stakeholders.

#### Conclusion:

**While constitutional amendments aimed at empowering local bodies, the recent data on PRIs' finances highlights challenges.**

Excessive reliance on grants, disparities across states, and aversion to generating own income pose significant hurdles.

**Educating elected representatives and the public on the importance of self-sufficiency is crucial for PRIs to evolve into effective local self-governing institutions.**





## UPSC MAINS QUESTION

Q. In your view, how significantly has the decentralization of power in India altered the governance dynamics at the local level? (150 WORDS)

## VI. ELECTIONS AND RPA

### 12. TAMIL ACTOR VIJAY ENTERS POLITICS WITH 'TAMILAGA VETRI KAZHAM' PARTY

#### SOURCE: HINDUSTANTIMES

##### Why in news:

The announcement of Tamil superstar Thalapathy Vijay's political party has sparked interest in the process of registering political entities in India.

##### Creating a Political Party:

- **Legal Framework:** Article 324 of the Indian Constitution and Section 29A of the Representation of the People Act, 1951, empower the Election Commission to regulate party registration.
- **Application Process:** Parties must apply to the Election Commission within 30 days of formation.
- **Public Notice:** Proposed party names must be published in national and local newspapers and on the Election Commission's website.
- **Documentation:** Application includes a prescribed format, a demand draft of Rs. 10,000, party memorandum, rules, electoral rolls of 100 members, and affidavits.
- **Affidavits:** Signed affidavits confirming non-membership in other parties are required from the President/General Secretary and 100 members.

##### Need for Registration:

- **Not Mandatory:** Registration isn't compulsory but offers advantages under the Representation of the People Act, 1951.

- **Symbol Allotment:** Registered parties receive priority for free symbols over independents.
- **State or National Recognition:** Parties can achieve state or national party status based on conditions in the Election Symbols (Reservation and Allotment) Order, 1968.

##### Recognition Criteria:

- **State Party:** Must meet specific criteria related to vote share and seat wins in assembly or Lok Sabha elections.
- **National Party:** Conditions include vote share across states and Lok Sabha seat wins.

##### Benefits of Recognition:

- **Reserved Symbol:** State and national parties receive reserved symbols.
- **Nomination Ease:** Fewer proposers are required for filing nominations.
- **Free Electoral Rolls:** Entitled to free electoral rolls.
- **Media Access:** Can use state-owned broadcasting facilities during elections.
- **Additional Perks:** May include subsidized land for party offices.

### 13. SC RULES ELECTORAL BONDS SCHEME UNCONSTITUTIONAL

#### SOURCE: THE HINDU

##### Why in news:

The Supreme Court's historic decision declared the electoral bonds scheme "unconstitutional."

This unanimous ruling came in response to petitions challenging the government's electoral bond system, which allowed undisclosed contributions to political parties.

##### About the Ruling:

- Chief Justice DY Chandrachud and four other judges ruled the electoral bonds scheme violated the right to information under Article 19(1)(a).



- Emphasized transparency in elections, stating voters should know where political parties get their funding.
- Ordered the State Bank of India (SBI) to stop issuing electoral bonds and disclose details of bonds purchased since April 12, 2019, to the Election Commission.

### Impact and Political Context:

- A blow to the BJP, the main beneficiary since the scheme's introduction in 2017.
- Advocate Prashant Bhushan highlighted the court's decision as a violation of citizens' right to information.
- Initially portrayed as a move towards transparency, the scheme allowed anonymous individuals and entities to buy electoral bonds, benefiting registered political parties.



### Electoral Bonds:

- Introduced in 2017, electoral bonds enable anonymous donations to political parties in denominations from Rs 1,000 to Rs 1 crore.
- Formally rolled out in 2018, they can be purchased from designated State Bank of India branches.
- Bonds must be cashed within 15 days of purchase for electoral expenses during specific periods in January, April, July, and October.
- Available to parties registered under the Representation of the People Act, 1951, securing at least 1 percent of votes in the last General Election.

### Arguments Presented:

- Critics argue that electoral bonds lack transparency, creating an uneven playing field between the ruling party and the

opposition, eroding democratic institutions.

- Government contends that before electoral bonds, parties weren't required to disclose donations below Rs 20,000, leading to 69 percent from "unknown sources."
- Anonymity in electoral bonds was introduced to protect donors' affiliations while ensuring funds through recognized channels.

### Supreme Court's Judgment:

- Seven years after the initial challenge by the Association for Democratic Reforms (ADR) in 2017, the Supreme Court delivered a landmark judgment.
- The ruling reaffirms the commitment to thoroughly examine issues with significant impacts on elections.
- The Constitution bench, comprising Justices Sanjiv Khanna, BR Gavai, JB Pardiwala, and Manoj Misra, heard arguments from various parties, highlighting the importance of reducing cash involvement in electoral activities.

### UPSC MAINS QUESTION

Q. "Examine the Supreme Court's recent ruling declaring the electoral bonds scheme 'unconstitutional', analysing its implications on political funding transparency and electoral integrity. (150 WORDS)

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

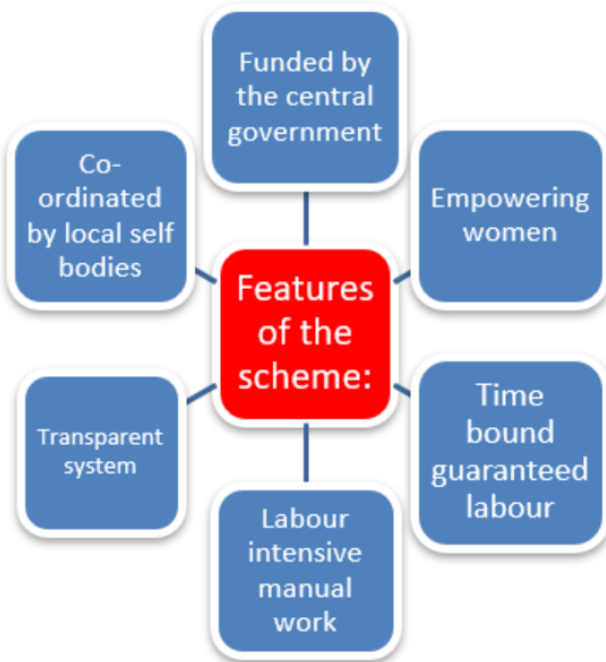
### 14. NET ZERO GAIN FOR JOB GUARANTEE SCHEME

### SOURCE: THE HINDU

### Why in news:

The Interim Budget has allocated ₹86,000 crore for the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS),

marking a significant increase from the previous year's allocation.



#### Allocation Overview:

- The allocation for MGNREGS in the 2024-25 budget represents a substantial rise of ₹26,000 crore compared to the previous year's estimates.
- Despite this increase, the allocation remains unchanged from the revised estimates for the ongoing financial year, potentially resulting in a net zero gain for the rural employment scheme.

#### About MGNREGA:

MGNREGA, launched in 2005, is among the world's largest work guarantee programs initiated by the Ministry of Rural Development.

#### Objective:

- Aims to provide 100 days of employment annually to adult members of rural households engaged in unskilled manual work.

#### Active Workers:

- As of 2022-23, the program boasts 15.4 crore active workers contributing to various public works.

#### Legal Right to Work:

- Differs from previous schemes by establishing a rights-based framework.

- Ensures at least one-third of beneficiaries are women.
- Mandates payment of wages based on state-specific minimum wages for agricultural labourers.

#### Demand-Driven Approach:

- Guarantees work within 15 days of demand, offering an 'unemployment allowance' if not met.
- Facilitates self-selection of workers through a demand-driven model.

#### Decentralized Planning:

- Emphasizes decentralization, involving Panchayati Raj Institutions (PRIs) in planning and implementation.
- Gram sabhas recommend and execute at least 50% of the undertaken works, enhancing local participation.

## 15. CONGRESS TO REACH OUT TO LAKHS OF AGNIPATH SCHEME ASPIRANTS

#### SOURCE: THE HINDU

#### Why in news:

As part of the Jai Jawan campaign, Congress plans to connect with over 35 lakh Agnipath scheme aspirants.

#### The Agnipath Scheme

- The Agnipath scheme, introduced in 2022, aimed to recruit personnel for the Army, Navy, and Indian Air Force (IAF) on four-year contracts, including six months of training.
- Recruits serve in various branches, except the technical cadre of the medical branch.
- Allows up to 25% of recruits to apply for regular service after four years, based on merit and organizational requirements.

#### Objectives of the Agnipath Scheme:

- To ensure a youthful profile for the armed forces by reducing the average age of serving soldiers.
- Transformation of the armed forces into a tech-savvy and modern fighting force.



- Empowering civil society by providing disciplined and skilled youth for various roles post-retirement.

### Benefits for Agniveers:

- Monthly remuneration ranges from Rs 30,000 to Rs 40,000, along with risk and hardship allowances.
- **Seva Nidhi contributory package ensures financial security, with contributions from both Agniveers and the government.**
- Upon completion of four years, Agniveers receive around Rs 11.71 lakh (with interest), exempt from income tax.
- In case of death or disability during service, Agniveers receive substantial financial support.

### Comparison with Regular Soldier Benefits:

- Starting salary for Agniveers is lower than regular soldiers.
- Agniveers are not eligible for pension, unlike regular soldiers who receive pensions post-retirement.
- **Benefits like liberalized family pension, gratuity, insurance, and children's education allowance are exclusive to regular soldiers.**

## 16. PUBLIC EXAMINATIONS (PREVENTION OF UNFAIR MEANS) BILL, 2024

### SOURCE: INDIAN EXPRESS

#### Why in news:

The recently introduced Public Examinations (Prevention of Unfair Means) Bill, 2024 in Lok Sabha aims to enhance transparency and fairness in public examinations.

**It addresses issues in the conduct of Central Government exams and seeks to establish a comprehensive legal framework to deter unfair practices.**

#### Key Points:

#### Definition of Public Examination:

- Any exam by the specified public examination authorities or those notified by the Central Government.
- Includes Union Public Service Commission, Staff Selection Commission, Railway Recruitment Boards, etc.

### Issues in Public Recruitments:

- Malpractices cause delays and cancellations, affecting millions of youths.
- No specific law presently addresses unfair practices in Central Government exams.
- Increased vulnerability in the examination system necessitates comprehensive legislation.

### Objective of the Bill:

- Enhance transparency, fairness, and trust in public exams.
- Ensure legal deterrence against unfair practices impacting the examination system.
- Exempt candidates under existing administrative provisions.
- Serve as a template for States to safeguard their exams.

### Unfair Means Defined:

- Acts for monetary or wrongful gains, such as leakage of question papers, collusion, providing unauthorized solutions, etc.

### Punishments:

- Individuals resorting to unfair means face imprisonment (3 to 5 years) and a fine up to ₹10 lakh.
- Service providers involved can be fined up to ₹1 crore, with recovery of examination costs.

## 17. MAHARASHTRA ASSEMBLY PASSES MARATHA QUOTA BILL

### SOURCE: ECONOMIC TIMES

#### Why in news:

Recently, Maharashtra Chief Minister Eknath Shinde and his Cabinet approved a Bill proposing a 10% quota for the Maratha community in education and government jobs.



## Key Points on Maratha Reservation Bill:

### Approval Amid Criticism:

- Chief Minister Shinde approved a 10% quota for the Maratha community in education and jobs.
- Critics, including activists and opposition parties, view it as a pre-election move rather than a genuine commitment to social justice.

### Legislative Process:

- The Bill was passed unanimously during a special session, fulfilling the government's promise within three months.
- Activist Manoj Jarange-Patil labeled it a "betrayal" and urged for a Maratha quota within the existing OBC reservation for better legal scrutiny.

### Continuation of OBC Quota:

- The Bill, similar to a 2018 Act, maintains the existing OBC quota, resulting in a total reservation of 62% in Maharashtra.
- This surpasses the 50% limit set by the Supreme Court, raising concerns about the legality and fairness of the decision.

### Demands for Higher Caste Reservations:

#### Maratha Reservation History:

- In 2021, the Supreme Court struck down Maharashtra's law granting Maratha reservation, citing a violation of the 50% cap.
- Similar demands from other communities like Jats and Gujjars have surfaced, seeking inclusion in reservation categories.

### Pros and Cons of Higher Caste Reservations:

#### Positives:

- **Addressing Economic Disadvantage:** Supporters argue that some sections within higher castes face economic hardship, justifying affirmative action.
- **Promoting Social Inclusion:** Reservations could enhance representation in government jobs and educational institutions, fostering social inclusion.

#### Negatives:

- **Dilution of Original Intent:** Expanding reservations beyond historically disadvantaged groups may dilute the policy's focus on addressing historical injustices.
- **Reduced Opportunities for Existing Beneficiaries:** Widening reservations could intensify competition, potentially harming groups already benefiting from quotas.
- **Violation of Merit:** Critics contend that caste-based reservations might compromise meritocracy in selection processes.

### Way Forward:

#### Focus on Socio-Economic Criteria:

- Implement targeted programs based on individual needs, irrespective of caste, to address economic disadvantage effectively.

#### Review Creamy Layer Concept:

- Re-evaluate the exclusion of affluent individuals within any caste from reservation benefits to ensure equitable distribution.

#### Comprehensive Data Collection:

- Gather detailed socio-economic data on various communities to inform evidence-based policy decisions.

#### Open and Inclusive Dialogue:

- Encourage constructive discussions involving all stakeholders to find solutions that promote equality and address genuine disadvantage.

In conclusion, the Maratha Reservation Bill raises concerns about the balance between addressing social inequities and maintaining the integrity of reservation policies. It prompts a broader reflection on the need for nuanced and inclusive approaches in affirmative action.

### UPSC MAINS QUESTION

Q. "Examine the implications of Maharashtra's recent approval of a 10% quota for the Maratha community in education and government jobs,

considering its legal and socio-political ramifications. (150 WORDS)

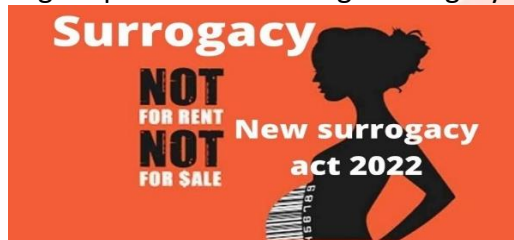
## 18. ON SURROGACY, INDIAN LAW GOES A STEP FURTHER — BUT NOT FAR ENOUGH

### SOURCE: THE HINDU

#### Why in news:

The Indian government recently revised the Surrogacy (Regulation) Rules, 2022, allowing married couples to utilize donor gametes in cases of medical conditions.

This amendment comes in response to legal challenges and concerns regarding the restriction of biological parenthood through surrogacy.



#### Major Provisions of the Amended Surrogacy Rules:

##### Background:

- Previous rules (March 2023) restricted surrogacy to the intending couple's gametes, excluding couples with medical conditions from biological parenthood.
- Legal challenges arose, particularly from individuals like a woman with MRKH Syndrome, challenging the right to parenthood.
- Supreme Court skepticism prompted reconsideration of the regulations.

##### Recent Amendments:

- Permit surrogacy with donor gametes if one spouse is certified by the District Medical Board to require donor gametes due to a medical condition.
- Couples where both partners have medical issues remain ineligible.
- Divorced or widowed women opting for surrogacy must use their eggs alongside donor sperm.

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#### Understanding Surrogacy:

##### Types:

- **Traditional Surrogacy:** Involves the surrogate's egg fertilized by the intending father's sperm.
- **Gestational Surrogacy:** Uses an embryo, not biologically related to the surrogate, implanted into her uterus.

##### Arrangements:

- **Altruistic Surrogacy:** Surrogate receives minimal financial compensation for expenses.
- **Commercial Surrogacy:** Surrogate receives compensation beyond expenses, based on contract terms.

#### Other Provisions Related to Surrogacy in India:

##### Permissibility:

- Surrogacy allowed for altruistic purposes or couples with proven infertility or disease.
- Commercial surrogacy, including for sale, is prohibited.

##### Eligibility Requirements for Couples:

- Minimum 5 years of marriage.
- Wife aged 25-50, husband 26-55.
- No living child except in cases of disability or life-threatening disorders.

##### Surrogate Mother Criteria:

- Must be a close relative of the couple.
- Married with at least one child, aged 25-35, and surrogated once.

##### Parental Status upon Birth:

- Child legally recognized as the biological child of the intended couple.
- Abortion requires consent from the surrogate and relevant authorities.

##### Conclusion:

The amended Surrogacy Rules aim to address concerns of affected couples while ensuring ethical and legal frameworks in surrogacy arrangements.

**By allowing greater flexibility, the government seeks to uphold the rights of couples facing fertility challenges while safeguarding the interests of all parties involved.**

## UPSC MAINS QUESTION

Q. "Examine the recent amendments to the Surrogacy (Regulation) Rules, 2022. discuss the balance between addressing legal challenges and ensuring ethical practices in surrogacy arrangements." (150 WORDS)

## VIII. PRELIMS POINTERS IN NEWS

### 19. A MAJOR REVAMP NEEDED FOR DHARANI

#### SOURCE: THE HINDU

##### Why in news:

The Dharani portal, introduced in 2020 as a comprehensive solution for land-related transactions in Telangana, faces criticism and operational challenges. The need for a significant overhaul is apparent to enhance user-friendliness and ensure smooth transactions.

##### About Dharani portal:

- Dharani serves as a comprehensive portal for handling all transactions and documentation related to land and property.
- By storing all relevant information online, the portal eliminates any loopholes in the registration process.
- It streamlines the registration, succession, and partition processes for agricultural lands, ensuring a quick completion within minutes.
- Landowners receive their e-pattadar passbook promptly as a result of this simplified and efficient system.

### 20. GHAR PORTAL

#### SOURCE: INDIAN EXPRESS

##### Why in news:

The GHAR (Go Home and Re-Unite) Portal was launched by the National Commission for Protection of Child Rights (NCPCR).

- **Purpose:** The portal facilitates the digital monitoring and tracking of the restoration and repatriation of children in accordance with the protocols outlined in the Juvenile Justice (Care and Protection of Children) Act, 2015.
- **Functionality:** It ensures that the processes involved in the care and protection of children under the law are efficiently managed and followed through digital means, enhancing transparency and accountability.



##### About NCPCR:

- **Role:** NCPCR serves as the apex body for safeguarding children's rights in India.
- **Establishment:** Constituted under the Commission for Protection of Child Rights (CPCR) Act, 2005, it consists of 1 chairperson and 6 members.
- **Responsibilities:** Apart from overseeing the Juvenile Justice Act, NCPCR also has responsibilities under the Protection of Children from Sexual Offences (POCSO) Act (2012) and the Right to Education (RTE) Act (2009).
- **Reporting:** NCPCR presents annual reports to the central government detailing its activities and recommendations for the protection and welfare of children.

### 21. GROW PORTAL

#### SOURCE – PIB

##### Why in news:

A Member of NITI Aayog recently launched the "Greening and Restoration of Wasteland with Agroforestry (GROW)-Suitability Mapping" portal.



## About GROW Portal:

- Hosted on the Bhuvan website, the portal ensures universal access to state and district-level data.
- Aligns with national commitments to restore 26 million hectares of degraded land by 2030 and create an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent.

## Key Initiatives and Collaborations:

- Led by NITI Aayog, the GROW initiative involved collaboration from various institutions.
- Utilized advanced technologies such as remote sensing and GIS for assessing agroforestry suitability nationwide.

## Agroforestry Suitability Index (ASI):

- Thematic datasets resulted in the creation of ASI for national-level prioritization of greening and restoration projects.
- Parameters include land use, wasteland, slope, water proximity, and soil organic content.

## System Features:

- Provides district-level information on wasteland areas suitable for agroforestry.
- Generates prioritization regimes (highly suitable, moderately suitable, less suitable).
- Offers live maps, area analysis-statistic reports, and interactive tools for flexibility in handling weightages based on local conditions.

## 22. SWACHHATA GREEN LEAF RATING SYSTEM

### SOURCE – PIB

#### Why in news:

The Swachhata Green Leaf Rating system, initiated by the government, focuses on ensuring high standards of hygiene and sanitation in the hospitality sector.

#### Objective:

- Aims to prevent pollution in water bodies and maintain a clean environment.
- Specifically targets hotels, lodges, homestays, 'Dharamshalas,' and camps equipped with portable toilets.

#### Launch and Collaboration:

- Launched in November 2023 by the Union Tourism Ministry in collaboration with the Department of Drinking Water and Sanitation.
- The rating system emphasizes compliance with safe sanitation practices outlined in the provided guidelines.

#### Implementation Structure:

- The implementation involves a three-tiered committee system.
- Verification Sub-Committee, formed by the Sub-Divisional Magistrate (SDM), conducts on-ground verification.
- District Committee, chaired by the District Collector, oversees the process at the district level.
- State-level committee, headed by the Chief Secretary, manages and supervises the overall implementation across the state.

#### Current Status:

- Despite three communiques from the Union Tourism Ministry, there has been no response from states, leading to a delay in the initiation of the Swachhata Green Leaf Rating system.

## 23. SUBMERGED DWARKA: SEA OF EVIDENCE OF A WELL-PLANNED ANCIENT CITY-STATE

### SOURCE: INDIATODAY

#### Why in news:

Prime Minister Narendra Modi engaged in a scuba diving expedition off Panchkui beach near Dwarka, Gujarat, on February 25.

**Purpose:** Explore the submerged Dwarka Nagari, the legendary kingdom of Lord Krishna mentioned in the Mahabharata.





## Historical Significance of Dwarka:

- Dwarka is significant in Hindu mythology, associated with Lord Krishna and the Mahabharata.
- **Krishna founded Dwarka after moving from Mathura with the Yadava clan.**
- **Vishnu Purana describes Dwarka as a splendid city with gardens, moats, and palaces.**
- Modern-day Dwarka houses the 13th-century Dwarkadheesh temple.

## Views of Early Experts and Archaeological Excavations:

- Scholars like F.E. Pargiter and A.S. Altekar proposed theories on Dwarka's historical location.
- **Archaeological excavations since the 20th century provided insights into the ancient settlement.**
- Evidence of human habitation dating back thousands of years discovered.

## Underwater Exploration and Discoveries:

- Marine archaeologists, including those from the National Institute of Oceanography, conducted underwater explorations.
- **Discoveries:** Stone anchors, sculptures, pottery, and metal objects found, indicating a submerged settlement.
- Excavations on nearby islands like Beyt Dwarka revealed artifacts dating back to the Late Harappan period.

## Challenges and Conclusion:

- **Challenges in dating and identifying submerged structures due to shifting seabed and ocean currents.**
- Despite discoveries, further research and interdisciplinary studies needed.

- Explorations shed light on Dwarka's ancient history, emphasizing the need for continued investigation.

## About Dwarkadhish Temple Gujarat:

- **Dwarkadhish Temple situated at the cusp of Gomti River and Arabian Sea in Gujarat.**
- Important Hindu pilgrimage site for Vaishnavites, especially Lord Krishna devotees.
- **Also known as Jagat Mandir or Trilok Sundar, protected by the Archaeological Survey of India.**
- Main temple in Dwarka city, Gujarat's Devbhoomi Dwarka district, rising from the Arabian Sea.

## 24. NIHANG SIKHS JOIN FARMERS PROTEST

### SOURCE: NDTV

#### Why in news:

Nihang Sikhs have joined the recent farmers' protest, extending their support to the farming community in their standoff with security forces, showcasing solidarity and unity within the Sikh community.

#### About Nihang Sikhs:

- **Nihang Sikhs, also known as Nihang Singhs or Akalis, are a distinct warrior order within the Sikh community, tracing their origins to the times of Guru Gobind Singh, the 10th Sikh Guru.**
- Renowned for their martial traditions, they adhere to a specific code of conduct and have a rich history of defending Sikh shrines and communities.





## Distinctive Features:

- Easily identifiable by their blue attire, including robes and high turbans adorned with steel quoits (chakrams).
- Skilled in Gatka martial arts, they carry traditional weapons like swords, spears, and daggers.

## Historical Significance:

- Played a crucial role in defending the Sikh Panth during times of persecution, including against Mughal governors and Afghan invader Ahmed Shah Durrani.

## Current Status:

- Divided into various groups, with two main forces: Buddha Dal and Taruna Dal, originating from the division of the Khalsa army in 1733.
- **Headquarters of Buddha Dal is at Talvandi Sabo, Bathinda district, while Taruna Dal's principal cantonment is at Baba Bakala, Amritsar district.**
- Anandpur Sahib serves as a central gathering point, especially during Holi Mahalla, a Sikh festival introduced by Guru Gobind Singh, featuring military skill tournaments and mock battles.

## 25. NTPC'S ESG SCORE ADVANCES IN CDP WATER SECURITY RATING

### SOURCE: TIMES OF INDIA

#### Why in news:

NTPC achieves a notable elevation of two levels in the CDP Water Security Rating, affirming its commitment to Environmental, Social, and Governance (ESG) principles.

The ascent in ratings is attributed to NTPC's dedicated initiatives in advancing water reuse and recycling practices.

#### About CDP:

- CDP, established in 2000, is a non-profit charity orchestrating a global disclosure system.

- It facilitates companies, investors, cities, states, and regions in managing their environmental impacts.
- Pioneering environmental disclosure, CDP employs investor influence to enhance corporate transparency on environmental aspects.

## 26. BHARATIYA BHASHA SAMITI

### SOURCE: HINDUSTAN TIMES

#### Why in news:

Recently, the Chairman of Bharatiya Bhasha Samiti emphasized the promotion of Indian languages in education, announcing upcoming availability of textbooks in Indian languages on digital platforms.

#### About Bharatiya Bhasha Samiti:

- **Formation:** Constituted by the Ministry of Education, Government of India in 2021.
- **Mandate:** The committee aims to facilitate the holistic and multi-disciplinary growth of Indian languages as outlined in the National Education Policy-2020.
- **Responsibilities:** It advises the Ministry on revitalizing language teaching and research, extending it in various institutions. Sub-committees may be appointed for specific tasks.
- **Activities:** The committee organizes seminars, workshops, conferences, and webinars to stress the importance of promoting Indian languages.
- **Coordination:** It interacts and coordinates with Central/State Government institutions involved in language teaching, research, and promotion.
- **Secretarial Assistance:** Shri Lal Bahadur Shastri National Sanskrit University (SLBSNSU) in New Delhi provides secretarial assistance and space for the committee, meeting related expenditures as per government rules.
- **Financial Support:** The Ministry of Education provides necessary finances to SLBSNSU under relevant budget heads for



appointing consultants, experts, scholars, officials, and conducting recommended activities.

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## INTERNATIONAL RELATIONS

### I. INDIA AND ITS NEIGHBOURHOOD

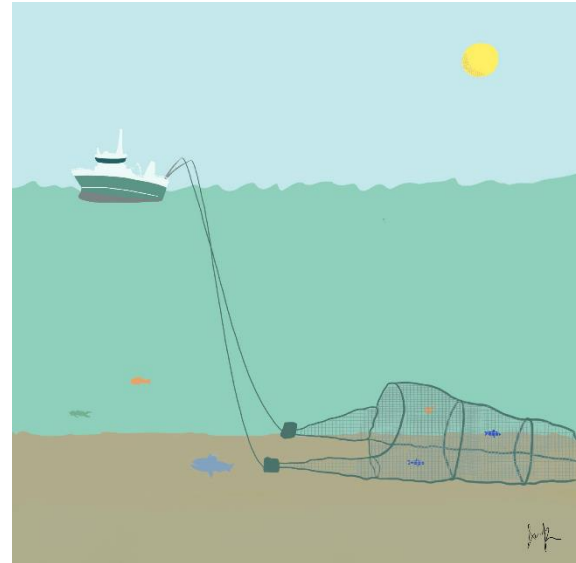
#### 1. UNENDING WOES

**SOURCE: THE HINDU**

**Why in news:**

The persistent challenges faced by Indian fishermen in the Palk Bay, involving arrests by the Sri Lankan Navy and attacks by armed civilians, demand urgent attention.

Despite diplomatic efforts, the situation remains a cause for serious concern, with a surge in detentions and seizures.



**Root Causes:**

- Bottom Trawling Issue:** Sri Lanka faces pressure from its northern province fishermen, accusing Tamil Nadu fishermen of engaging in destructive bottom trawling, banned in Sri Lanka since July 2017.
- Unabated Trawlers:** Despite promises to curb bottom trawling in the Palk Bay and incentivize deep-sea fishing under the Blue Revolution Scheme, bottom trawlers continue their operations.
- Regulatory Challenges:** The Tamil Nadu Marine Fishing Regulation Act 1983 permits mechanized fishing boats only beyond three nautical miles from the coast. The proximity of Dhanushkodi to the International Maritime Boundary Line (nine nautical miles) results in occasional breaches.

#### 2. 'INDIA'S KALADAN PROJECT IN MYANMAR IN LIMBO AS REBELS CONTROL KEY TOWN'

**SOURCE- THE HINDU**

**Why in news:**

India's ambitious Kaladan Multi-Modal Transit Transport Project (KMMTP), designed to enhance connectivity with Southeast Asia, faces a substantial setback as a crucial town in Myanmar,

Paletwa, falls under the control of the rebel Arakan Army (AA).



### Paletwa Conflict Dynamics:

- **Chin and Arakan Dynamics:** The capture of Paletwa has intensified tensions between the Chin and Arakan ethnic groups, with historical claims adding complexity.
- **Inter-Ethnic Solidarity:** Ethnic Armed Organizations' (EAOs) solidarity is crucial against the military, but achieving inter-ethnic compromise is challenging.
- **Impact on Kaladan Project:** Paletwa's strategic significance poses challenges for the Kaladan project, vital for addressing India's geo-economic and geopolitical concerns in Northeast India.

### Challenges and Implications for India:

- **Project Implementation Hurdles:** Delays in the Kaladan project stem from terrain, coordination issues, instability, and security concerns.
- **Local Engagement:** Understanding local attitudes and interests, especially in Mizoram and Chin State, is crucial for project success and fostering economic activity.
- **China's Role:** The Arakan Army's affiliation with the Three Brotherhood alliance, reportedly backed by China, raises concerns about Beijing's interference in India's connectivity projects.

### China's Economic Presence:

- **Strategic Alliances:** The Three Brotherhood alliance aims to protect

Chinese investments in Myanmar, potentially impacting India's interests.

- **Reported Support:** Reports suggest Chinese funding and military aid to the Arakan Army, posing challenges for India's regional influence.
- **Infrastructure Projects:** China's initiatives, including pipelines and a deep-sea port, expand its economic foothold along Myanmar's coast, affecting regional dynamics.

### Conclusion:

India faces scrutiny over its external engagements' impact on regional conflicts, emphasizing the need for humanitarian aid and collaboration with ethnic organizations to navigate complex border dynamics responsibly.

**Balancing strategic interests while fostering regional stability remains paramount for India's engagement in Myanmar's evolving geopolitical landscape.**

### Kaladan Multi-Modal Transit Transport Project:

A joint initiative by India and Myanmar to establish a multi-modal transport system for cargo shipping from Indian eastern ports to Myanmar and the North-Eastern part of India through Myanmar.

### **Agreement and Framework:**

- The Ministry of External Affairs (MEA), Govt. of India, and the Govt. of Myanmar signed a Framework Agreement in April 2008 to facilitate project implementation.

### **Connectivity and Economic Development:**

- Connects Sittwe Port in Myanmar to the India-Myanmar border, promoting economic development in North-Eastern Indian states by opening a sea route for products.
- Provides a strategic link to the North-East, relieving pressure on the Siliguri Corridor.

### **Political and Strategic Significance:**

- A project of political and strategic importance executed through India's grant assistance to Myanmar.
- Enhances economic, commercial, and strategic interests of both nations, contributing to Myanmar's economic integration with India.

### Project Development Consultant:

- The Inland Waterways Authority of India (IWAI) serves as the Project Development Consultant (PDC) appointed by the MEA in 2009 for the implementation of the Port & Inland Water Transport (IWT) components.

### UPSC MAINS QUESTION

Q. "Examine the challenges faced by India's Kaladan Multi-Modal Transit Transport Project (KMTP) due to the conflict dynamics in Myanmar, particularly the capture of Paletwa by the Arakan Army (150 WORDS)

### 3. 'RECONSIDER MOVE ON WITHDRAWAL OF FREE MOVEMENT REGIME'

#### SOURCE – THE HINDU

#### Why in news:

A coalition of five non-government organizations in Mizoram has urged the Central government to reconsider its decision to abolish the Free Movement Regime (FMR) along the India-Myanmar border.



### UN Declaration on the Rights of Indigenous Peoples:

- Mizoram NGOs highlight India's commitment as a signatory to the UN Declaration on the Rights of Indigenous Peoples, 2007.
- Express disappointment with the decision to scrap the FMR and initiate border fencing instead of fostering relations between the border communities.

### About Free Movement Regime (FMR):

- Implemented in 2018 under the Central government's Act East policy.
- Allows hill tribes from both India and Myanmar to travel within 16 km on either side of the border with a border pass.
- Border pass, valid for one year, permits a two-week stay per visit.
- Facilitates cultural assimilation, weddings, common festivals, and trans-border trade among locals.

### Importance of FMR:

- Strengthens cultural and fraternal linkages among trans-border villagers.
- Reflects physical, ethnic, linguistic, and cultural connections.

### Indo-Myanmar Border (IMB):

- Stretches 1,643 km across Mizoram, Manipur, Nagaland, and Arunachal Pradesh.
- Extends from the tripoint with China in the north to the tripoint with Bangladesh in the south.
- Guarded by the Assam Rifles.

### 4. CHINA'S 'XIAOKANG' BORDER DEFENCE VILLAGES ALONG THE LAC, NOW BEING OCCUPIED

#### SOURCE: INDIAN EXPRESS

#### Why in news:

Recent developments along the Line of Actual Control (LAC) between India and China have raised concerns regarding the occupation of

previously vacant "Xiaokang" border defence villages by Chinese nationals.

These villages, constructed by China in 2019, have strategic implications for the Indian Army.

**Xiaokang Border Defence Villages:**

**Model Villages:**

- Xiaokang or "well-off villages" border defence villages are part of China's strategic infrastructure development initiative along its borders, particularly the LAC with India.
- Notable areas of occupation include villages across from Lohit Valley and the Tawang sector of Arunachal Pradesh.

**Dual-use Infrastructure:**

- Designed for both civilian settlement and military presence, they are characterized as "dual-use infrastructure."
- Built in regions of contested territorial claims or where there is a perceived need to reinforce sovereignty.

**Concerns for India:**

**Territorial Claims:**

- China's construction of 628 such villages along India's borders signifies efforts to assert territorial claims, raising concerns for Indian military strategists.

**Military Implications:**

- Potential dual-use nature raises concerns about increased militarization along the already tense LAC.

**Uncertain Intentions:**

- Lack of transparency regarding civilian population purpose and scale hinders trust-building efforts.

**India's Initiatives along the LAC:**

**Vibrant Villages Program:**

- Aims to modernize 663 border villages, including 17 along the China-India border in Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.

**Border Roads Organization (BRO):**

- Completed 90 infrastructure projects worth Rs 2,941 crore along the India-China border.

- Major highways under construction to improve connectivity, particularly in Arunachal Pradesh and the Tawang region.

**Border Area Development Programme (BADP):**

- Addresses special developmental needs of people living in remote areas near the international border.

**Railways:**

- Constructing strategic rail lines in the Northeast region to facilitate swift mobilization of the Indian army.



## LINE OF ACTUAL CONTROL (LAC)

Serves as the boundary separating Indian-controlled territory from Chinese-controlled territory. India asserts it to be 3,488 km, while China contends it to be approximately 2,000 km.

**Disagreements:**

- Primary disputes arise from alignment differences in sectors like the eastern and western sectors.

**India's Response:**

- Initially rejected the concept but shifted approach in the mid-1980s, culminating in the Agreement to Maintain Peace and Tranquility at the LAC in 1993.

**Recent Episodes:**

- Serious conflicts in Galwan Valley in 2020 and in Tawang in 2022 have escalated tensions.

**Comparison with Line of Control (LoC):**

- LoC with Pakistan has international legal validity and is delineated on a map, unlike the LAC, which lacks consensus and is not officially demarcated.



## UPSC MAINS QUESTION

Q. Discuss the strategic implications of China's "Xiaokang" Border Defence Villages along the Line of Actual Control (LAC) with India, highlighting India's concerns (150 WORDS)

## II. INDIA RELATIONS WITH MAJOR POWERS

### 5. A PRIVILEGED STRATEGIC PARTNERSHIP, WITHOUT A GULF

#### SOURCE: THE HINDU

#### Why in news:

Prime Minister Narendra Modi is set to embark on his seventh visit to the United Arab Emirates (UAE) from February 13-14, 2024.

During this visit, he will inaugurate a temple in Abu Dhabi. This marks a significant moment in the bilateral relationship between India and the UAE.

#### Status of India-U.A.E. Relations:

- **Prime Minister's Visits:** This upcoming visit will be the Prime Minister's seventh to the UAE since 2015 and the third in the last eight months.
- **Felicitation of UAE President:** Earlier this year, the UAE President was honored in a road show during his visit to Gandhinagar, showcasing the strengthening ties between the two nations.
- **Evolving Bilateral Relationship:** In a short duration, India's relationship with the UAE has evolved into one of the most prominent bilateral relationships for New Delhi.

#### Areas of Cooperation:

#### Strategic Cooperation:

- India's participation in important groupings like I2U2 or the West Asian Quad.
- UAE's involvement in the India-Middle East-Europe Economic Corridor (IMEEC) infrastructure project to counter China's Belt and Road Initiative.

#### Energy Cooperation:

- The UAE, the only Gulf nation with strategic oil reserves stored in India.
- Agreement between Indian Strategic Petroleum Reserves Ltd (ISPRL) and Abu Dhabi National Oil Company for investment in the strategic crude oil storage facility in Mangaluru.

#### Economic Cooperation:

- UAE as India's third-largest trading partner and second-largest export destination.
- Bilateral trade reaching \$85 billion in 2022-23.
- UAE as the fourth-largest overall investor in India.
- India-UAE Comprehensive Economic Partnership Agreement targeting \$115 billion in trade in services.

#### Technical Cooperation:

- Robust financial technology cooperation, including acceptance of RuPay card in the UAE.
- Operationalization of a rupee-dirham settlement system for transactions, exemplified by Indian Oil Corporation's payment to Abu Dhabi National Oil Company.

#### Climate Change Cooperation:

- PM Modi's participation in COP 28 climate summit in Dubai.
- Joint launch of the Global Green Credit Initiative to address finance-related issues in climate change efforts.

#### Areas of Divergence:

- **Challenges Faced by Indian Businesses:** Unclear regulations, labor laws, and transparency issues in the UAE pose challenges for Indian businesses.
- **Territorial Disputes:** Territorial disputes between the UAE and Iran may impact India's trade and energy security.
- **Issues Faced by Indian Workers:** Indian blue-collar workers in the UAE encounter problems such as poor working and living conditions, along with discrimination.

## Conclusion:

While India and the UAE experience certain divergences, the overall relationship showcases great convergence and mutual respect.

These issues are not uncommon among even the closest of friendly nations. The visit and the ongoing cooperation between the two nations reflect a commitment to strengthening ties in various spheres.

## III. REGIONAL AND GLOBAL GROUPINGS

### MUNICH SECURITY CONFERENCE

#### SOURCE: NEWE18

#### Why in news:

The sixtieth Munich Security Conference (MSC) has brought together world leaders amid rising concerns over the ongoing conflict in Ukraine and challenges to the cohesion of the North Atlantic Treaty Organization (NATO).

The MSC serves as a pivotal platform for discussing global security issues, fostering dialogue, and seeking peaceful solutions to conflicts.

#### About Munich Security Conference (MSC):

- **Objective:** The MSC is the foremost global forum for deliberating international security policies, aiming to build trust and contribute to conflict resolution through continuous and informal dialogue in the international security community.
- **History and Venue:** Since 1963, the conference has been held annually in February in Munich, Bavaria, Germany, with the Hotel Bayerischer Hof serving as the venue.
- **Participants:** The MSC attracts security experts, politicians, military leaders, and representatives from the defense industry worldwide, providing a space for diplomatic initiatives to address pressing security concerns.
- **Publications:** The conference regularly organizes high-profile events on specific

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topics and regions and releases the Munich Security Report—an annual compilation of essential figures, maps, and research on critical security challenges.



#### North Atlantic Treaty Organization (NATO):

- **Formation:** NATO is a transatlantic security alliance comprising 31 North American and European countries, established by the North Atlantic Treaty (Washington Treaty) on April 4, 1949.
- **Aim:** NATO is dedicated to maintaining peace, guaranteeing territorial integrity, political independence, and the security of its member states.
- **Article Five:** A cornerstone of the Alliance, Article Five of the treaty stipulates that an armed attack against one member state is considered an attack against all. Member states commit to assisting the attacked member, potentially with armed forces.
- **Headquarters:** NATO's headquarters are in Brussels, Belgium.

## IV. PRELIMS POINTERS IN NEWS

### 7. WILL EUROPEAN MUSEUMS RETURN SOUTHEAST ASIA'S 'STOLEN' ARTIFACTS?

#### SOURCE: INDIAN EXPRESS

#### Why in news:

President Macron pledged to support Cambodia in returning Khmer artifacts and expand



## Cambodia's National Museum during Prime Minister Hun Manet's visit.

Macron was the first European leader to address demands for the return of looted antiquities in 2017, highlighting France's commitment to restoring cultural heritage.



### Cases of Repatriation:

- Musee Guimet in France agreed to return a **seventh-century Khmer statue to Cambodia**, taken during colonial times.
- **Germany and France allocated funds to review African heritage objects**, possibly indicating similar efforts for Asian artifacts.
- The **Metropolitan Museum of Art in New York pledged to return sculptures to Cambodia and Thailand**, setting a precedent for other institutions.

### Legal Basis and Challenges:

- The **1970 UNESCO Convention is a key legal framework for repatriation**, but it **doesn't apply retrospectively to colonial-era looting**.
- Some countries, like Austria, are proposing national laws for returning objects acquired during colonialism.

### Reasons for Repatriation:

- **Soft Power Benefits:** Repatriation enhances a nation's soft power, showcasing commitment to international law, reconciliation, and better relations.
- **Rebranding Opportunity:** Returning artifacts allows Western governments to mend historical wrongs and improve their image, especially in regions like Southeast Asia.

- **EU's Role:** The European Parliament discusses recognizing and addressing colonial legacies, potentially creating a permanent EU body on restorative justice.
- **Cooperation is Key:** European museums need to openly cooperate with the governments of affected regions to gain recognition similar to the United States.

### Conclusion:

- Returning cultural artifacts taken during colonialism is not only a legal and ethical issue but also a diplomatic endeavor.
- European museums engaging in proactive repatriation efforts can build goodwill, foster cooperation, and enhance their soft power globally.

## 8. RAFAH OPERATION

### SOURCE- THE HINDU

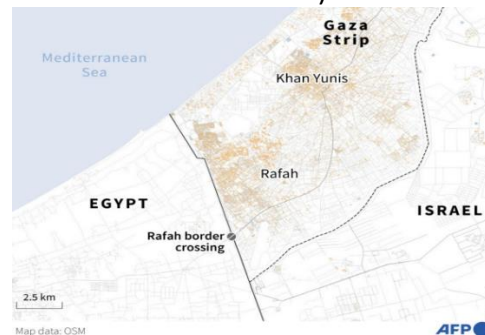
#### Why in news:

**Israeli Prime Minister Benjamin Netanyahu has expressed the intention to extend Israel's military operation into Gaza's southern town of Rafah.**

Netanyahu assured "safe passage" for civilians displaced in Rafah during the military operation.

#### Rafah Crossing:

- Located at the south of the Gaza Strip, home to 2.3 million people, between Israel, Egypt, and the Mediterranean Sea.
- Controlled by Egypt, serving as the crucial entry point for humanitarian aid from Egypt's Sinai peninsula region.
- **Two other crossings:** Erez (north, with Israel) and Kerem Shalom (southern, commercial with Israel).





## Sinai Peninsula:

Triangle-shaped, in northeastern Egypt, connecting Asia and Africa.

### Boundaries:

- North: Mediterranean Sea
- East: Israel and Gaza Strip
- West: Suez Canal (dividing Sinai from African part of Egypt)
- Southwest: Gulf of Suez
- South: Red Sea
- Southeast: Gulf of Aqaba

Maritime borders with Jordan and Saudi Arabia in the south.

### Significance:

- Rafah Crossing is vital for Gaza's connectivity and humanitarian aid inflow.
- Sinai Peninsula serves as a strategic land bridge connecting two continents and hosts critical maritime borders for Egypt.

## 9. AFRICAN CLUBS ASSOCIATION (ACA)

### SOURCE: DOWN TO EARTH

#### Why in news:

The Africa Club is the Alliance of African Multilateral Financial Institutions, formed at the 37th African Union Summit.

**Objective:** To enhance Africa's global financial influence by aligning with Sustainable Development Goals (SDGs) and the African Union's Agenda 2063.

#### Key Functions and Aims:

- **Amplification of Influence:** Align functions with SDGs to boost Africa's impact in the global financial system.
- **Introduction of Financial Instruments:** Introduce innovative financial tools for development.
- **Debt Management Discussions:** Provide a platform for discussing debt management.
- **Collaborative Effort:** Foster collaboration to address specific needs of African countries.

#### Member Institutions:

- African Export Import Bank
- Trade and Development Bank
- Africa Finance Corporation
- African Reinsurance Corporation
- African Trade and Investment Development Insurance
- Shelter Afrique Development Bank
- ZEP – RE (PTA Reinsurance Co)

#### Key Facts about African Union:

- **Formation:** Officially launched in 2002, succeeding the Organisation of African Unity (OAU, 1963-1999).
- **Member States:** Consists of 55 member states across the African continent.
- **Headquarters:** Located in Addis Ababa, Ethiopia.
- **Goals:** Aims at strengthening member states individually and collectively through continental cooperation.

## 10. RAISINA DIALOGUE 2024

### SOURCE: PIB

#### Why in news:

The 9th edition of the Raisina Dialogue 2024 was inaugurated by Prime Minister Narendra Modi in New Delhi.

#### What is Raisina Dialogue?

- Organized by Delhi-based think tank Observer Research Foundation in partnership with the Ministry of External Affairs.
- Attendees include individuals from political, business, media, and civil society backgrounds.

#### Significance for India

- **Platform for Dialogue:** Opportunities for India to discuss key regional and global issues.
- **"Vishwamitra" or Friend of the World:** Reflects India's commitment to being a leading voice globally through mutual cooperation.



- **Upholding Rule-based Order:** Demonstrates India's commitment to a rules-based and inclusive world order.
- **Advancing National Interest:** Showcases India's achievements and potential, advancing strategic and economic interests.

### Issues with Recent Raisina Dialogue

- **Agenda Dominated by European Interests:** Overemphasis on Russia-Ukraine war; neglect of issues like Israel-Gaza conflict and Global South agenda.
- **Lack of Balance:** European concerns raised, but Russia and China, central to discussions, were not invited.
- **Lack of Diversity:** Minimal representation from Southeast Asia, Latin America, and limited South Asian representation.
- **Underrepresentation of Civil Societies:** Inadequate presence of non-governmental civil society organizations in discussions.

### Conclusion

Raisina Dialogue should encompass a broader range of issues and include neglected regions for a more effective global discussion platform.

## ECONOMY

### I. GROWTH AND DEVELOPMENT, INCLUSION

#### 1. CORE SECTOR OUTPUT GROWTH SLOWED TO A 14-MONTH LOW IN DECEMBER

#### SOURCE: THE HINDU

#### Why in news:

India's eight core sectors witnessed a slowdown in output growth, reaching a 14-month low at 3.8% in December.

The data released by the Commerce and Industry Ministry revealed a decline from 8.3% growth a year earlier and a revised 7.9% growth in November 2023.

#### Sector-wise Performance:

- **Electricity Generation:** Recorded an eight-month low at 0.6%, contributing to the slump.
- **Crude Oil Output:** Shrunk for the second consecutive month by 1%, marking the sharpest decline since June 2023.
- **Coal Production:** Grew by 10.6%, the slowest year-on-year increase in six months but reached its highest level since April 2023.
- **Refinery Products and Steel Output:** Hit their highest levels since April, with growth rates slowing — refinery products at a nine-month low of 2.6%, and steel at a 14-month low of 5.9%.
- **Cement Production:** Recovered from a 4% contraction in November, expanding by 1.3% in December, reaching levels not seen since July.
- **Fertilisers Production:** Grew at a seven-month high rate of 5.8%, with output levels at their highest since May.
- **Natural Gas Production:** Grew at a three-month low rate of 6.6%.

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## Overall Impact:

- The core sectors contribute over 40% to the Index of Industrial Production (IIP).
- The IIP growth, which stood at 2.4% in November, is expected to persist at similar levels in December, according to analysts.
- IIP numbers for December will be released on February 12.

## 2. THE WHITE PAPER ON THE ECONOMY IS A POLITICAL DIVERSION

### SOURCE- THE HINDU

#### Why in news:

The recent presentation of a "white paper" on the Indian economy by the finance minister has sparked debates on India's economic performance over the past two decades.

This document, prepared by the Ministry of Finance, offers a comparative analysis of economic governance under the Congress-led UPA and BJP-led NDA governments.

#### Objectives of the White Paper:

##### Informing Governance Challenges:

- Elucidates economic and fiscal crises inherited by the NDA from the UPA.
- Highlights a surge in fiscal deficit during the UPA era.

##### Highlighting Policy Interventions:

- Explains policies like GST and IBC for addressing economic challenges.

##### Fostering Informed Debate:

- Aims to stimulate informed discussions on national interests and fiscal responsibility.
- Provides insights into the impact of corruption scandals during the UPA regime.

##### Emphasizing National Development:

- Echoes PM Modi's call for growth, innovation, and inclusive development.
- Stresses fiscal prudence and efficient governance for sustainable growth.

#### Contents and Claims:

##### Pre-2014 Economic Condition:

- Faced a fragile economy with mismanagement, corruption, and policy paralysis.
- Challenges included a 'twin balance sheet problem', high inflation, fiscal deficits, and infrastructure neglect.
- Scams and corruption eroded public trust and slowed economic growth.

##### Post-2014 Economic Reforms and Achievements:

- Implemented reforms for economic stability, infrastructure development, and digitalization.
- Achieved global recognition and restored investor confidence.
- Transitioned from being among the 'fragile five' to among the 'top five' global economies.

##### Major Interventions by NDA:

##### Transformative Governance Reforms:

- Spearheaded a digital revolution for transparent governance.
- Encouraged participatory governance.

##### Social Welfare Schemes:

- Introduced schemes like Jan Dhan Yojana, Swachh Bharat, Ujjwala, Digital India, PMAY, PMFBY, Ayushman Bharat, PM-KISAN, NEP 2020, Mudra Yojana, etc.

##### Critical Analysis:

##### Selective Emphasis:

- Focuses on NDA successes, overlooking persistent challenges like unemployment and poverty.
- Unemployment rates remained high during the NDA era compared to the UPA period.

##### Lack of Comprehensive Analysis:

- Calls for a nuanced understanding, including social indicators and long-term structural reforms.
- Does not adequately address agrarian distress and rural unemployment.

##### Omissions:

- Key issues like unemployment and poverty alleviation are absent, raising questions about comprehensiveness.

- Does not provide a detailed assessment of recent policy initiatives' impact on economic growth.

### Conclusion:

The white paper underscores the government's commitment to transparency and accountability but warrants cautious interpretation due to its selective focus and limited scope.

**A more inclusive and evidence-based approach is essential to inform policy decisions and foster sustainable development in India.**

## II. POVERTY

### 3. MULTIDIMENSIONAL POVERTY IN INDIA

#### SOURCE: THE HINDU

#### Why in news:

Finance Minister Nirmala Sitharaman announced in the Interim Budget that 25 crore Indians were lifted out of poverty in the past decade, showcasing the government's commitment to inclusivity.

#### NITI Aayog's Discussion Paper:

- Data from NITI Aayog's discussion paper titled "Multidimensional Poverty in India Since 2005-06" reveals significant progress.
- Authors Ramesh Chand and Yogesh Suri, with inputs from UNDP and OPHI, highlight the decline in multidimensional poverty from 29.17% in 2013-14 to 11.28% in 2022-23.

#### Escaped Multidimensional Poverty (2013-14-2022-23)

	Estimated in lakh
Bihar	377.09
Madhya Pradesh	230.00
Maharashtra	159.07
Odisha	102.78
Rajasthan	187.12
Uttar Pradesh	593.69
West Bengal	172.18
<b>INDIA</b>	<b>2,482.16</b>

#### State-Level Impact:

- Uttar Pradesh leads with 5.94 crore individuals escaping poverty, followed by Bihar at 3.77 crore and Madhya Pradesh at 2.30 crore.

#### Understanding the Multidimensional Poverty Index (MPI):

- MPI incorporates health, education, and living standards, each holding one-third weight in the index.
- It utilizes 10 indicators, including nutrition, child mortality, education, and housing, offering a comprehensive view of poverty.

#### Calculating MPI:

- Individuals deprived in at least one-third of the 10 weighted indicators are considered "MPI poor."
- MPI requires calculations for incidence of multidimensional poverty (H), intensity of poverty (A), and MPI value.

#### Data Sources and Estimations:

- Health indicators rely on the National Family Health Survey (NFHS), conducted every five years.
- Interpolation and extrapolation were used for estimating MPI for 2012-13 and 2022-23, enabling a comparative analysis of poverty trends.

#### Conclusion:

The reduction in multidimensional poverty highlights the government's dedication to inclusive development, positively impacting millions of lives across India.

## III. BANKING AND FINANCIAL INTERMEDIARIES

### 4. SOVEREIGN GOLD BOND

#### TOPIC – (GS3) ECONOMY: SOURCE- PIB

#### Why in news:

The Reserve Bank recently announced that the issue price for the upcoming tranche of Sovereign Gold Bond has been set at Rs 6,263 per gram.



## About Sovereign Gold Bond

- SGBs are government securities denominated in grams of gold, serving as substitutes for physical gold.
- Launched by the Government of India on October 30, 2015.
- Issued by the Reserve Bank on behalf of the Government.



### Eligibility:

- Restricted for sale to resident Indian entities, including individuals, Hindu Undivided Family (HUF), Trusts, Universities, and Charitable Institutions.

### Investment Limits:

- Bonds issued in denominations of one gram, with a minimum investment of one gram.
- Maximum subscription limits: 4 kg for individuals, 4 kg for HUFs, and 20 kg for trusts per fiscal year.
- In joint holding, the 4 kg limit applies to the first applicant.

### Tenor:

- The bond has a tenor of 8 years with exit options in the 5th, 6th, and 7th years.

### Authorized Agencies:

- Sold through Nationalised Banks, Scheduled Private Banks, Scheduled Foreign Banks, designated Post Offices, Stock Holding Corporation of India Ltd. (SHCIL), and authorized stock exchanges.

### Payment and Collateral:

- Payment through cash (up to Rs. 20,000), demand draft, cheque, or electronic banking.
- Investors assured of market value at maturity.

- Eligible as collateral for loans from banks, financial institutions, and NBFCs.

### Tradability:

- Bonds tradable on stock exchanges within a fortnight of issuance.
- Can be sold and transferred as per Government Securities Act, 2006.

### Taxation:

- Interest taxable as per the Income-tax Act, 1961.
- Capital gains tax exempted on redemption for individuals.

## IV. AGRICULTURE AND ALLIED

### 5. NANO DAP IN AGRICULTURE

#### SOURCE: INDIAN EXPRESS

#### Why in news:

The interim budget introduced the expansion of Nano DAP application in agriculture.

#### Understanding Nano DAP:

- **DAP Overview:** DAP, or di-ammonium phosphate, is a widely used fertilizer in India, known for its phosphorus content crucial for plant root development.
- **Nano DAP Introduction:** Nano DAP, a liquid form developed by the Indian Farmers Fertiliser Cooperative (IFFCO), has particle sizes below 100 nanometers, enhancing its efficiency.

#### Advantages of Nano DAP:

- **Enhanced Efficiency:** Small particle size enables better penetration into seeds and plants, resulting in increased seed vigor, higher chlorophyll levels, improved photosynthetic efficiency, better crop quality, and increased yields.
- **Cost-Effective:** Nano DAP proves economical compared to traditional DAP, with a 500 ml bottle equivalent to a 50 kg bag of DAP, priced at Rs 600.
- **Convenient Application:** Liquid form facilitates easy transportation, storage,



and application, offering convenience to farmers.

- **Reduced Imports:** Domestic production of Nano DAP in Kalol, Gujarat, contributes to decreased fertilizer imports, fostering self-reliance in agriculture.

### Government's Perspective:

- **Subsidy Relief:** Cost-effectiveness of Nano DAP eases the government's subsidy burden on fertilizers, providing fiscal relief.
- **Promoting Self-Reliance:** Local production aligns with the government's goal of self-sufficiency in fertilizer production, reducing dependence on imports.
- **Agricultural Growth:** Wider adoption of Nano DAP supports agricultural advancement, leading to increased food grain production and overall benefits for farmers.

## 6. MeitY TRANSFERS THE TECHNOLOGY FOR SMART FOOD GRAIN STORAGE SYSTEM (SAFEETY) TO THE INDUSTRY

### SOURCE: PIB

#### Why in news:

The Society for Applied Microwave Electronics Engineering and Research (SAMEER) developed the Technology for Smart Food Grain Storage System (SAFEETY).

#### Features:

- ConveyORIZED loading & unloading of grain bags equipped with RFID for traceability.
- Online weight and moisture measurement incorporated.
- Radio frequency-based moisture removal system for grains.

#### Need for Scientific Food Grain Storage:

- **Low Production Capacity:** India, with 18% of the global population, has only 11% of arable land, necessitating efficient storage.
- **Inadequate Storage Infrastructure:** India's foodgrain storage capacity covers only 47% of total production, leading to wastage.

- **Food Security Concerns:** Food Corporation of India (FCI) exceeds buffer capacity, highlighting the need for enhanced storage facilities.
- **Economic Viability of Farming:** Effective storage reduces wastage, stabilizes market prices, and enhances foodgrain exports, supporting farmers' incomes.

#### Initiatives for Scientific Food Grain Storage:

- **Grain Storage Plan:** Approval for the "World's Largest Grain Storage Plan in Cooperative Sector" to establish decentralized storage capacity at Primary Agricultural Credit Societies.
- **Agricultural Marketing Infrastructure (AMI) Scheme:** Funding for the construction/renovation of godowns/warehouses in rural areas.
- **Agriculture Infrastructure Fund:** Providing financing for post-harvest management infrastructure and community farming assets, enhancing storage capabilities.

## 7. AHIDF SCHEME

### TOPIC: (GS3) ECONOMY – SOURCE: TIMES OF INDIA

#### Why in news:

The Union Ministry of Fisheries, Animal Husbandry & Dairying has launched the revamped Animal Husbandry Infrastructure Development Fund (AHIDF) Scheme.

#### About the Scheme:

- **Objective:** The realigned Animal Husbandry Infrastructure Development Fund (AHIDF) Scheme aims to stimulate investments in dairy, meat processing infrastructure, animal feed plants, and related sectors.
- **Scheme Type:** It is a Central Sector Scheme, indicating that the central government bears the entire funding responsibility.
- **Eligible Entities:** Individuals, private companies, dairy cooperatives, Farmer



Producer Organizations (FPOs), and Medium Small and Medium Enterprises (MSMEs) are eligible to participate.

#### Key Benefits Provided:

- **Interest Subvention:** Offers a 3% interest subvention payable for up to 8 years, with a cap on the loan amount.
- **Credit Guarantee:** Provides credit guarantee coverage for up to 25% of the term loan.
- **Loan Coverage:** Allows loans covering up to 90% of the estimated or actual project cost, easing financial burdens for eligible entities.

## 8. APEDA FORMULATES ROADMAP TO PUSH ORGANIC EXPORTS FROM UTTARAKHAND AND SIKKIM

#### SOURCE: PIB

#### Why in news:

The Agricultural and Processed Food Products Export Development Authority (APEDA) is taking significant steps to propel India's organic export sector forward.

#### APEDA's Strategic Focus: Uttarakhand and Sikkim Uttarakhand Initiative:

- **Objective:** Enhance the organic sector through improved farming practices and streamlined certification procedures.
- **Approach:** Identify key export products to establish Uttarakhand as a thriving organic hub.

#### Sikkim Roadmap:

- **Current Status:** Sikkim is India's first fully organic state.
- **Objective:** Formulate a roadmap to diversify exports and strengthen sustainable practices in Sikkim.

#### National Expansion Vision:

- **Goal:** Replicate successful strategies in more states to create a network of thriving organic export hubs across India.
- **Strategic Approach:** Develop state-specific initiatives for organic promotion.

#### National Programme for Organic Production (NPOP) Overhaul

#### Objective:

- Enhance the accessibility of organic products in international markets.
- Align with global regulations and standards for organic products.

#### Key Updates:

- Modernizing IT infrastructure for resilient oversight.
- Focusing on geo-tagging of farms and geo-location of inspection visits.

#### Organic Exports from India

#### Potential:

- **Growing Global Demand:** Rising awareness of health and sustainability fuels increased demand for organic products worldwide.
- **Diverse Range of Products:** India offers a vast variety of organic crops, spices, and processed food, catering to diverse consumer preferences.
- **Competitive Advantage:** Favourable climate and fertile land offer cost-effective organic production compared to other regions.

#### Challenges:

- **Limited Certified Area:** A small portion of agricultural land is certified organic, restricting production capacity.
- **Fragmented Supply Chain:** Smallholding farmers face challenges in aggregation, processing, and logistics.
- **Lack of Infrastructure:** Inadequate cold storage and transportation facilities lead to product spoilage and value loss.

#### Way Forward

- **Expand Certified Area:** Government initiatives and farmer training programs can encourage organic farming practices.
- **Strengthen Supply Chain:** Invest in infrastructure for aggregation, processing, and cold chain management.



- **Promote Brand Building:** Create a strong "Made in India Organic" brand identity to build trust and command premium pricing.
- **Focus on Research and Development:** Develop high-yielding organic varieties and improve pest management techniques.

### Conclusion:

By addressing challenges and leveraging its potential, India can emerge as a leading player in the global organic export market.

APEDA's initiatives and the NPOP overhaul mark crucial steps towards achieving this goal, contributing to India's position as a key contributor to the growing global demand for organic products.

## 9. CABINET APPROVES HIKE IN SUGARCANE FRP BY RS 25 TO RS 340 PER QUINTAL FOR 2024-25 SEASON

### SOURCE: ECONOMIC TIMES

#### Why in news:

The government has announced a significant increase in the Fair and Remunerative Price (FRP) for sugarcane, reaching Rs 340 per quintal with a recovery rate of 10.25%.

#### Impact on Sugarcane Farmers:

##### Historic Increase in FRP:

- New FRP of Rs 340 per quintal is an 8% surge from the current season.
- Ensures prosperity for farmers with a recovery rate of 10.25%.

##### 107% Higher Than Cost:

- FRP is 107% higher than the A2+FL cost of sugarcane.
- Guarantees better income for over 5 crore sugarcane farmers.

##### Minimum Price Assurance:



- Even at lower recovery rates, farmers assured a minimum price of Rs 315.10 per quintal.

#### Government Support and Policy Interventions: Lowest Cane Arrears:

- Timely policy interventions by the Central Government led to the lowest cane arrears in the history of the sugar sector.
- Ensured prompt payment of cane dues to farmers, fostering self-sustainability of sugar mills without financial assistance.

#### Modifications to National Livestock Mission:

##### Entrepreneurship Expansion:

- Cabinet approved modifications to the National Livestock Mission.
- Includes additional activities such as establishing entrepreneurship for horse, donkey, mule, and camel.

##### Livestock Insurance Simplification:

- Simplification of the Livestock Insurance program with reduced beneficiary shares for farmers and increased coverage for animals.

#### Continuation of Flood Management Programme: Programme Approval:

- Cabinet approved the continuation of the "Flood Management and Border Areas Programme" with a total outlay of Rs. 4,100 crore for five years.

##### Aim of the Programme:

- Aims to address flood management and development in border areas.

#### About Fair and Remunerative Price (FRP):

FRP is the minimum price at which sugar mills purchase sugarcane from farmers.

- **Determination:** Fixed by the Union government based on recommendations from the Commission for Agricultural Costs and Prices (CACP).
- **Methodology:** Determined under the Sugarcane (Control) Order, 1966, considering variables like intercrop price parity, production costs, and demand-supply scenario.



- **Benefits:** Guarantees margins for farmers irrespective of sugar mills' profitability, ensuring consistent application across the nation. Some states announce a State Advised Price, typically higher than the FRP.

## UPSC MAINS QUESTION

Q. Examine the impact of the government's decision to increase the Fair and Remunerative Price (FRP) for sugarcane-on-sugarcane farmers. Evaluate the significance of FRP in guaranteeing fair returns to farmers and discuss its role in agricultural pricing mechanisms. (150 WORDS)

## 10. FARMERS REJECT CENTRE'S PROPOSAL ON MSP ON FIVE CROPS

### SOURCE: DOWN TO EARTH

**Why in news:**

In the recent talks between the Central government and protesting farmers, a proposal for crop diversification in Punjab was introduced.

The proposal aimed to address concerns related to water usage and environmental degradation by encouraging the cultivation of alternative crops.

However, despite its innovative nature, farmers rejected the proposal, signaling a continuation of the 'Dilli Chalo' protest.

This rejection prompts a closer examination of the reasons behind pushing for crop diversification, challenges faced, procurement patterns, and recommendations for addressing these issues.

### Reasons for Pushing Crop Diversification:

- **Water Usage Concerns:** Punjab's heavy reliance on rice and wheat cultivation has raised worries about excessive water consumption and groundwater depletion.
- **Environmental Degradation:** The proposal aims to diversify crops to reduce water usage and mitigate environmental degradation associated with monoculture.

### Challenges in Crop Diversification:

- **Limited Results:** Previous attempts at crop diversification have yielded limited results,

with declines in areas under cotton and maize cultivation.

- **Market Prices and Disposal Mechanisms:** Challenges persist in areas like pulse cultivation, with issues related to market prices and disposal mechanisms highlighted by the Commission for Agricultural Costs and Prices (CACP).

### Procurement Patterns and Challenges:

- **Key Procurement Agencies:** The Food Corporation of India (FCI), National Agricultural Cooperative Marketing Federation of India Ltd (NAFED), and the Cotton Corporation of India (CCI) play crucial roles in procurement.
- **Low Cotton Procurement:** While cotton procurement has slightly increased in Punjab, it remains low compared to other states.
- **Challenges in Pulse Procurement:** NAFED faces challenges in pulse procurement, including stock disposal below MSP and disruptions in market prices.

### Recommendations for Addressing Challenges:

- **Alternative Disposal Mechanisms:** The CACP suggests exploring alternative disposal mechanisms, such as distributing pulses to households in aspirational districts, to enhance nutrition without impacting market prices.
- **Stock Disposal Challenges:** Addressing challenges in stock disposal is essential to prevent market disruptions and ensure fair prices for farmers.

### Improving Crop Diversification in India:

- **Identifying Suitable Crops:** India should identify crops and varieties suitable for diverse environments and farmers' preferences.
- **Skill Development Policies:** Implement skill development policies to promote the cultivation of identified crops among rural livelihoods.
- **Research Initiatives:** Research institutes like ICAR should conduct further research



on crop diversification to identify viable options.

- **MSP for Alternative Crops:** The government should procure crops, other than wheat and rice, at Minimum Support Prices.
- **Reducing Agricultural Emissions:** Implement measures such as smarter livestock handling, technology-enabled monitoring of fertilizer application, and more efficient agricultural techniques to reduce agricultural emissions.

## V. INDUSTRY AND INDUSTRIAL POLICIES

### 11. NEW SCHEME FOR BIO-MANUFACTURING, BIO-FOUNDRY ON THE CARDS

#### SOURCE: THE HINDU

##### Why in news:

Finance Minister Nirmala Sitharaman announced a new scheme for bio-manufacturing and bio-foundry in the interim Budget speech.

##### Objectives:

- Aimed at promoting environment-friendly alternatives like biodegradable polymers, bioplastics, biopharmaceuticals, and bio-Agri-inputs.

##### Economic Contribution:

- Aims to boost the bio-economy's contribution to the Indian economy to \$300 billion by 2030 and \$1 trillion by 2047.
- This represents a significant increase in value from current levels.

##### Role in Sustainability:

- Bio-based products play a crucial role in India's sustainability and green economy targets.

##### Focus on Bio-Manufacturing:

- Emphasis on investing in bio-manufacturing to enhance the bio-science sector's skills and capabilities.

##### Budget Allocation:

- Total allocation for the Department of Biotechnology (DBT) reduced by 16% to ₹2,251.52 crore.
- Allocation for Biotechnology Industry Research Assistance Council (BIRAC) remains at ₹40 crore, despite higher actual expenditure in the previous year.

##### Transformative Impact:

- The new scheme aims to shift manufacturing practices from consumptive to regenerative principles.

## VI. PRELIMS POINTERS IN NEWS

### 12. InTranSE PROGRAM

#### SOURCE: TIMES OF INDIA

##### Why in news:

During the "Digital India FutureLABS Summit 2024," Held at IIIT-Delhi three Indigenous Technologies – Thermal camera, CMOS camera, and Fleet Management System – developed by CDAC Thiruvananthapuram under InTranSE program were transferred to 12 Industries.

- **Significance:** These technologies aim to enhance traffic efficiency, minimize problems, optimize infrastructure usage, provide traffic information to users, reduce travel time, and improve safety and comfort for commuters.

##### About InTranSE Program:

- **Revolutionary Initiative:** The Intelligent Transportation System Endeavor (InTranSE) is a collaborative research and development program aimed at transforming transportation systems.
- **Ministry Initiative:** Launched by the Ministry of Electronics & IT (MeitY), it aims to synergize advancements in Intelligent Transportation Systems (ITS).
- **Academic and R&D Collaboration:** Premier academic institutes like IIT, IISc, IIM, and R&D centers like CDAC are brought together under this program.

- **Phase-I:** From 2009-2012, Phase-I witnessed collaborative efforts leading to the development, implementation, and demonstration of ITS products and solutions.
- **Phase-II:** The program continued from 2019-2021, focusing on R&D projects collaboratively with leading institutes like IIT Bombay, IIT Madras, IISc Bangalore, and CDAC Thiruvananthapuram.

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## GEOGRAPHY

### I. GEOLOGICAL PHENOMENON

#### 1. THAWING ARCTIC PERMAFROST COULD RELEASE RADIOACTIVE, CANCER-CAUSING RADON

**SOURCE: LIVESCIENCE**

**Why in news:**

Scientists are raising concerns about the thawing permafrost in the Arctic, warning that it could release radon, a radioactive gas with potential cancer-causing effects. Understanding permafrost and the risks associated with radon is crucial in

addressing the environmental and health implications of this phenomenon.

**Permafrost: Frozen Ground Across the Arctic**

**Definition:**

- Ground frozen continuously for at least two years, ranging from soil to sediment to rock.
- Extends from a few feet to over a mile beneath the earth's surface, covering regions like the Arctic tundra.



**Global Distribution:**

- Found on land and below the ocean floor.
- Common in high mountain regions and Earth's higher latitudes near the North and South Poles.
- Predominantly in far northern areas of the Northern Hemisphere, including Siberia, Alaska, Canadian Arctic, Greenland, and the Tibetan Plateau.

**Composition:**

- Combination of soil, rocks, and sand held together by ice.
- Permafrost contains organic carbon from dead plants, which persists due to the cold.
- Active layer thaws during summer and freezes in the fall.

**Radon: Radioactive Gas and Health Risks**

**Nature and Formation:**

- Radioactive gas formed naturally when uranium, thorium, or radium break down in rocks, soil, and groundwater.
- Inert, colourless, and odourless gas.

**Distribution:**

- Usually exists at low levels outdoors but can accumulate in poorly ventilated areas like underground mines.
- Enters homes through cracks, holes, and soil rich in uranium, thorium, and radium.

### Health Risks:

- Inhaled particles can damage DNA, potentially causing lung cancer.
- Second-most important cause of lung cancer after smoking, leading among non-smokers.

### Prevalence in Homes:

- Radon levels may be higher in well-insulated, tightly sealed homes.
- Accumulates in areas lacking ventilation, posing health risks to occupants.

### UPSC MAINS QUESTION

Q. Discuss the environmental and health implications of thawing permafrost in the Arctic, focusing on the release of radon gas. (150 WORDS)

## II. PRELIMS POINTERS IN NEWS

### 2. FLOODPLAIN

#### SOURCE: INDIANEXPRESS

#### Why in news:

The high-level committee for Yamuna's rejuvenation has prioritized the demarcation of the floodplain as a crucial step towards river restoration.



### Floodplain: Definition and Composition

#### Definition:

- Generally flat land adjacent to a river or stream, subject to periodic inundation.
- Composed of unconsolidated sedimentary deposits (alluvium) deposited by the river over time.

#### Components:

- Floodplain comprises the floodway, the main river channel, and the flood fringe, the land beyond the channel to the valley wall.
- Floodways can be seasonal, while flood fringes are areas prone to occasional flooding.

### Formation of Floodplains: Erosion and Deposition

#### Erosion:

- Meandering rivers erode their banks, creating a wider flat area along the river's sides.
- River floods, caused by heavy rainfall or ice melting, further shape floodplains by inundating the surrounding land.

#### Deposition (Aggradation):

- Floodwaters lose velocity as they move from the floodway to the fringe, depositing sediment acquired from erosion upstream.
- Consistently flooded areas build up sediment over time, forming fluvial terraces along the riverbanks.

### Importance of Floodplains: Ecological and Agricultural Significance

#### Ecological Importance:

- Floodplain sediment deposition enriches soil fertility, making it conducive for agriculture.
- Rich in nutrients like potash, phosphoric acid, and lime, floodplain soil supports diverse vegetation and wildlife.

#### Agricultural Significance:

- Alluvial soil deposited in floodplains is highly fertile, supporting robust crop yields.



- Floodplains serve as vital agricultural areas, contributing to food security and rural livelihoods.

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## HISTORY

### I. PRELIMS POINTERS IN NEWS

#### MARTAND SUN TEMPLE

##### SOURCE: DOWN TO EARTH

Why in news:

Members of an obscure Hindutva group forcefully entered the Archaeological Survey of India (ASI)-protected Martand Sun Temple.

The ASI, under the Ministry of Culture, is tasked with archaeological research and safeguarding the nation's cultural heritage.



#### About Martand Sun Temple:

- Located near Anantnag in Kashmir, the Martand Sun Temple is a Hindu temple devoted to the Sun God, constructed around the 8th century CE by King Lalitaditya Muktapida.
- Blending Kashmiri, Gupta, Chinese, Gandhara, Roman, and Greek architectural styles, the temple stands atop a plateau, constructed entirely from stone, covering 32,000 square feet.
- Features 86 fluted columns in a large courtyard connected to the main shrine, designed to capture the Sun's rays on the idol during sunrise and sunset.
- The central shrine, or vimana, reaches around 60 feet, adorned with intricate carvings depicting various Hindu deities. Additionally, 84 smaller shrines surround the main temple.

### 2. SUBIKA PAINTINGS

##### SOURCE: INDIAN EXPRESS

Why in news:

Despite Manipur's rich cultural heritage, the traditional Subika Paintings are facing extinction due to neglect, posing a threat to the cultural history of the Meitei community.



## About Subika Paintings:

- **Cultural Link:** Subika Paintings are intricately linked to the Meitei community's cultural history in Manipur.
- **Surviving Manuscripts:** The art form survives through six manuscripts: Subika, Subika Achouba, Subika Laishaba, Subika Choudit, Subika Cheithil, and Thengrakhel Subika.
- **Historical Roots:** While not explicitly mentioned in the royal chronicle, Cheitharol Kumbaba, experts suggest the existence of Subika paintings since the 18th or 19th century.

## Key Points about Subika Laishaba:

- **Cultural Composition:** Subika Laishaba's paintings compose cultural motifs influenced by pre-existing features and cultural worldviews.
- **Authentic Tradition:** It represents a direct and authentic continuation of Meitei cultural tradition through visual images.
- **Visual Language:** The illustrations use visual elements like lines, shapes, forms, colors, and patterns to convey cultural significance, meaning, and values.
- **Material and Preparation:** Visual images are painted on handmade paper, prepared indigenously using materials like handmade paper or tree barks.

### 3. GIANT LEAP FOR KALARIPAYATTU

#### SOURCE: THE HINDU

#### Why in news:

In 2021, the inclusion of Kalaripayattu, a southern Indian martial art, in the Khelo India games sparked increased interest, particularly among boys and girls in Haryana.

#### About Kalaripayattu:

- **Ancient Origin:** Traces its roots to ancient knowledge of the human body.
- **Historical Origin:** Originated in Kerala during 3rd century BC, practiced until 2nd

century AD, now found in Kerala and Tamil Nadu.

- **Training Space:** Practiced in a 'Kalari,' denoting a gymnasium or symbolic battlefield in Malayalam.
- **Historical Reference:** Tamil Sangam literature uses 'Kalari' for both battlefield and combat arena.
- **Historical Significance:** One of the world's oldest martial arts, considered the "Father of Modern Kung Fu."
- **Cultural Integration:** Integrates Hindu rituals, Ayurvedic medicinal practices, and elements from yoga and Nata dances.



#### Weapons and Categories:

Weapons in Kalaripayattu are classified into four groups:

- **Cutting, Slicing, Piercing:** Swords and daggers.
- **Pole Weapons:** Spears and axes.
- **Bludgeoning Instruments:** Sticks and maces.
- **Projectiles:** Arrows, discuses, catapults, boomerangs, and hand-thrown weapons.

### 4. 390-YEAR-OLD LAMP POST IN NALGONDA UNRAVELS TRADE LINKS OF TELANGANA

#### SOURCE: THE HINDU

#### Why in news:

A 390-year-old lamp post discovered in Nalgonda district, Telangana, sheds light on ancient trade connections in the region.

Unearthed by archaeologists along the River Krishna, the 20-foot tall pillar features hollows for lamps and a multi-lingual inscription, offering insights into the early medieval trade landscape.



### Key Findings:

- **Discovery:** The ancient lamp post was uncovered near a small flat-roofed structure in Mudimanikyam village, Nalgonda.
- **Uniqueness:** The lamp post is distinctive, as lamp posts are uncommon in the Deccan region but prevalent in temples along the west coast, such as Goa.
- **Inscription Details:** The multi-lingual inscription, a blend of Telugu and Tamil, dates the pillar to June 1635. It is dedicated to Kasi Viswanatha and likely served as a riverine trade route lighthouse due to its height.
- **Trade Significance:** Positioned on the riverbank, the lamp post offers evidence of riverine trade activities in the region during the Qutb Shahi rule. This is a notable finding as historical records often focus on land trade routes.
- **Geographical Context:** The village, located about 180 kilometers from Hyderabad, was part of the Qutb Shahi kingdom. The discovery aligns with European accounts, such as those by French diamond trader Tavernier, describing both land and riverine trade routes during the same period.

## 5. AJANTA & ELLORA NOW PART OF SWADESH DARSHAN SCHEME

### SOURCE- TIMES OF INDIA

#### Why in news:

Ministry of Tourism included Ajanta and Ellora caves in Chhatrapati Sambhajnagar in its Swadesh Darshan Scheme II.



#### Ajanta and Ellora Caves:

- Located near Aurangabad in Maharashtra, these rock-cut caves are UNESCO World Heritage sites.
- **Ajanta caves:** 29 in number, built between 2nd century BC and 6th century AD, primarily Buddhist.
- **Ellora caves:** 34 in number, constructed between 6th and 11th centuries AD, featuring Buddhist, Hindu, and Jain structures.
- **Ajanta:** Used as Buddhist retreats with meditation cells, assembly halls, and stupas.
- **Ellora:** Reflects Hindu, Jain, and Buddhist influences with diverse sculptures and architectural marvels like the Kailash Temple.

#### Swadesh Darshan Scheme:

- Launched in 2015, 100% centrally funded scheme for sustainable tourism development.
- Aims to develop tourism infrastructure across India, providing financial assistance to states, UTs, and central agencies.
- Operation & Maintenance handled by respective State Government/UT Administration.



## Swadesh Darshan 2.0 (SD2.0):

- Revamped version focusing on sustainable and responsible tourism development.
- Covers tourism infrastructure, services, human capital development, destination management, and promotion.
- Aims to increase private sector investment and PPP in tourism and hospitality, enhancing tourism assets' operation and maintenance.

## 6. DHOKRA SHILPKALA

### SOURCE- THE ECONOMIC TIMES

#### Why in news:

Chhattisgarh's Ocher Studio is helping to preserve India's 4,000-year-old craft Dhokra Shilpkala

#### About Dhokra Shilpkala:

- Originated from the Dhokra Damar tribes, traditional metal smiths in Central India.
- Flourished in Chhattisgarh, Jharkhand, West Bengal, and Odisha, integral to cultural and religious practices.



#### Technique and Process:

**Lost Wax Casting:** Unique metal casting method, cire perdue, defines Dhokra Shilpkala.

#### Artistry and Designs:

- **Rustic Charm:** Designs exude rustic charm, embracing organic aesthetics.
- **Inspiration:** Nature, mythology, and daily life inspire artisans, featuring animals, birds, deities, and tribal symbols.

- **Versatility:** Spans miniature figurines, jewelry, sculptures to functional items, showcasing diverse artistic expressions.

#### Issues:

- **Threats:** Urbanization and mechanized production endanger traditional artisans, risking the ancient craft's survival.

#### Lost Wax Method:

- **Clay Core:** Creation of a clay core as the sculpture's base.
- **Beeswax Layer:** Artisans coat the core with beeswax, hand-sculpting intricate designs.
- **Clay Mold:** Layers of clay form a mold around the wax pattern.
- **Heating:** Structure heated, melting wax to leave a cavity mirroring the sculpture.
- **Metal Pouring:** Molten brass and bronze poured into the cavity.
- **Solidifying:** After cooling, the clay mold breaks away, revealing the final metal casting.

## 7. BOCHASANWASI AKSHAR PURUSHOTTAM SWAMINARAYAN SANSTHA

### SOURCE: THE HINDU

#### Why in news:

Prime Minister will inaugurate the first Hindu temple in Abu Dhabi, highlighting the global presence and significance of BAPS in promoting Hindu values and spirituality.



#### About Bochasanwasi Akshar Purushottam Swaminarayan Sanstha (BAPS):

- **BAPS is a socio-spiritual Hindu faith rooted in the Vedas**, based on teachings by Bhagwan Swaminarayan (1781-1830 CE).

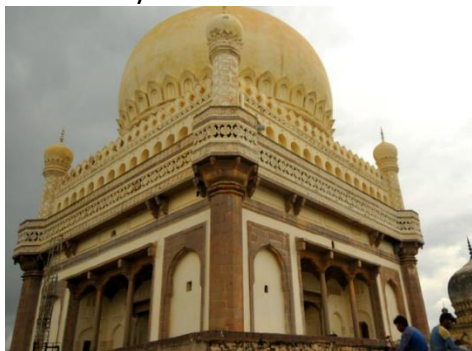
- Formally established in 1907 CE by Brahmaswarup Shastriji Maharaj.
- Emphasizes practical spirituality to address spiritual, moral, and social challenges.
- Followers abide by five lifetime vows: No Alcohol, No Addictions, No Adultery, No Meat, No Impurity of body and mind.
- Operates a global network of mandirs and centers for various activities.
- Focuses on education, women's development, and humanitarian efforts.
- Manages schools, hostels, and community development activities for women.
- Engages in humanitarian services during natural calamities, operates primary schools, students' hostels, hospitals, diagnostic camps, anti-addiction drives, environment-awareness programs, tribal uplift, and literacy campaigns.
- Holds Consultative Status with the Economic and Social Council of the United Nations.

## 8. DIGITAL TWIN OF MOHAMMED QULI QUTB SHAH'S TOMB

### TOPIC: (GS1) MEDIEVAL HISTORY – SOURCE – THE HINDU

#### Why in news:

Hexagon, a reality technology company, recently unveiled a digital twin of Mohammed Quli Qutb Shah's tomb in Hyderabad.



#### Muhammad Quli Qutb Shah:

- **Parentage:** Born on April 4, 1565, Muhammad Quli Qutb Shah was the third

son of Ibrahim Quli Qutb Shah Wali and his Hindu mother Bhagirathi.

- **Literary Talent:** Beyond his administrative prowess, he showcased literary skills, composing verses in Persian, Telugu, and Urdu.

#### Contemporaries of Quli Qutb Shah:

- **Akbar (1556–1605):** Mughal Emperor known for religious tolerance and administrative reforms.
- **Rani Durgavati (1550–1564):** Queen renowned for bravery against Mughal expansion.
- **Maharana Pratap (1572–1597):** Rajput ruler famous for defiance against Akbar.
- **Chand Bibi (1550–1599):** Regent known for defending against Mughal forces.
- **Guru Ram Das (1574–1581):** Sikh Guru who contributed to Sikhism's growth.
- **Sher Shah Suri (1540–1545):** Founder of the Sur Empire known for administrative reforms.

#### Key Accomplishments:

##### Reign and Accomplishments:

- Ascended to the throne in 1580, ruling for 31 years.
- Successfully led military campaigns, maintaining stability despite rebellions.

##### Foundation of Hyderabad:

- Initiated urban planning to address overcrowding, laying the foundation of Hyderabad in 1591.
- Meticulously planned city layout with landmarks like Charminar, Mecca Masjid, and Badshahi Ashurkhana.

##### Architectural Marvels and City Planning:

- Charminar symbolized the city's grandeur under Muhammad Quli's patronage.
- Hyderabad's gridiron layout showcased his vision for the city's development.

##### Support for Arts and Literature:

- Flourishing calligraphy and literary contributions during his rule.

- Muhammad Quli, a poet himself, composed poetry in Persian and Telugu under the pen name "Taraqqi."

### Medical and Literary Contributions:

- Hyderabad became an intellectual hub for medical and literary pursuits.
- Muhammad Quli's legacy is preserved in institutions like the Salar Jung Museum, reflecting his cultural contributions.

### Legacy and Influence:

#### Cultural Integration:

- Muhammad Quli's reign epitomized cultural fusion, blending Hindu and Islamic traditions in the Deccan region.
- Symbolized unity and harmony, showcasing an inclusive ethos in administration.

## 9. HASTSAL MINAR

### SOURCE – INDIAN EXPRESS

#### Why in news:

Efforts are underway to uncover the secrets of Hastsal Minar, emphasizing heritage preservation in the modern era.



#### About Hastsal Minar:

- **Location:** Situated in a small village in western Delhi.
- Construction completed in 1634 under Mughal emperor Shah Jahan's reign.
- Also known as Mini Qutab Minar, Hastsal Ki Laat, and Kaushal Minar among locals.

#### Architecture:

- Constructed with lakhori bricks and clad in red sandstone.

- Stands 17 meters tall (five storeys) on a square platform with an octagonal body.
- Features a staircase leading to a domed Chhatri pavilion at the top.
- Three storeys with reducing diameter, accessible via a narrow staircase.

#### Historical Significance:

- Utilized by Shah Jahan as one of his hunting lodges during the 17th century.

#### Present Condition:

- Recognized as Grade A in heritage value in 2018.
- Granted permission for conservation under Phase IV of the Delhi government's project to protect lesser-known monuments.

## 10. KOTRAVAI SCULPTURE

### SOURCE: INDIAN EXPRESS

#### Why in news:

Archaeologists recently uncovered an eighth-century Kotravai sculpture in Ulundurpet, Tamil Nadu, dating back to the Pallava period. This discovery sheds light on the rich cultural and artistic heritage of the Pallava Dynasty.



#### About Pallava Dynasty:

- Flourished in South India from the 3rd to 9th Centuries, ruling northern Tamil Nadu, parts of Karnataka, Andhra Pradesh, and Telangana.
- Kanchipuram served as their capital, showcasing their prominence in the region.
- The Pallavas were patrons of Buddhism, Jainism, and the Brahminical faith, contributing significantly to music, painting, and literature.

## Origin and Expansion:

- Originally feudatories of Andhra Satavahanas, the Pallavas gained autonomy and moved southward.
- Established Kanchipuram as their capital in the 4th century CE, under the rule of Mahendravarman I and Narasimhavarman I.

## Architectural Contributions:

- Renowned for their contribution to Dravidian architecture, transitioning from rock-cut to stone temples.
- Mahabalipuram became a center of art and architecture under Pallava rule.
- Key temples like Kailasanatha and Shore Temple were built, exemplifying their architectural prowess.

## Religion and Conflicts:

- Pallavas embraced Shaivism, aligning with local Dravidian practices.
- Engaged in continuous conflicts with Chalukyas in the north and Tamil kingdoms of Chola and Pandyas in the south.

## Decline:

- The rise of Rashtrakutas marked the decline of the Pallava Dynasty.
- Overpowered by Chola King Vijayalaya in 897 AD, ending their reign.

## 11. ATTUKAL PONGALA CELEBRATED WITH POMP BY WOMEN IN KERALA

### SOURCE: TIMES OF INDIA

#### Why in news:

Attukal Pongala festival is celebrated by women at Attukal Bhagavathy temple in Thiruvananthapuram, Kerala.



- The temple is known as 'Women's Sabarimala' due to the majority of female devotees.
- Rituals include lighting the main hearth, called 'Pandara Aduppu', followed by cooking ritual offerings by women.
- **Attukal Bhagavathy, the presiding deity, is believed to be the divine form of Kannaki from the Tamil epic Silappadhikaram.**
- According to the epic, Kannaki avenged her husband's injustice in Madurai and took rest at Attukal in Kerala.
- **Silappadhikaram is an ancient Tamil epic describing the tragic love story of Kannaki and her husband Kovalan, attributed to Illango Adigal.**
- The Attukal Bhagavathy Temple is a Hindu shrine in Kerala, dedicated to the supreme mother, often referred to as Kannaki.
- **The Attukal Pongala festival is recognized by the Guinness Book of World Records for the largest gathering of women for a religious activity.**
- The festival lasts 10 days, falling in February-March, starting with rituals like Kappu Kettu and Kudiyrantha ceremony.
- **The main attraction is on the 9th day, 'Pooram day', where Pongala/Naivedyam, a special rice offering, is cooked in small pots in the open to please Goddess Kannaki.**

## 12. TELANGANA: 1,300-YEAR-OLD TEMPLES FROM BADAMI CHALUKYAN PERIOD DISCOVERED

### SOURCE: NDTV

#### Why in news:

The recent archaeological discovery of Mudimanikyam in Telangana, previously believed to be distant from the Badami Chalukya kingdom, has expanded historical understanding.

**Thought to be 500 km away from Badami in Karnataka, Mudimanikyam is now recognized as part of the Badami Chalukya kingdom.**

## Key Findings of the Recent Discovery: Mudimanikyam's Integration into Badami Chalukya Kingdom:

- Initially considered separate, Mudimanikyam in Telangana is revealed to be part of the Badami Chalukya kingdom.
- The discovery challenges previous geographical and historical assumptions, highlighting the interconnectedness of ancient kingdoms.

## Temple Complexes and Inscriptions:

- Unearthed temples and inscriptions, dating between 543 AD and 750 AD, provide valuable insights into the religious and cultural practices of the Badami Chalukya period.
- The presence of temples along the riverbank and within the Mudimanikyam village underscores the region's significance in the kingdom's religious landscape.



## Religious Diversity and Cosmopolitanism:

- The temples reflect religious diversity, accommodating deities from Hinduism, Buddhism, and Jainism.
- This showcases the cosmopolitan nature of the Deccan region during the Badami Chalukya period, where different religious traditions coexisted and influenced each other.

## Role of Archaeologists:

- Archaeologists M. A. Srinivasan and S. Ashok Kumar made these significant discoveries while conducting research on the Krishna River basin.
- Their meticulous excavation work has unveiled previously unknown facets of the region's history and heritage.

## Overview of Badami Chalukya Kingdom:

### Foundation and Capital:

- Established around the 6th century by Pulakeshin I, with Badami as its capital in present-day Karnataka.

### Architecture:

- Renowned for rock-cut cave temples, exemplified by the Badami Cave Temples, reflecting Hindu, Jain, and Buddhist influences.

### Dynastic Rulers:

- Notable rulers include Pulakeshin II, Vikramaditya I, and Vinayaditya, who contributed to the kingdom's expansion and prosperity.

### Administration and Governance:

- Monarchical governance with administrative divisions called Rashtras, assisted by officials like maharajas and Rajadhirajas.

### Military Achievements:

- Known for military prowess, successfully resisting invasions and defending against external threats.

### Trade and Economy:

- Strategic location facilitated trade, contributing to agricultural and economic prosperity.

### Decline and Legacy:

- Declined in the late 8th century due to internal conflicts and external pressures, eventually succumbing to the Rashtrakutas.
- Despite decline, left a lasting legacy in art, architecture, and administration in the Deccan region.

## 13. GURU RAVIDAS

### SOURCE: ECONOMIC TIMES

#### Why in news:

Prime Minister Narendra Modi highlighted that India's rapid development aligns with the teachings of Guru Ravidas, showcasing the

ongoing relevance and influence of the saint's principles in shaping the nation's path.

#### About Guru Ravidas:

- **Guru Ravidas (1377-1527 C.E.)** was a revered saint and key figure in the Bhakti movement, known for his devotional songs and verses.
- Born in Seer Govardhanpur, Uttar Pradesh, he is also known as Raidas, Rohidas, and Ruhidas.
- His birthplace, Shri Guru Ravidas Janam Asthan, is a significant pilgrimage site.

#### Teachings and Contributions:

- Despite being born into poverty, Guru Ravidas emphasized human rights, equality, and social justice.
- **Disciple of Brahmin bhakti poet Ramananda, he focused on the nirguna form of supreme beings, opposing saguna forms with attributes.**
- Advocated gender equality, abolition of the caste system, and opposed untouchability.
- **A symbol of spiritual freedom and a well-known poet with 41 devotional songs included in Guru Granth Sahib.**

#### Legacy and Influence:

- Guru Ravidas influenced the Ravidassia religion, with followers treating him as a saint comparable to other gurus.
- **Meera Bai, a revered figure, considered him her spiritual Guru.**
- His teachings continue to inspire and form the basis of Ravidassia beliefs.

#### Guru Ravidas Jayanti:

- **Celebrated as a Hindu festival, Guru Ravidas Jayanti marks the birth anniversary of Guru Ravidas.**
- His messages of equality, justice, and spiritual freedom resonate in the celebration, emphasizing his enduring impact on Indian spiritual and social consciousness.

## 14. CENTRE SANCTIONS NEW RAILWAY LINE BETWEEN PURI AND KONARK

#### **SOURCE: THE HINDU**

Why in news:

Why in news:

**The Union government greenlights a 32-kilometer railway line linking Puri and Konark, renowned for the Shree Jagannath Temple and Sun Temple, with ₹492 crore allocated for construction.**

The new railway line, approved by Union Railway Minister Ashwini Vaishnaw, will boast trains equipped with an all-weather glass ceiling, enhancing the travel experience between the temple towns.

#### **About Shree Jagannath Temple**

Believed to be constructed in the 12th century by King Anatarman Chodaganga Deva of the Eastern Ganga Dynasty. Referred to as the "White Pagoda" and holds significance in the Char Dham pilgrimages.



- **Spiritual Significance:** Known as 'Yamanika Tirtha,' where the power of the god of death, Yama, is believed to be nullified due to Lord Jagannath's presence.
- **Architectural Marvel:** Boasts unique architecture, featuring a massive compound wall and an extensive complex with towers, halls, and shrines.
- **Annual Rath Yatra Festival:** Main attraction is the Rath Yatra festival, where deities Lord Jagannath, Lord Balabhadra, and Devi Subhadra are grandly processed on chariots.



- **Mahaprasad Tradition:** Renowned for Mahaprasad, a unique food offering prepared in the temple kitchen and distributed among devotees.

### About Sun Temple:

Declared a UNESCO World Heritage Site in 1984, recognizing its cultural and historical significance.



- **Currency Note Recognition:** Featured on the reverse side of the Rs. 10 denominations note, making it a symbol of cultural pride.
- **Chandrabhaga Mela:** Hosts the Chandrabhaga Mela in February, drawing Hindu pilgrims to the sacred site.
- **Golden Triangle of Odisha:** Part of the Golden Triangle of Odisha along with Puri and Bhubaneswar, forming a crucial pilgrimage route for Hindus.
- **Architectural Style:** Represents the Kalinga Style of Architecture, showcasing the artistic heritage of the region.
- **Alignment and Materials:** Faces east to receive early sun rays and is constructed using Khondalite rocks, a type of metamorphic rock.
- **Symbolic Sundials:** Features 12 wheels symbolizing sundials, aiding in precise time determination.
- **Relocation of Aruna Stambh:** In the 18th century, a monolith named "Aruna Stambh" was moved to Puri's Jagannath Temple, adding to its historical journey.
- **Destruction and Preservation:** Faced destruction due to natural elements and war activities by Muslim invaders. The British closed and filled the assembly hall in 1904, preserving it from further collapse.

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## ENVIRONMENT

### I. BIODIVERSITY AND CONSERVATION

#### 1. ERAVIKULAM NATIONAL PARK

##### SOURCE: DOWN TO EARTH

##### Why in news:

The Eravikulam National Park (ENP), the natural habitat of the Nilgiri tahr, will be closed for the calving season of the species from February 1 to March 31.

##### Eravikulam National Park (ENP)

- **Situated along the Western Ghats in the Idukki district of Kerala.**
- Declared as a National Park in 1978.
- Spans an area of 97 sq.km.
- **Houses the highest peak in south India, Anamudi (2695 meters).**

## Flora:

- Dominated by rolling grasslands with patches of shola forests.
- Notable flora includes Actinodaphne bourdillonii, Microtropis ramiflora, Pittosporum tetraspermium, and more.
- Rich in balsams and orchids, including the once thought extinct Brachycorythis wightii.

## Fauna:

- Home to diverse wildlife including Nilgiri Tahr, Gaur, Sloth Bear, Nilgiri Langur, Tiger, Leopard, Giant Squirrel, and wild dog.
- Half of the world's Nilgiri Tahr population resides here.
- Hosts the Atlas moth, the largest of its kind globally, along with 140 bird species and over 100 butterfly varieties.



### Nilgiri Tahr: Key Facts

- Endangered mountain ungulate endemic to the southern Western Ghats.
- **Scientific Name:** Nilgiritragus hylocrius.
- Known for climbing steep cliffs, earning the nickname, Mountain Monarch.
- **State animal of Tamil Nadu.**
- Primarily found in Eravikulam National Park, Kerala.

### Habitat and Features:

- Inhabit open montane grassland habitats at elevations of 1200 to 2600 m in the Southwestern Ghats.
- **Stocky body with short, coarse fur and curved horns.**
- **Males have larger horns, reaching up to 40 cm.**
- Adult males develop a light grey area or 'saddle' on their backs, hence called 'saddlebacks'.

- Coat colour is short grey-brown or dark.

### Conservation Status:

- IUCN Red List: Endangered.
- Protected under the Wildlife (Protection) Act of India, 1972: Schedule I.

## 2. 5 MORE WETLANDS GET RAMSAR TAG, TAKES INDIA TO 4TH POSITION GLOBALLY

### **SOURCE: INDIAN EXPRESS**

#### Why in news:

The Union Environment Minister recently announced the inclusion of five new Indian wetlands in the prestigious list of Ramsar Convention sites, highlighting their international importance.

This recognition signifies India's commitment to wetland conservation and global environmental responsibilities.

#### New Ramsar Sites:

#### **Ankasamudra Bird Conservation Reserve (Karnataka):**

- Human-made Village Irrigation Tank with a centuries-old history.
- Ecologically vital wetland rich in biodiversity.
- Supports over 1% of the biogeographic population of Painted Stork and Black-headed Ibis.

#### **Aghanashini Estuary (Karnataka):**

- Formed at the confluence of Aghanashini River with the Arabian Sea.
- Brackish water provides diverse ecosystem services, including flood mitigation, biodiversity conservation, and livelihood support.
- Supports traditional fish farming, bivalve shell collection, and salt production.

#### **Magadi Kere Conservation Reserve (Karnataka):**

- Human-made wetland designed for rainwater storage and irrigation.



- Harbors two vulnerable species (Common pochard and River tern) and four near-threatened species.
- One of the largest wintering grounds for the Bar-headed goose.



### Karaivetti Bird Sanctuary (Tamil Nadu):

- One of Tamil Nadu's largest inland wetlands.
- Significant source of groundwater recharge for the region.

### Longwood Shola Reserve Forest (Tamil Nadu):

- Named after the Tamil word "Solai," signifying a tropical rainforest.
- Found in the upper reaches of various hills in Tamil Nadu.
- Critical habitats for globally endangered Black-chinned Nilgiri Laughing thrush and Nilgiri Blue Robin, along with the vulnerable Nilgiri Wood-pigeon.

## 3. THANTHAI PERIYAR WILDLIFE SANCTUARY

### SOURCE: THE HINDU

#### Why in news:

The Tamil Nadu government has declared 80,114.80 hectares of reserve forests in Bargur Hills, Erode district, as the Thanthai Periyar Wildlife Sanctuary, marking a significant step towards conservation.

#### About Thanthai Periyar Wildlife Sanctuary:

- **Ecological Importance:** The sanctuary is part of a vital corridor connecting the Sathyamangalam Tiger Reserve to the Male Mahadeshwara Hills Tiger Reserve and the Cauvery Wildlife Sanctuary,

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essential for maintaining a viable tiger population.

- **Biodiversity Hotspot:** Situated in the Eastern Ghats, merging with the Western Ghats at the Nilgiris, the sanctuary boasts diverse flora and fauna, fostering various life forms.
- **Interconnected Landscapes:** Interconnected with Kollegal forests in Karnataka and the Nilgiris, it forms one of the most diverse habitats in the region, recognized as a tiger corridor by the National Tiger Conservation Authority.
- **Water Catchment Area:** The sanctuary's catchment area feeds the Palar River, a tributary of the Cauvery River, vital for agriculture and local livelihoods.
- **Cultural Significance:** Apart from its ecological importance, the sanctuary holds cultural and historical significance for tribal and local communities, who rely on its ecosystems for livelihoods and traditional practices.

## 4. MADAGASCAR RESTORATION PROJECT

### SOURCE: DOWN TO EARTH

#### Why in news:

A six-year project aims to reintroduce giant tortoises to Madagascar, potentially restoring megaherbivores to the island after 600 years.

**Significance:** This reintroduction could have significant ecological impacts, contributing to habitat restoration and biodiversity conservation in Madagascar.





## About Aldabra Giant Tortoise:

- **Second Largest Species:** The Aldabra giant tortoise is the second-largest land tortoise species globally, after the Galapagos giant tortoise.
- **Long Lifespan:** With a lifespan of up to 100 years, these tortoises have a rich evolutionary history.
- **Origin:** Descendants of Aldabrachelys abrupta, they once inhabited Madagascar for millions of years before migrating to the Seychelles around four million years ago.

## Habitat:

- **Terrestrial Habitats:** Aldabra giant tortoises inhabit various habitats, including scrub forests, mangrove swamps, and coastal dunes.
- **Grasslands:** The largest populations are found in grasslands called "platins," where they contribute to the creation of unique habitat structures known as "tortoise turf."

## Conservation Status:

- **IUCN Status:** Classified as Vulnerable due to habitat loss, invasive species, and illegal trade.
- **CITES Listing:** Included in Appendix II, highlighting the need for international cooperation in regulating trade to ensure their conservation.

## 5. SEPAHIJALA WILDLIFE SANCTUARY

### SOURCE: DOWN TO EARTH

#### Why in news:

The Sepahijala Wildlife Sanctuary in Tripura has recently seen a delightful addition to its diverse ecosystem.

A new batch of animals, including majestic Royal Bengal tigers, leopards, golden pigeons, silver pigeons, peafowls, and hill mynas, has found a home in this sanctuary.

#### Sepahijala Wildlife Sanctuary

#### Location and History:

- Situated approximately 25 km from Agartala, Tripura.

- Established in 1972 as the Sepahijala bio-complex for biodiversity conservation.
- Evolved to include a botanical garden, deer park, and zoo, officially becoming Sepahijala Wildlife Sanctuary in 1987.

#### Geographical Features:

- Spreads across 18.5 sq. km, housing migratory birds and various animals.
- Divided into five sections: carnivore, primate, ungulate, reptile, and aviary sections.
- Home to natural lakes Abasarika and Amrit Sagar.

#### Flora and Fauna:

- Vegetation comprises moist deciduous forest with 456 plant species, bamboo, grasses, and medicinal plants.
- Diverse wildlife includes Rhesus macaque, Pigtailed macaque, Capped langur, Leopard, Clouded leopard, Jungle fowl, Civets, and Wild pig.
- Revival of the once-extinct crab-eating mongoose.
- Rich avian population with storks, Whistling teal, White ibis, and more.

## 6. KALASA-BANDURI PROJECT

### SOURCE- HINDUSTAN TIMES

#### Why in news:

The National Board for Wildlife deferred the decision on diverting forest land from Kali and Sahyadri tiger reserves for the project.

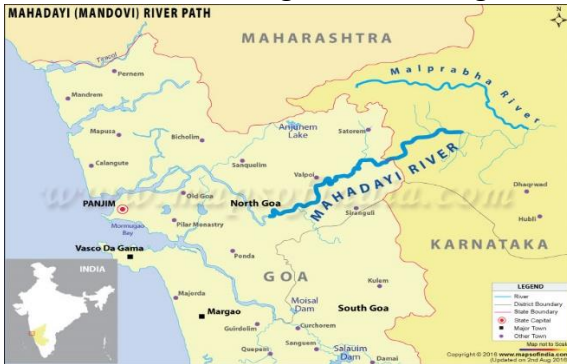
This decision indicates a cautious approach towards environmental impact assessment and wildlife conservation before approving large-scale infrastructural projects.

#### About Kalasa-Banduri Project

- **Purpose:** The project aims to construct dams and canal systems to divert water from the Mahadayi River in Goa to the Malaprabha River basin in Karnataka.
- **Objective:** It seeks to fulfill the drinking water needs of districts like Belagavi,

Dharwad, Bagalkot, and Gadag in Karnataka.

- **History:** Proposed in the 1980s, the project faced delays due to disputes between Karnataka, Goa, and Maharashtra.
- **Implementation:** Barrages are planned on Kalasa and Banduri streams, Mahadayi tributaries, to redirect water to Karnataka's drought-affected regions.



## Key Facts about Mahadayi River

- **Origin:** The river originates in the Western Ghats, specifically from the Bhimgad Wildlife Sanctuary in Belagavi district, Karnataka.
- **Course:** It traverses 35 km in Karnataka and 82 km in Goa before merging with the Arabian Sea at Panji.
- **Significance:** Mahadayi, also known as Mandovi in Goa, is vital for the water needs of both Karnataka and Goa.
- **Tributaries:** Major tributaries include Kalasa Nala, Banduri Nala, Surla Nala, among others.

## 7. WAYANAD ELEPHANT KILLS MAN

**SOURCE: INDIAN EXPRESS**

**Why in news:**

The recent incident of a radio-collared wild elephant causing a fatality in Wayanad has spotlighted the escalating human-animal conflict in Kerala.

The rise in attacks by wild animals, particularly elephants, tigers, bison, and wild boars, poses a growing threat, prompting locals to demand swift action from forest and revenue authorities.



## Rising Human-Animal Conflict in Kerala:

- Across the state, districts like Wayanad, Kannur, Palakkad, and Idukki are witnessing an alarming surge in human-animal conflicts.
- Government data for 2022-23 indicates a significant rise, with 8,873 reported wild animal attacks, involving elephants, tigers, wild boars, leopards, and bison.
- Crop loss due to animal raids has reached 20,957 incidents from 2017 to 2023, impacting Kerala's agriculture sector.

## Wayanad's Vulnerability:

- Wayanad, boasting a 36.48% forest cover, faces a critical situation, having lost 41 lives to elephant attacks and seven to tiger attacks over the past decade.
- The district's geographical location, connected to forested areas in Karnataka and Tamil Nadu, contributes to the movement of elephants and tigers across state borders.

## Factors Driving Conflict:

- **Decline in Forest Quality:** The cultivation of alien plants, like acacia, mangium, and eucalyptus for commercial purposes, has led to a decline in forest habitat quality. Invasive species further impede natural vegetation growth.
- **Changing Agricultural Practices:** Evolving agricultural methods have left farmlands unattended, attracting wildlife seeking alternative food sources, such as bananas and pineapples.
- **Human Activities:** Factors like waste disposal near forested areas, habitat fragmentation due to construction, and

increased human presence contribute to the conflict.

### Kerala's Mitigation Efforts:

- **Preventive Measures:** The state employs schemes for constructing elephant-proof trenches, stone walls, and solar-powered electric fencing to deter animals from entering human settlements.
- **Eco-Restoration Programs:** Kerala is engaged in eco-restoration initiatives and has schemes to acquire land from farmers for conversion into forestland.
- **Rapid Response Teams (RRTs):** Fifteen Rapid Response Teams, both permanent and temporary, have been established in conflict-prone areas, with plans for additional teams.
- **Financial Requests:** In 2022, Kerala sought Rs 620 crore from the Centre to address the crisis. However, the Centre urged the state to find its resources and develop innovative solutions.

## 8. KAWAL TIGER RESERVE

### SOURCE: DECCAN CHRONICLE

#### Why in news:

Forest authorities suspended six staff members for negligence in controlling teak smuggling within the reserve.

#### About Kawal Tiger Reserve:

##### Location:

- Situated in the north-eastern part of Telangana, bordering the Godavari River and Maharashtra.
- Forms part of the Deccan peninsula-central highlands.



#### Designation:

- Declared a Tiger Reserve by the Government of India in 2012.

#### Rivers:

- Acts as the catchment area for the Godavari and Kadam rivers, flowing southward.

#### Geographical Significance:

- Positioned at the southernmost point of the Central Indian Tiger Landscape.
- Connects with Tadoba-Andhari (Maharashtra) and Indravati (Chhattisgarh) tiger reserves.

#### Habitat:

- Encompasses diverse habitats like dense forests, grasslands, rivers, and water bodies.

#### Vegetation:

- Dominated by Southern Tropical Dry Deciduous Forest.
- Abundant in teak and bamboo, along with 673 recorded plant species including *Anogeissus latifolia*, *Mitragyna parviflora*, etc.

#### Fauna:

- Home to a variety of wildlife typical of the Deccan Plateau.
- Fauna includes nilgai, chousinga, chinkara, black buck, sambar, wild dog, wolf, tiger, leopard, and jungle cat.

## 9. WHY ARE HUMAN-WILDLIFE CONFLICTS ESCALATING IN KERALA?

### SOURCE: THE HINDU

#### Why in news:

Kerala has seen a steady rise in human-animal conflict in recent years. Attacks from wild animals not only pose a threat to life but have also wreaked havoc in the state's agriculture sector.

#### Scale of Human-Animal Conflict in Kerala:

- **Forest Coverage:** Kerala boasts nearly 30% forest cover, leading to close proximity between human settlements, agricultural plantations, and wildlife habitats.

- **Escalation:** A sharp rise in human-animal conflict incidents, resulting in over 600 casualties since 2015.
- **Forest Department's Study:** The State Forest department's study reveals conflicts in 1,004 areas, with over 48,000 incidents of crop damage between 2013-14 and 2018-19.



### Causes of Increase in Human-Wildlife Conflict:

- **Human Activities:** Increased cultivation around wildlife habitats, changing cropping patterns, and human movement during odd hours contribute to conflicts.
- **Conservation Efforts:** Population growth of elephants and tigers due to successful conservation efforts.
- **Habitat Issues:** Habitat depletion, fragmentation, invasive species, and monoculture adversely affecting plant biodiversity.

### Proposed Solutions and Challenges:

- **Effective Measures:** Elephant-proof trenches and solar fences are effective if properly maintained.
- **Forest Department's Proposals:** Proposals include hanging power fences and an eco-restoration policy to discourage animals from agricultural lands.

- **Technological Solutions:** Early warning systems utilizing drones are suggested but face limited implementation.

### Connection to Eco Sensitive Zone (ESZ) Norm:

- **ESZ as a Solution:** ESZ norm is suggested to reduce human-wildlife conflicts by creating protected zones around wildlife habitats.
- **Legislative Assembly's Stance:** Kerala's legislative assembly urges exemption from ESZ due to land scarcity and dense population.
- **Implementation Challenges:** Challenges arise due to the close proximity of people to wildlife habitats, making ESZ implementation complex.

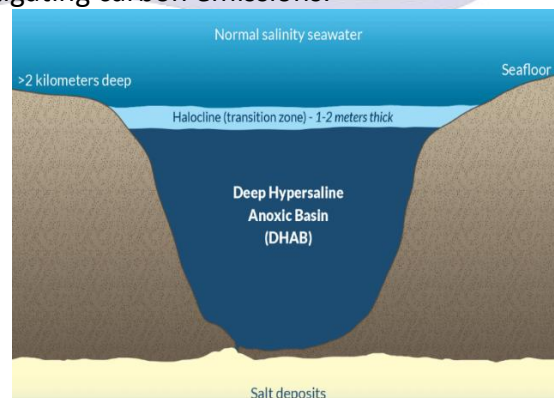
## II. POLLUTION

### 10. ANOXIC MARINE BASINS ARE AMONG THE BEST CANDIDATES FOR DEEP-SEA CARBON SEQUESTRATION

#### SOURCE: ECOMAGAZINE

#### Why in news:

Scientists propose anoxic marine basins as promising sites for large-scale carbon sequestration in the deep ocean, emphasizing their unique characteristics and potential for mitigating carbon emissions.



#### About Anoxic Marine Basins:

#### Oxygen Absence:

- Anoxic basins lack oxygen, forming a unique environment in the deep ocean.

#### Formation Factors:

- Permanent anoxic basins result from layered water columns shaped like a cup on the ocean floor.
- Layering arises from density variations due to salt concentration or temperature differences.

### Stratification Impact:

- Stratification minimizes circulation, allowing microorganisms to deplete oxygen.
- Water in anoxic basins is extremely stagnant, with mixing times spanning thousands of years.

### Geographical Characteristics:

- Varied in size, ranging from hundreds of meters to several kilometers across.
- Depths extend from 10 to 500 meters deeper than the surrounding seafloor.

### Biological Composition:

- Unable to support animal life, populated mainly by microbes and specialized fungi.
- Some microbes use nitrate for respiration, while others derive carbon from gases like carbon dioxide and methane.

### Toxic Chemicals and Salt Domes:

- Anoxic basins may contain toxic chemicals from geothermal activity or microbial activity.
- Presence of salt domes, large mounds of hardened salt, is observed in some basins.

### Methane Reservoirs and Mud Volcanoes:

- Some basins harbor methane and other gases beneath the seafloor.
- Methane can lead to the formation of mud volcanoes, causing sediment-filled water eruptions.

### UPSC MAINS QUESTION

Q. Examine the potential of anoxic marine basins for large-scale carbon sequestration in the deep ocean. Evaluate the feasibility of utilizing anoxic basins as carbon sinks, considering their geographical characteristics and associated risks. (150 WORDS)

## 11. ACID RAIN

### SOURCE: THE HINDU

#### Why in news:

Acid rain is a complex environmental issue stemming from multiple causes, primarily rooted in fossil fuel activities.

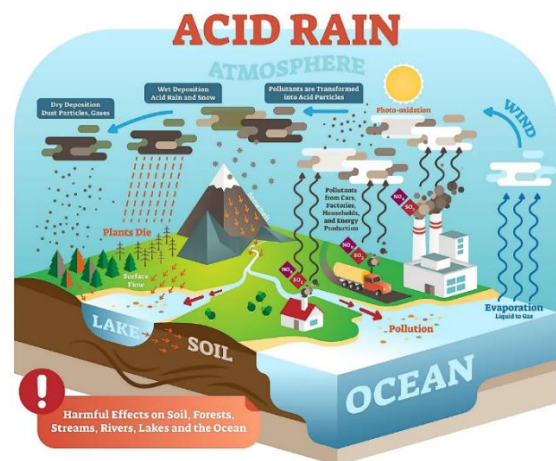
It encompasses any form of precipitation, such as rain, snow, fog, or hail, containing acidic components like sulfuric or nitric acid, with detrimental consequences for the environment.

#### Formation of Acid Rain:

Acid rain forms when sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) combine with water and oxygen in the atmosphere.

This results in the creation of sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) and nitric acid (HNO<sub>3</sub>), which dissolve in water droplets to form acid rain, snow, or fog.

The typical pH of acid rain is around 4.2-4.4, making it more acidic than normal rain with a pH of approximately 5.6.



#### Causes of Acid Rain:

##### Fossil Fuel Combustion:

- Burning fossil fuels, especially those rich in sulphur, releases sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>).
- Vehicles, industrial processes, and power plants contribute to these emissions.

##### Natural Sources:

- Volcanic eruptions and lightning also release sulphur dioxide and nitrogen oxides.

## Air Pollution:

- SO<sub>2</sub> and NO<sub>x</sub> undergo chemical reactions in the atmosphere, forming sulfuric and nitric acids.
- Combined with water vapor, they result in acid rain during precipitation.

## Forms of Acid Rain/Deposition:

- **Wet Deposition:** Acidic acids fall to the ground mixed with rain, snow, fog, or hail.
- **Dry Deposition:** Acidic particles and gases deposit without moisture, affecting surfaces like water bodies, vegetation, and buildings.

## Impacts of Acid Rain:

- **Aquatic Life:** Disrupts reproductive patterns of aquatic species, leading to declines in fish populations.
- **Marine Water and Species Distribution:** Alters marine pH, affecting the distribution and survival of organisms, particularly shell-forming species.
- **Physical Infrastructure:** Causes deterioration and discoloration of structures and monuments, like the Taj Mahal, impacting architectural integrity.

## Acid Rain Mitigation Measures:

### Flue-Gas Desulphurisation:

- Implemented in coal power plants to reduce sulphur dioxide emissions by over 90%.

### Graded Response Action Plan (GRAP):

- Emergency measures to prevent further air quality deterioration, including vehicle regulations and air quality monitoring.

### International Cooperation:

- Initiatives like the Acid Deposition Monitoring Network in East Asia (EANET) foster global collaboration in monitoring and addressing acid deposition.

### Way Forward:

- Implement sustainable practices, promoting renewable energy sources.
- Enforce stringent emissions regulations.
- Foster international cooperation to combat acid rain and climate change.

- Invest in innovative technologies to address environmental challenges.

## UPSC MAINS QUESTION

Q. Examine the multifaceted environmental challenges posed by acid rain. Discuss the efficacy of existing mitigation measures and the role of international cooperation in addressing this complex issue. (150 WORDS)

## III. GLOBAL WARMING AND CLIMATE CHANGE

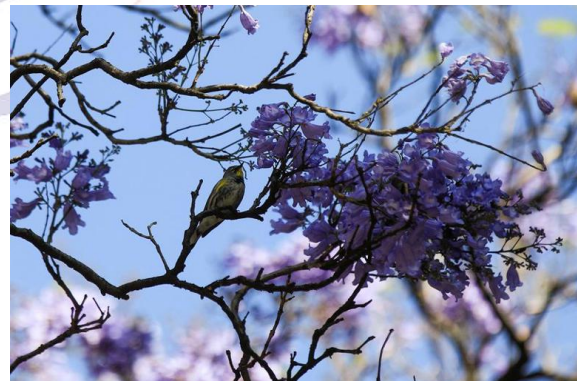
### 12. EARLY JACARANDA BLOOM SPARKS DEBATE ABOUT CLIMATE CHANGE IN MEXICO

#### SOURCE: THE HINDU

#### Why in news:

Mexico City's iconic jacaranda trees, known for vibrant purple blooms, are experiencing an unusual early onset of flowering in January instead of spring.

Rising temperatures linked to premature winter end prompt scientists to investigate the phenomenon.



#### Scientific Investigation:

- **Researcher:** Constantino Gonzalez leads a team of local scientists.
- **Correlation with Climate Change:** Link between rising temperatures and premature winter end to early blooming.
- **Data Collection:** Scientists collect data and use satellite imagery to establish a connection.



## Social Media Awareness:

- **Early Blooms on social media:** Images of early blooms shared on social media.
- **Concerns Raised:** Public awareness increases, raising concerns about climate change impacts on urban ecosystems.

## Significance of Jacarandas:

- **Introduced in the 19th Century:** Japanese landscape architect introduced jacarandas.
- **Ecological Role:** Jacarandas attract hummingbirds and bees.
- **Potential Impact:** Changes in flowering patterns could affect these populations.

## Impacts of Climate Change on Urban Ecosystems:

- **Increased Heat Stress:** Urban heat island effect leads to significantly higher temperatures in densely developed areas.
- **Extreme Weather Events:** More frequent and intense storms, floods, and droughts cause infrastructure damage and disrupt urban drainage systems.
- **Biodiversity Loss:** Altered temperatures and precipitation patterns impact plant and animal species, disrupting the balance of urban ecosystems.
- **Water Scarcity & Quality:** Decreased water availability and quality during droughts stress urban water supplies and ecosystems.
- **Air Quality:** Increased heat and altered air circulation worsen air quality, leading to negative health impacts.
- **Sea Level Rise:** Coastal cities face increased flooding and erosion from rising sea levels, threatening infrastructure and communities.
- **Disproportionate Impact:** Climate change exacerbates social inequalities, with vulnerable communities facing greater exposure to heat, flooding, and pollution hazards.

### UPSC MAINS QUESTION

Q. Discuss the phenomenon of early blooming of jacaranda trees in Mexico City and its implications

for urban ecosystems. Evaluate the significance of scientific investigations and public awareness in addressing climate change impacts on urban ecosystems. (150 WORDS)

## IV. GLOBAL AGREEMENTS AND EFFORTS

### 13. NAGOYA PROTOCOL

#### SOURCE: DD NEWS

#### Why in news:

**Cameroon recently adopted the Nagoya Protocol, demonstrating its commitment to biodiversity conservation and equitable utilization of genetic resources.**

#### About Nagoya Protocol:

- **Global Agreement:** The Nagoya Protocol is a binding international agreement under the Convention on Biological Diversity (CBD).
- **Adoption:** Adopted in Nagoya, Japan, in October 2010, it became effective on October 12, 2014, after the ratification of 50 instruments.
- **Objective:** Implements access and benefit-sharing obligations, focusing on fair and equitable sharing of benefits from genetic resource utilization.

#### Benefits of Nagoya Protocol:

- **Legal Framework:** Provides a transparent legal framework ensuring fair sharing of benefits for utilizing genetic resources.
- **Research and Development:** Facilitates access to genetic resources for biotechnology research, encouraging investment in biodiversity-based research.
- **Indigenous Communities:** Recognizes and respects traditional knowledge, allowing indigenous communities to benefit from associated genetic resource utilization.

#### Coverage:

- **Genetic Resources:** Applies to genetic resources covered by the CBD, regulating benefits from their utilization.



- **Traditional Knowledge (TK):** Includes traditional knowledge associated with CBD-covered genetic resources and benefits derived from their utilization.

## 14. CMS COP14: SAMARKAND SUMMIT

### SOURCE: DOWN TO EARTH

#### Why in news:

The 14th Conference of Parties (COP14) of the Convention of Migratory Species (CMS) commenced on February 12, 2024, in Samarkand, Uzbekistan.

Led by the United Nations Environment Programme-World Conservation Monitoring Centre (UN-WCMC), COP14 aims to address urgent actions required for the protection and conservation of migratory species globally.

#### Key Highlights:

- **Inclusion of New Species:** Proposals to include several terrestrial and aquatic animals in the CMS list are expected. Notable inclusions are the Eurasian lynx, guanaco, Pallas's cat, straw-coloured fruit bat, Hawksbill turtle, Atlantic humpback dolphin, and angelshark.



- **Single Species Action Plans (SSAP):** COP14 plans to develop SSAPs for marine species such as the Hawksbill turtle, Atlantic humpback dolphin, and angelshark, focusing on conservation efforts in specific regions.
- **Amendments to Appendices:** Discussions will revolve around amending the appendices of various species, including Lahille's bottlenose dolphin, harbour porpoise, sand tiger shark, and several types of catfish.
- **Focus on Migratory Birds:** Approximately 962 migratory bird species listed in CMS

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will be addressed, with a focus on combating illegal killing and revised programmes of work for landbirds in the African-Eurasian region.

- **Technological Integration:** Proposals regarding the use of modern technologies like satellite imaging and climate models to aid conservation efforts will be deliberated upon. These tools aim to prioritize actions for species and their habitats effectively.
- **Introduction of SSAPs:** New SSAPs will be introduced for species like the sooty falcon, Christmas Island frigatebird, and great bustard, emphasizing long-term conservation strategies.
- **Proposed Listings:** Several species, including the Peruvian pelican, magellanic plover, and bearded vulture, are proposed for listings in CMS appendices, highlighting the urgency of their conservation.
- **Regional Initiatives:** Draft arguments for regional initiatives, such as the Central Asian Mammal Initiative, will be presented, underscoring collaborative efforts for species conservation.

#### Challenges and Urgency:

- **Human Activities:** Declines in species are attributed mainly to human activities, with overexploitation emerging as a significant threat alongside habitat degradation.
- **Need for Action:** Urgent actions are required to conserve and protect migratory species, especially those lacking adequate protections within the CMS framework.

## 15. SEVEN CONSERVATION INITIATIVES ACROSS CONTINENTS RECOGNISED BY UN

### SOURCE – DOWN TO EARTH

#### Why in news:

The United Nations has acknowledged seven impactful initiatives across Africa, Latin America,

## the Mediterranean, and Southeast Asia as World Restoration Flagships.

These initiatives are dedicated to rejuvenating ecosystems teetering on the edge of degradation, offering hope for both environmental conservation and socio-economic development.

### World Restoration Flagships Recognized by the UN:

#### Restoring Mediterranean Forests Initiative:

- Countries involved: Lebanon, Morocco, Tunisia, and Türkiye.
- Novel approach safeguarding and restoring natural habitats.
- Restoration of 2 million hectares of forests since 2017; aiming for over 8 million by 2030.

#### Living Indus Initiative:

- Official launch at the 27th Conference of Parties to the UN Framework Convention on Climate Change.
- Aims to restore 25 million hectares of the Indus river basin by 2030.
- Designates the Indus River as a living entity with rights, involving multiple countries.

#### Acción Andina Social Movement:

- Led by the non-profit Andean Ecosystems Association (ECOAN).
- Aims to protect and restore one million hectares of Andean forests.
- Focus on securing land titles for local communities and safeguarding forests from mining and timber exploitation.

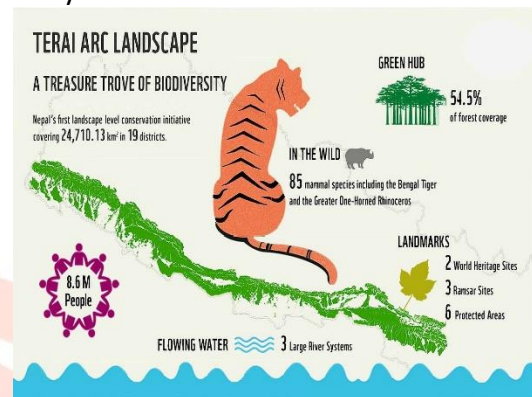
#### Sri Lanka Mangrove Regeneration Initiative:

- Science-driven program co-led by local communities.
- Focus on restoring natural balance in the ecosystem.
- Achieved 500 hectares of restored mangroves; targets 10,000 hectares by 2030.

#### Terai Arc Landscape (TAL) Initiative:

- Targets restoration of forests in critical corridors of the TAL.

- Involves local communities as citizen scientists, anti-poaching units, and forest guards.
- Spans an 810 km stretch between the river Yamuna and Bhagmati, covering parts of India and Nepal.
- Aims to restore 350,000 hectares of forests by 2030.



#### Regreening Africa's Agriculture:

- Enhances carbon storage, increases crop and grass yields, and makes soil more resilient.
- Utilizes fixed nitrogen as a natural fertilizer.
- Focuses on sustainable agricultural practices.

#### Growing Forests in Africa's Drylands Initiative:

- Expands restoration from 41,000 to 229,000 hectares by 2030.
- Involves African farmers planting millions of trees annually.
- Creates over 230,000 jobs, supporting sustainable development.

## V. INDIAN INITIATIVES, EFFORTS AND COMMITMENTS

### 16. ON THE RIGHTS OF FOREST-DWELLERS

#### SOURCE – THE HINDU

#### Why in news:

The notification of the Thanthai Periyar Sanctuary in Tamil Nadu's Erode district has raised concerns among forest-dwellers in the area regarding their rights under the Scheduled Tribes and Other



Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA).

### **Forest Rights Act, 2006:**

The Forest Rights Act, enacted in 2006, aims to address the historical injustice faced by forest-dwelling communities and ensure their rights to forest resources.

**Its objectives include rectifying historical injustices, ensuring land tenure, livelihood, and food security, and strengthening conservation efforts** through the involvement of forest rights holders.

### **Rights Granted Under the Act:**

#### **Land Rights:**

- Forest dwellers are entitled to ownership of land they cultivate, up to a maximum of 4 hectares per family.
- Ownership is limited to cultivated land and cannot be sold or transferred except through inheritance.

#### **MFP Use Rights:**

- Forest dwellers have rights to extract Minor Forest Produce and access grazing areas and pastoralist routes.
- Minor forest produce excludes timber and other major forest resources.

#### **Right to Protect and Conserve:**

- Communities have the right to protect and manage forests, crucial for safeguarding against threats like illegal logging and land encroachment.

#### **Eligibility and Recognition Process:**

- Rights can be claimed by Scheduled Tribes residing in forests or forest lands, as well as those who have lived there for at least three generations prior to December 13, 2005.
- Recognition involves a transparent process: Gram Sabha recommendation, scrutiny by screening committees at Taluka and District levels, and a final decision by the District Level Committee.

#### **Concerns Regarding Thanthai Periyar Sanctuary:**

- The recent notification prohibits cattle-grazing in the sanctuary, affecting

traditional grazing practices of forest-dwelling communities.

- This contradicts the FRA, which recognizes grazing rights of pastoralist communities in forests.
- Despite a revised court order allowing grazing in forests except national parks, sanctuaries, and tiger reserves, Tamil Nadu maintains a total ban on grazing in all forests.

#### **About Gram Sabha:**

- The term Gram Sabha is defined in the Constitution of India under Article 243(b).
- Gram Sabha is the main body of the Panchayati Raj system, representing the village community.

#### **Composition:**

- Comprises individuals above 18 residing in the village, whose names are in the electoral rolls for the village-level Panchayat.

#### **Powers and Functions:**

- Gram Sabha exercises powers and functions as provided by the State Legislature.

#### **Important Functions:**

- **Development Programs:** Aids in implementing Panchayat development programs.
- **Beneficiary Identification:** Identifies beneficiaries for programs; if unsuccessful, Gram Panchayat takes over.
- **Community Support:** Gathers support, financial or voluntary labor, for community welfare programs.
- **Mass Education:** Supports mass education and family welfare programs.
- **Unity Promotion:** Promotes unity and harmony within the village community.
- **Interaction with Panchayat:** Seeks clarification and discusses activities with Panchayat members.
- **Vigilance Committee Reports:** Considers and recommends action on Vigilance Committee reports.

- **Tax Consideration:** Discusses taxes, rates, rents, fees, and rate enhancements.
- **Referral Decision:** Considers matters referred by the Gram Panchayat for its decision.

### Decision-Making Authority:

- Gram Sabha holds the power to annul its decisions, emphasizing its autonomy and significance in local governance.

## 17. WILDLIFE (PROTECTION) ACT, 1972

### SOURCE – THE HINDU

#### Why in news:

The Kerala Assembly has unanimously adopted a resolution urging the Central government to amend the Wildlife Protection Act to address the growing human-wildlife conflicts in the state.



#### About the Wildlife (Protection) Act, 1972:

- Provides a legal framework for the protection of wild animals, plants, and their habitats.
- Regulates and controls the trade of wild animals, plants, and products derived from them.
- Lists schedules categorizing species for varying degrees of protection and monitoring by the government.

#### Constitutional Provisions:

- **The 42nd Amendment Act, 1976**, transferred Forests and Protection of Wild Animals and Birds from State to Concurrent List.
- **Article 51 A (g)** emphasizes the fundamental duty of every citizen to protect the natural environment, including forests and wildlife.

- **Article 48 A** in the Directive Principles of State policy mandates the state to protect and improve the environment, safeguarding forests and wildlife.

#### Schedules under the Act:

##### Schedule I:

- Covers endangered species with stringent protection measures.
- Prohibits hunting across India, except under severe threats to human life or incurable diseases.
- **Examples:** Black Buck, Snow Leopard, Himalayan Bear, Asiatic Cheetah.

##### Schedule II:

- High protection with trade prohibition.
- **Examples:** Assamese Macaque, Himalayan Black Bear, Indian Cobra.

##### Schedules III & IV:

- Species not endangered but still protected.
- Prohibits hunting, with lesser penalties than Schedules I and II.
- **Examples:** Chital (spotted deer), Bharal (blue sheep), Hyena, Sambhar (deer).

##### Schedule V:

- Includes vermin species that can be hunted.
- **Examples:** Common Crows, Fruit Bats, Rats, and Mice.

##### Schedule VI:

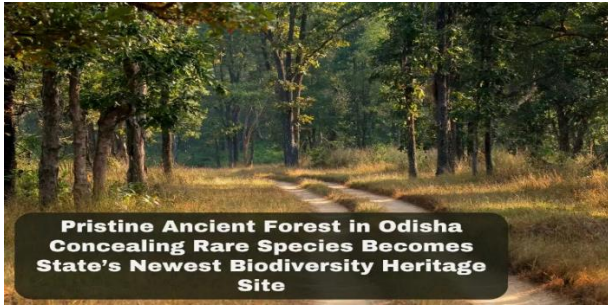
- Regulates cultivation of specified plants, restricting possession, sale, and transportation.
- Requires prior permission for cultivation and trade.
- **Examples:** Beddome's cycad, Blue Vanda (Blue Orchid), Red Vanda (Red Orchid), Kuth, Slipper orchids, Pitcher plant.

## 18. BIODIVERSITY HERITAGE SITE

### SOURCE – TIMES OF INDIA

#### Why in news:

The Odisha government has officially designated the Gupteswar forest in Koraput district as its fourth Biodiversity Heritage Site (BHS).



### About Biodiversity Heritage Site:

- Defined as unique, ecologically fragile ecosystems with rich biodiversity.
- Components include species richness, high endemism, rare/threatened species, keystone species, evolutionary significance, wild ancestors, fossil beds, and cultural/aesthetic values.

### Declaration Authority:

- State Governments, under section 37 of the Biological Diversity Act, can declare areas as BHS in consultation with local bodies.
- The State, in consultation with the Central Government, can formulate rules for BHS management and conservation.
- Empowered to create schemes for compensating or rehabilitating those economically affected by such declarations.

### Importance of Biodiversity Heritage Sites:

- Biodiversity is vital for ecological security.
- Human activities contribute to biodiversity loss, necessitating conservation ethics within communities.
- BHS designation helps preserve unique ecosystems and raise awareness about the importance of biodiversity.

## 19. NATIONAL CONFERENCE ON PROMOTION OF SEAWEED CULTIVATION

### SOURCE: PIB

### Why in news:

The National Conference on Promotion of Seaweed Cultivation recently convened in

Koteshwar (Kori Creek), Kutch, Gujarat, with a focus on fostering seaweed cultivation across India. The initiative aims to diversify marine production and enhance the income of fish farmers.

### Key Points:

#### Seaweeds Overview:

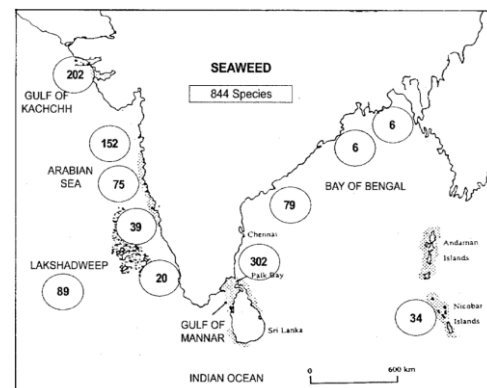
- Seaweeds are **marine algae, multicellular, and macroscopic**, presenting in various colors like red, green, and brown.
- Often referred to as the 'Medical Food of the 21st Century.'
- Distributed in intertidal regions, shallow and deep sea waters, estuaries, and backwaters.
- Some species are cultivated for producing agar, alginates, and liquid seaweed fertilizer.

#### Seaweed Species in India:

- India boasts around 844 reported seaweed species.
- **Gelidiella acerosa, Gracilaria spp., Sargassum spp., Turbinaria spp., and Cystoseira trinodis** are specific species cultivated for various applications.
- **Agar and alginate** are derived from red and brown algae, respectively, used in food products and other industries.

#### Major Seaweed Beds:

- Abundant seaweed resources along Tamil Nadu and Gujarat coasts, Lakshadweep, and Andaman & Nicobar Islands.
- **Notable beds around Mumbai, Ratnagiri, Goa, Karwar, Varkala, Vizhinjam, and Pulicat.**



## Significance of Seaweeds:

- **Bio-indicators, absorbing excess nutrients and indicating marine chemical damage.**
- Nutritionally rich, used in diverse food products, and containing anti-inflammatory and anti-microbial agents.
- **Utilized in cosmetics, pharmaceuticals, bioplastics, offering sustainable alternatives.**
- Carbon capture potential, contributing to climate change mitigation.
- Source of livelihoods for coastal communities, especially women and small-scale farmers.

## Government Initiatives:

- **Seaweed Mission:** Aims to commercialize seaweed farming, enhance value addition, and increase cultivation along India's coastline.
- **Commercialization of Seaweed Products:** ICAR-CMFRI has successfully commercialized nutraceutical products with anti-viral and cholesterol-fighting properties.
- **Multi-Purpose Seaweed Park in Tamil Nadu:** A government initiative focusing on seaweed farming and processing for various applications.

## Conclusion:

The conference sheds light on the untapped potential of seaweed cultivation in India, offering not only economic benefits but also environmental advantages.

**Seaweeds emerge as versatile resources with applications ranging from food to bioproducts, indicating a promising avenue for sustainable marine practices.**

The government's initiatives align with harnessing this potential and promoting seaweed cultivation as a vital component of India's marine economy.

### UPSC MAINS QUESTION

Q. "Discuss the significance of seaweed cultivation in India and its potential contributions to sustainable marine practices, with reference to

the recent National Conference on Promotion of Seaweed Cultivation held in Koteswar, Gujarat." (150 WORDS).

## VI. DISASTERS

### 20. HINDU KUSH HIMALAYA REGION, A BIOSPHERE CLOSE TO COLLAPSING, SAY SCIENTISTS

#### SOURCE: NDTV

#### Why in news:

The International Centre for Integrated Mountain Development (ICIMOD) has emphasized the need for immediate action and financial support to prevent the collapse of the Hindu Kush Himalaya (HKH) region.



#### About Hindu Kush Himalaya (HKH):

- **Geographic Location:** Spanning across South Asia, including Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.
- **Area:** Covers approximately 3,500,000 square kilometers.
- **Water Tower of Asia:** Acts as a vital water source, feeding major rivers like the Indus, Ganga, Brahmaputra, Yellow River, and Yangtze, supporting millions of people across Asia.

#### Region on the Brink:

- **Biodiversity Hotspot:** Renowned for its rich biodiversity, the HKH region is facing a biodiversity crisis.

- **Scope of Crisis:** Rapid habitat loss and environmental degradation threaten the region's ecosystems, demanding urgent intervention.

### Alarming Statistics:

- **Biodiversity Richness:** Houses four global biodiversity hotspots, 575 Protected Areas, and 335 important bird areas.
- **Biodiversity Loss:** Despite conservation efforts, 70% of original biodiversity has been lost in the past century.
- **Human Dependence:** 85% of mountain communities rely on HKH biodiversity for sustenance, water, and cultural identity.
- **Population Pressure:** With 241 million inhabitants, 31% face food insecurity and half experience malnutrition.

### Human Impact:

- **Threat to Humanity:** Environmental decline in the HKH region poses risks to both natural ecosystems and human societies.
- **Water Tower of Asia:** HKH serves as a crucial water source, providing clean water to one-third of the global population.

### UPSC MAINS QUESTION

Q. Discuss the significance of the HKH region as a biodiversity hotspot and a vital water source for millions of people across Asia, emphasizing the implications of its collapse on both ecosystems and human societies. (150 WORDS)

## VII. PRELIMS POINTERS IN NEWS

### 21. SPHAEROTHECA VARSHAABHU

#### SOURCE: ECONOMIC TIMES

#### Why in news:

Researchers from various national and international organizations have identified a previously unknown frog species thriving in Bengaluru.



### About Sphaerotheca varshaabhu:

- **Sphaerotheca Varshaabhu:** The new species, named Sphaerotheca Varshaabhu, signifies a frog genus welcoming rain, emerging from burrows during early showers.
- **Distinctive Characteristics:** Exhibits unique features distinguishing it from known frog species, showcasing adaptability to urban surroundings.
- **Urban Adaptation:** Displays behaviors and physical traits aiding navigation through challenges posed by urbanization.

### Discovery Process:

- **Methodology:** Researchers employed advanced genetic analysis, morphological studies, and bioacoustics to validate the distinctiveness of the newly discovered amphibian.

### Key Facts about Amphibians:

- **Environmental Sensitivity:** Amphibians, including frogs, toads, and salamanders, are highly sensitive to environmental changes, offering valuable insights into ecosystem functioning.
- **Indicator Species:** Known as indicator species, amphibians serve as indicators of environmental health, influencing and being influenced by various animals in an ecosystem.

### 22. MANATEES

#### SOURCE: DOWN TO EARTH

#### Why in news:

A record number of manatees recently gathered at a Florida state park, drawing attention to these fascinating aquatic mammals.



### About Manatees:

- **Classification:** Manatees belong to the group of aquatic mammals called Sirenia, often known as “sea cows.”
- **Habitat:** They inhabit shallow coastal areas, rivers, and marshy regions.
- **Species:** There are three species of manatees: Amazonian, African, and Caribbean.
- **Appearance:** Manatees have stout, tapered bodies, paddle-shaped tails, and forelimbs modified into flippers.
- **Size:** Adults can reach up to 15 feet in length and weigh up to 1,660 kilograms, with females typically larger than males.
- **Color and Diet:** They are dull gray, blackish, or brown and primarily herbivorous, consuming aquatic vegetation.
- **Behavior:** Manatees are usually solitary, except for mothers with calves or during mating.
- **Breathing:** They must surface for air regularly due to their reliance on breathing air.
- **Lifespan:** Manatees can live for 50 to 60 years.

### Conservation Status:

All three species of manatees are categorized as ‘Vulnerable’ by the IUCN’s Red List of Threatened Species due to various threats to their habitats and populations.

## 23. FOREST OWLET

### SOURCE: DOWN TO EARTH

#### Why in news:

Three consecutive sightings of the endangered Forest Owlet took place in Melghat Tiger Reserve recently.

### About Forest Owlet:

- Member of the typical owl family, Strigidae.
- Scientific Name: Athene blewitti.
- Initially described in 1873, considered extinct after 1884, rediscovered in 1997.



### Distribution:

- Endemic to the forests of central India.
- Observed in Odisha, Chhattisgarh, Madhya Pradesh, Maharashtra, and Gujarat.
- Notable sightings in the Melghat Tiger Reserve, Maharashtra.

### Habitat:

- Thrives in tropical and subtropical moist lowland woods.
- Prefers dense deciduous woodlands, open dry deciduous teak woods, and tropical/subtropical dry forests.

### Features:

- **Small and stocky**, measuring 20 to 25 cm in length, weighing 240 grams.
- Characterized by a rather unspotted crown, a full throat collar, thickly feathered legs, heavily banded wings, and tail.
- **Dark greyish-brown upperparts, whitish underparts with dark barring.**
- Short, pale-yellow bill.
- **Diurnal behaviour**, actively hunts during the day.
- Diet includes rodents, reptiles (lizards and skinks), and insects.

### Conservation Status:

- **IUCN Red List:** Endangered.
- **CITES:** Appendix I.

### Melghat Tiger Reserve:

- **Location:** Amaravati district, Maharashtra.



- Positioned on the southern offshoot of the Satpura Hill Range (Gavilgarh Hill).
- First tiger reserve in Maharashtra.
- Name 'Melghat' signifies the confluence of various valleys.
- **Vegetation:** Tropical dry deciduous forest, dominated by teak.
- **Rivers:** Catchment area for five major rivers—Khandu, Khapra, Sipna, Gadga, and Dolar.
- **Boundaries:** Tapti River and Gawilgadh ridge of the Satpura Range.
- **Flora:** Teak, Lagerstroemia Parviflora, Terminalia Tomentosa, Ougeinia Oojeinensis, Emblica Officinalis, Bamboo, etc.
- **Fauna:** Tigers, Sloth Bear, Indian Gaur, Sambar deer, Leopard, Nilgais, dhole, hyena, jungle cat, langur, and a stronghold for the endangered forest owl.

## 24. OBELISKS

**SOURCE: TIMES OF INDIA**

**Why in news:**

Scientists have discovered a new class of virus-like entities called Obelisks in the human body, presenting unique characteristics and behaviours.



**About Obelisks:**

- **Discovery:** Recently uncovered in the human body, Obelisks represent a novel class of virus-like entities.
- **Composition:** Comprising diverse RNAs, Obelisks are characterized by twisted

lengths of RNA forming highly symmetrical, rod-like structures.

- **Genetic Makeup:** The genetic sequences of Obelisks are relatively small, around 1,000 nucleotides in size, with no detectable similarities to known biological agents.
- **Size Comparison:** Obelisks are larger than other genetic molecules found in cells, such as plasmids, and exist as a distinct class of organism between viruses and viroids.
- **Hosts and Distribution:** While the hosts of Obelisks remain largely unknown, some may potentially exist in bacteria, and different types of Obelisks appear to be present in various areas of the human body.

**About Viroids:**

- **Definition:** Viroids are small loops of RNA, similar to DNA, primarily infecting plants rather than humans.
- **Characteristics:** Unlike viruses, viroids lack protective shells and do not contain instructions for building proteins in their RNA.
- **Replication:** Viroids rely on host enzymes for replication, contrasting with viruses that carry instructions for replication enzymes in their genetic material.
- **Infection:** Viroids primarily infect plants and are distinguished by their naked RNA structure and dependence on host enzymes for replication.

## 25. CANDIDA AURIS

**SOURCE: NDTV**

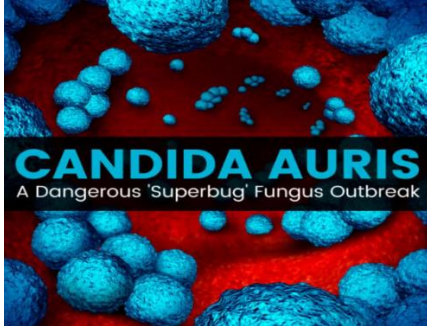
**Why in news:**

A deadly fungal infection called Candida auris is spreading rapidly in the United States

**About Candida auris (C. auris):**

- **Emerging Threat:** Candida auris is a multidrug-resistant yeast, posing a global health threat.

- **Invasive Infections:** Capable of causing invasive infections, particularly affecting individuals with weakened immune systems.
- **Discovery:** First identified in Japan in 2009 and rapidly spread to various countries.



#### Transmission:

- **Healthcare Settings:** Mainly contracted in healthcare facilities like hospitals and nursing homes.
- **Colonization:** Can live on the skin or body parts without causing sickness, referred to as "colonization."
- **Regions Affected:** Colonizes specific body areas or causes invasive infections by entering the bloodstream or wounds.
- **Spread Mechanism:** Transmitted through contact with contaminated surfaces, equipment, or infected/colonized individuals.

#### Symptoms:

- **Affected Areas:** Causes infections in different body parts such as the bloodstream, open wounds, and ears.
- **Variability:** Symptoms depend on the infection's location and severity, resembling bacterial infections.
- **Common Signs:** High fever with persistent chills, unresponsive to antibiotics, may indicate a C. auris infection.

#### Treatment:

- **Antifungal Drugs:** Most infections are treatable with antifungal medications.
- **Resistance Challenge:** Some infections resist all main antifungal classes, requiring more complex combination therapies for treatment.

## 26. DUSTED APOLLO (PARNASSIUS STENOSEMUS)

### SOURCE: THE HINDU

#### Why in news:

The Dusted Apollo (*Parnassius stenosemus*) was recently sighted and photographed for the first time in Himachal Pradesh, marking a remarkable discovery.

- **Extensive Distribution:** This extremely rare butterfly is usually found in the Himalayan region, ranging from Ladakh to West Nepal, with a habitat altitude between 3,500 to 4,800 meters.



#### Appearance:

**Identification Features:** Resembling Ladakh Banded Apollo (*Parnassius stoliczkanus*), the Dusted Apollo can be distinguished by its complete discal band on the upper forewing, extending from costa to vein one.

- In comparison, Ladakh Banded Apollo's discal band is incomplete, reaching only up to vein four.

**Marginal Band Differences:** Notably, the Dusted Apollo has a narrower dark marginal band on the hind wings, while Ladakh Banded Apollo features a broader one.

#### Other Species and Conservation:

- **Regal Apollo:** Another rare species, Regal Apollo (*Parnassius charltonius*), protected under Schedule II of the Wildlife Protection Act, 1972, was also photographed at Manimahesh.
- **Apollo Diversity:** Himachal Pradesh boasts 11 Apollo species, with five designated as Scheduled species.

- **Conservation Importance:** The discovery indicates the flourishing diversity of Apollo butterflies in the region, emphasizing the need for conservation.
- **Threats and Conservation Measures:** Commercially valuable, Apollos face poaching threats. Urgent conservation actions, including community awareness and establishing butterfly parks and reserves, are crucial for their protection.

## 27. THRIPS PARVISPINUS

**SUBJECT: ENVIRONMENT– SOURCE: TIMES OF INDIA**

### Why in news:

Union Agriculture Minister informs Rajya Sabha about the prevalence of Thrips Parvispinus in Telangana and Andhra Pradesh, potentially replacing the native chilli thrips (*scirtothrips dorsalis*).



### About Thrips Parvispinus:

#### Invasive Pest:

- Thrips Parvispinus is an invasive pest species causing agricultural concerns.
- **Polyphagous Nature:** It grows on various hosts such as drumstick, pigeon pea, chickpea, papaya, mango, and weed species.
- **Geographic Distribution:** Originally reported from Thailand, Australia, and Europe, it has expanded its presence to multiple countries, including India.

#### Distribution in India:

- **First Report:** Initially discovered on papaya in Bengaluru in 2015.

- **Regional Dominance:** It is observed to dominate or replace the native chilli thrips in the Telangana and Andhra Pradesh region.

#### Habitat and Infestation:

- **Adult Habits:** Adults colonize on flowers and the underside of leaves.
- **Larval Behavior:** Larvae extract sap from the undersurface of leaves.
- **Impact:** Heavy infestation leads to flower drop, reducing overall fruit production.

#### Global Impact:

- **Worldwide Spread:** The species has extended its distribution to France, Greece, Hawaii, Mauritius, Spain, Tanzania, and the Netherlands.

#### Thrips in General:

- Thrips are a significant group of sucking pests causing economic losses and transmitting plant viruses.
- **Outbreak Causes:** Changes in crop patterns, pesticide use, and climate change contribute to thrips outbreaks in various regions.

## 28. FIRE CAPPED TIT

**SOURCE – DOWN TO EARTH**

### Why in news:

Birders in the Aravalli hill region have observed the reverse migration of species, including the fire-capped tit, signaling the shift from winter to summer.



### About Fire Capped Tit:

- Small bird belonging to the Paridae family.

- Himalayan bird migrating south to Western Ghats and Kerala in September and returning around February and March.
- Inhabits forests, feeds on invertebrates, nectar, and pollen, often found in the high canopy but descends to lower growth.
- Breeds in the Himalayas during summer, known for its melodious song.

#### Distribution:

- Local breeding summer visitor in northern mountains from Pakistan to Arunachal Pradesh.
- Winters in foothills and occasionally in plains, extending south to Maharashtra and Madhya Pradesh.

#### Conservation Status:

- IUCN classification: Least Concern.

#### Early Reverse Migration Possible Reasons:

- Mild winters in central India might have prompted the bird to start its migration earlier than usual.

## 29. NORTH ATLANTIC RIGHT WHALES

#### SOURCE: LIVE SCIENCE

#### Why in news:

Scientists find that North Atlantic right whales are getting smaller.



#### About North Atlantic Right Whales:

- **Migratory Behavior:** Migrate from warmer winter waters to cooler poles in late summer.
- **Habitat:** Inhabit temperate and subpolar waters of the North Atlantic and North Pacific oceans.

- **Seasonal Presence:** Spend time near bays, peninsulas, and shallow coastal waters, depending on the season and hemisphere.
- **Distribution:** Primarily found in the coastal waters of the East coast of the United States and Canada.
- **Species:** Three recognized species – Southern right whales, North Atlantic right whales, and North Pacific right whales.
- **Feeding Habits:** Skim feed near the water surface, swimming through plankton clouds with mouths open, straining plankton through long baleen plates.

#### Conservation Status:

- **IUCN:** Critically endangered.
- **CITES:** Listed in Appendix I, highlighting the need for strict protection.

## 30. STATE EYES FEMALE TIGERS FROM CENTRAL INDIA FOR STR

#### SOURCE: TIMES OF INDIA

#### Why in news:

The Odisha government aims to tackle inbreeding and combat the prevalence of pseudo-melanistic tigers in the Similipal Tiger Reserve (STR) by introducing female tigers from other regions.

Inbreeding has led to genetic homogeneity and the proliferation of pseudo-melanistic tigers, posing challenges to the conservation of tiger populations.

#### Concerns and Request:

#### Pseudo-melanistic Tigers:

- The All-Odisha Tiger Estimation (AOTE 2023-24) report highlights the presence of 13 adult pseudo-melanistic tigers in STR, indicating inbreeding as a significant factor.
- Pseudo-melanistic tigers result from inbreeding and possess genetic traits leading to abnormal coat coloration.

#### Population Dynamics:

- STR harbors 24 adult tigers, holding the largest share of Odisha's tiger population.

- All adult female tigers in the state reside in the reserve, making it crucial for conservation efforts.

### Government Initiative:

- The Odisha government has written to the National Tiger Conservation Authority (NTCA), proposing the introduction of female tigers from other regions to augment genetic diversity.
- The initiative aims to address inbreeding and enhance the overall health and resilience of the tiger population in Similipal.

### Inbreeding Challenges and Conservation Implications:

#### Genetic Homogeneity:

- Inbreeding results in reduced genetic diversity within a population due to closely related individuals reproducing.
- This leads to an increased prevalence of deleterious recessive traits and genetic uniformity.

#### Fitness and Health Concerns:

- Inbreeding depression reduces overall fitness, including reproductive success, survival rates, and overall health of individuals.
- Genetically similar individuals are more susceptible to diseases, posing risks to population viability.

#### Evolutionary Impacts:

- Limited genetic variation hampers a population's ability to adapt to environmental changes or threats.
- Long-term inbreeding can lead to population decline, threatening species survival.

#### Conservation Strategies:

- Conservation efforts must prioritize maintaining or restoring genetic diversity to mitigate the adverse effects of inbreeding.
- Introducing genetically diverse individuals from other populations can rejuvenate

gene pools and enhance population resilience.

## 31. 'FIRST TIME IN INDIA': AFRICAN-MEDITERRANEAN WADER BIRD SPOTTED IN WARANGAL

### SOURCE: THE HINDU

#### Why in news:

Birdwatchers in Telangana discovered a potentially first-in-India spur-winged lapwing near Warangal during the 14th Hyderabad Bird Race.

Initially mistaken for a common river lapwing, distinctive features, calls, and flight patterns confirmed its uniqueness.



#### Spur-Winged Lapwing (*Vanellus spinosus*):

**Scientific Name:** *Vanellus spinosus*

**IUCN Status:** Species of Least Concern

#### Description:

- Medium-sized bird with a distinctive black crown, white face, and conspicuous black spur on the shoulder.
- Brownish-grey back and wings with a white belly.

#### Habitat:

- Found in wetland habitats like marshes, lakeshores, and riverbanks in Africa, the Middle East, and parts of Europe.

#### Behavior:

- Known for loud and repetitive “kleep-kleep-kleep” calls, especially during breeding.
- Territorial and often forms small colonies.

#### Feeding Habits:

- Primarily feeds on insects, small invertebrates, and occasionally small fish.
- Forages in shallow water or wet mud using long legs and slender bill.

## Breeding:

- Builds a ground nest in open areas, often near water.
- Both male and female participate in incubating eggs and caring for chicks.

## Conservation Status:

- Generally considered a species of Least Concern.
- Localized threats to wetland habitats may impact local populations.
- Conservation efforts focus on preserving suitable breeding and feeding areas.

## 32. PURPLE FROG

### SOURCE: THE HINDU

#### Why in news:

The Tamil Nadu government has taken a significant step to protect endangered species, especially the Purple Frog, by establishing the Tamil Nadu Endangered Species Conservation Fund (TNESCF).



#### About the Purple Frog:

- Also known as Maveli frog or Pignose Frog, it's considered a 'living fossil' in the Nasikabatrachidae family, showing similarities to frogs in Seychelles.
- Believed to have co-existed with dinosaurs, it has a distinctive appearance with a bloated, dark purple to greyish body, short stout limbs, and a pointed snout.
- Unusual short hind legs prevent leaping, and short, muscular forelimbs with hard palms aid in burrowing underground.

#### Habitat and Distribution:

- Prefers loose, damp soil near ponds, ditches, or streams, dwelling underground most of the year.

- Endemic to specific Western Ghats habitats in Kerala and Tamil Nadu, with the Anamalai hill being a prime location in Tamil Nadu.
- Two types found in Tamil Nadu: *Nasikabatrachus sahyadrensis* and *Nasikabatrachus bhupathi*.

## Conservation Status:

- **IUCN:** Endangered, listed under Schedule I of the Wildlife Protection (Amendment) Act, 2022.
- Major threats include habitat loss, road networks disrupting habitats, and the impact of climate change.

## 33. HAWKSBILL TURTLE.

### SOURCE: TIMES OF INDIA

#### Why in news:

The 14th Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP14) recently approved the Single Species Action Plan focused on conserving the Hawksbill Turtle.



#### International Single Species Action Plan:

- **Development:** Key instrument under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).
- **Purpose:** Aims to implement coordinated measures for restoring migratory waterbird species to a favorable conservation status.
- **Implementation:** Requires international cooperation among the range states of the species.

#### About AEWA:

- **Definition:** Intergovernmental treaty dedicated to conserving migratory



waterbirds and their habitats across Africa, Europe, the Middle East, Central Asia, Greenland, and the Canadian Archipelago.

- **Development:** Formulated under the framework of the Convention on Migratory Species (CMS), administered by the United Nations Environment Programme (UNEP).
- **Species Covered:** Includes 255 migratory waterbird species dependent on wetlands for part of their annual cycle.
- **Geographical Coverage:** Spans from northern Canada and Russia to the southernmost tip of Africa, involving 119 Range States across Africa, Europe, the Middle East, Asia, and Canada.
- **Organizational Structure:** Comprises Meeting of the Parties (MOP), Standing Committee (StC), Technical Committee (TC), and the UNEP/AEWA Secretariat based in Bonn, Germany.
- **Functions:** MOP governs AEWA, StC steers operations between sessions, TC provides scientific advice, and the Secretariat supports parties and services the Agreement's bodies.

## SCIENCE AND TECHNOLOGY

### I. MEDICAL HEALTH / VACCINES / DISEASES

#### 1. MUSK SAYS FIRST HUMAN HAS RECEIVED NEURALINK IMPLANT

##### SOURCE: THE HINDU

##### Why in news:

Co-founded by Elon Musk, Neuralink focuses on developing brain-computer interfaces (BCIs).

BCIs aim to directly connect the human brain to computers, potentially assisting in treating brain disorders and injuries.

##### Recent Milestone:

- Elon Musk announced the successful implantation of Neuralink in a human, marking a significant transition from animal trials to human applications.

##### Patient Details:

- Limited information about the patient, but Neuralink targets individuals with quadriplegia from spinal cord injuries or ALS.
- The patient is reportedly recovering well, with positive initial results indicating effective neuron spike detection.



##### Significance of Milestone:

- A noteworthy achievement in the BCI field, showcasing progress towards practical

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applications with over 40 ongoing trials globally.

### Functionality of the Device:

- The implant, roughly the size of a large coin, interfaces with the brain through thin wires implanted in the skull.
- Targets areas controlling movement intention, aiming to enable control over cursors or keyboards through thought.

### Risks and Challenges:

- Despite innovative approaches, risks like brain haemorrhage or seizures are associated with brain surgery.
- Long-term effectiveness and safety of BCIs, including Neuralink's, are under continuous study.

### Future of Neuralink:

- Continued clinical trials will focus on gathering data regarding the device's safety and effectiveness.
- The goal is broad application, assisting individuals with various neurological conditions.

### Conclusion:

While Neuralink's technology holds promise, it is in the early stages, and ongoing research will unveil its potential impacts and limitations.

### UPSC MAINS QUESTION

Q. Discuss the significance of Neuralink's recent milestone in successfully implanting brain-computer interfaces (BCIs) in humans. (150 WORDS)

## 2. ALZHEIMER'S DISEASE

### SOURCE: ECONOMIC TIMES

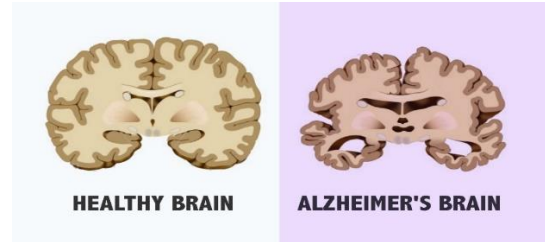
#### Why in news:

Alzheimers is a Progressive brain condition leading to a decline in memory, thinking, learning, and organizing skills.

- Most common type of dementia, constituting 60-80% of all dementia cases.
- Affects parts of the brain controlling thought, memory, and language.

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- Typically impacts individuals aged 65 and over, with only 10% occurring in younger people.



### Causes and Symptoms:

- Exact cause not fully understood, influenced by genetic, environmental, and lifestyle factors.
- Early signs include forgetting recent events, progressing to serious memory problems and the inability to perform daily tasks.

### Treatment:

- No cure for Alzheimer's, but medications and therapies can help manage symptoms temporarily.

### Understanding Dementia:

- General term for impaired ability to remember, think, or make decisions interfering with everyday activities.
- Alzheimer's is the most common type, but other forms include Vascular Dementia, Lewy Body Dementia, Frontotemporal Dementia, and Mixed Dementia.
- Not a part of normal aging, and it mostly affects older adults.

## 3. AI MAY AUTOMATE DIAGNOSIS OF LUPUS

### SOURCE: THE HANS INDIA

#### Why in news:

Recent Australian research has unveiled a breakthrough in addressing a defect associated with lupus, a challenging autoimmune disease.

#### Key Points:

#### About Lupus:

- An autoimmune disease causing the immune system to damage organs and tissues.



- Inflammation impacts the skin, joints, blood, and organs like kidneys, lungs, and heart.

### Causes:

- The exact cause is unknown, believed to result from a combination of genetic, hormonal, and environmental factors.
- More prevalent in women than men.

### Types of Lupus:

- Systemic lupus erythematosus (SLE): Most common, varying in severity and affecting multiple body parts.
- Discoid lupus: Presents as a persistent red rash.
- Subacute cutaneous lupus: Causes sun-induced sores.
- Drug-induced lupus: Linked to specific medications, usually reversible upon discontinuation.
- Neonatal lupus: Rare, impacting newborns, possibly due to maternal antibodies.

### Symptoms:

- Diverse symptoms include joint pain, muscle pain, unexplained fever, "butterfly rash" on the face, chest pain, hair loss, sun sensitivity, and discoloration of fingers or toes.

### Treatment:

- No cure exists, but medications and lifestyle adjustments help manage symptoms.
- Treatment aims to control inflammation, alleviate pain, and prevent organ damage.

## 4. KYASANUR FOREST DISEASE: THE ASSAULT OF THE TICK

### SOURCE- THE HINDU

#### Why in news:

Two deaths reported in Karnataka due to KFD, a viral infection, since January 1, 2024. Over 560 deaths reported since its discovery in 1956 in Shivamogga district's forests.



### Spread and Transmission:

- First noticed in Kyasanur Forest area, named after the region; also known as monkey fever.
- Monkeys act as hosts, and their deaths serve as warnings of KFD outbreaks.
- Spreads through ticks; primates and humans coming in contact with infective ticks contract the disease.

### Symptoms and Diagnosis:

- Symptoms appear 3-8 days after tick bite, including fever, redness of eyes, severe headache, body pain.
- Gastrointestinal symptoms may follow, and severe cases may involve nose bleeding.
- Diagnosis through blood tests.

### Geographical Spread:

- Initially confined to Shivamogga district; spread to Uttara Kannada (1972), Koppa, Chikkamagaluru (1980), Dakshina Kannada (1982), and other regions over the years.
- Cases reported in Tamil Nadu, Kerala, Goa, and Maharashtra.

### Preventive Measures:

- Forest department distributing DEPA oil (tick repellent) to families entering forests.
- Free treatment announced by the State Government for KFD patients.

### Vaccine Development:

- Attempt to use a vaccine abandoned; ICMR in consultation with Indian Immunologicals for new vaccine development.

### Ecological Factors:

- Virus activation linked to ecological changes in the Malnad region.

## Historical Timeline:

- 1956: KFD first noticed in Shivamogga.
- 1971: Disease confined to Shivamogga.
- 1972: Detected in Uttara Kannada.
- 1980: Cases reported in Koppa, Chikkamagaluru.
- 1982: Found in Dakshina Kannada.
- 2012: Detected in Nilgiri district of Tamil Nadu.
- 2013–14: Cases in Wayanad and Malappuram, Kerala.
- 2015–16: Outbreak in North Goa district.
- 2016: Cases reported in Maharashtra.

## Government Initiatives:

- Distribution of tick repellent for forest-goers.
- Free treatment for KFD patients announced by the State Government.

## 5. THE UNTAPPED POTENTIAL OF STEM CELLS IN MENSTRUAL BLOOD

### SOURCE – THE HINDU

#### Why in news:

Around two decades ago, biologist Caroline Gargett embarked on a groundbreaking exploration into hysterectomy tissue, unveiling the presence of remarkable cells in the endometrium.

Dr. Gargett's discovery of endometrial stromal mesenchymal stem cells, known for their regenerative capabilities, marked a significant leap in medical research.

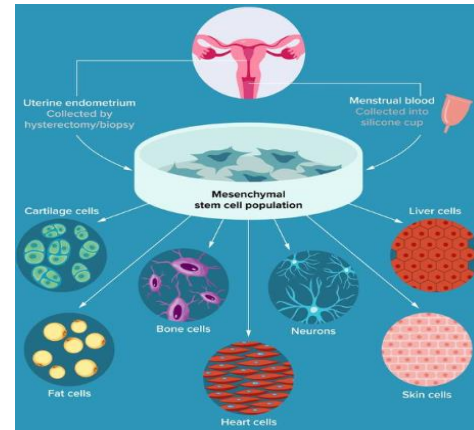
#### Endometrial Stem Cells:

#### Regenerative Potential:

- Ability to differentiate into various cell types: neurons, cartilage, fat, bone, heart, liver, and skin cells.

#### Collection Methods:

- Obtainable through biopsy or harvesting from menstrual blood, providing a less invasive and more accessible means of procurement.



#### Application in Women's Health:

#### Understanding Endometriosis:

- Link between endometrial stem cells and endometriosis, offering insights into its causes and potential therapeutic targets.

#### Diagnostic and Therapeutic Potential:

- Variances in menstrual stem cells between healthy and endometriosis-affected individuals offer avenues for diagnostic tests and targeted treatments.

#### Treatment Innovations:

- Clinical trials exploring menstrual stem cell transplantation show promise in treating pelvic organ prolapse and other gynecological conditions.

#### Beyond Gynecological Diseases:

#### Wider Therapeutic Applications:

- Potential applications in treating diseases beyond gynecological disorders, including diabetes and wound healing.

#### Clinical Trials and Future Prospects:

- Small-scale trials affirm the safety and efficacy of stem cell transplantation, opening doors for further exploration in diverse medical fields.

#### Challenges and Biases:

#### Underrepresentation in Research:

- Despite therapeutic potential, menstrual stem cells receive minimal attention, hindered by cultural taboos and biases surrounding menstruation.

#### Funding and Investment:

- Limited funding and gender bias in research funding pose significant

challenges, necessitating increased advocacy for equitable investments.

### Way Forward:

#### Addressing Bias:

- Crucial to tackle sex and gender bias in research funding to encourage equitable investments in women's health research.

#### Recognition and Validation:

- Overcoming cultural taboos and biases is essential for recognizing menstrual stem cells as a valuable resource in regenerative medicine, transforming perceptions of menstruation from inconvenience to scientific opportunity.

### UPSC MAINS QUESTION

Q. Discuss the significance of Dr. Caroline Gargett's discovery of endometrial stromal mesenchymal stem cells in the context of regenerative medicine. Evaluate the potential applications of these cells in treating gynaecological disorders, as well as their broader therapeutic implications beyond women's health (150 WORDS)

## 6. DOWN AND EDWARDS SYNDROME

### SOURCE: NEWS18

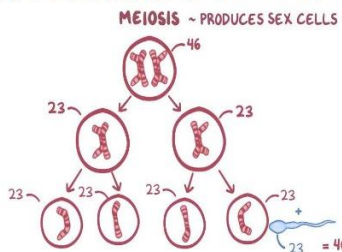
#### Why in news:

Researchers have identified chromosomal disorders in prehistoric skeletal remains dating back up to approximately 5,500 years.

Notably, six cases of Down syndrome and one case of Edwards syndrome were reported.

#### Edwards Syndrome:

#### EDWARDS SYNDROME (TRISOMY 18)



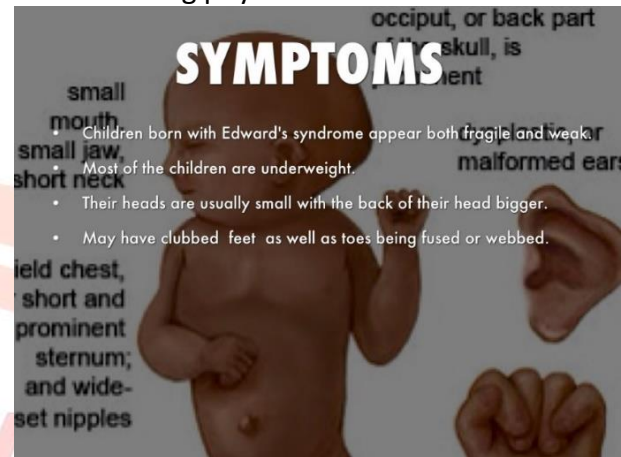
- Also known as trisomy 18.

- An autosomal chromosomal disorder caused by an extra copy of chromosome 18.
- A severe genetic condition affecting the child's body development and growth.

#### Symptoms of Edwards Syndrome

#### Children diagnosed with trisomy 18 exhibit:

- Low birth weight.
- Multiple birth defects.
- Defining physical characteristics.



#### Types of Edwards Syndrome

##### Complete Trisomy 18:

- Most common form (94%).
- Every cell contains three complete copies of chromosome 18.
- Extra chromosome often of maternal origin.

##### Mosaic Trisomy 18

- Second most common type (less than 5%).
- Coexistence of both a complete trisomy 18 and a normal cell line.

##### Partial Trisomy 18

- Only a partial segment of chromosome 18 is present in triplicate.
- Resulting from a balanced translocation or inversion carried by one of the parents.

##### Treatment for Trisomy 18

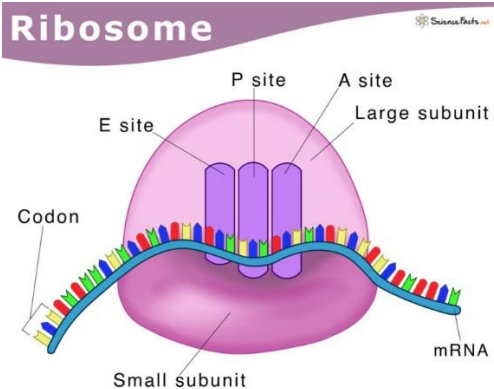
- There are no specific treatments for trisomy 18.
- Treatment focuses on managing symptoms like heart conditions, breathing difficulties, and infections.

## 7. SCIENTISTS UNRAVEL THE MYSTERY OF THE PROTEIN FACTORY IN OUR CELLS

**SOURCE: SCIENCEDAILY**

**Why in news:**

Scientists used electron microscopy to create a 3D model of a part of the human cell, specifically the ribosome.



### Overview of Ribosomes

- Non-membrane-bound cell organelles composed of RNA and proteins.
- Present in both prokaryotic and eukaryotic cells.
- In eukaryotes, found in the cytoplasm, mitochondria, and chloroplast; in prokaryotes, located free in the cytoplasm.

### Structure and Function of Ribosomes

- Made up of two subunits: large and small, comprising ribosomal RNA (rRNA) and proteins.
- Primary function: Complex molecular machines facilitating protein synthesis or translation.

### Protein Synthesis Process

- Ribosomes read messenger RNA (mRNA) sequence.
- Translate genetic code into a specific string of amino acids, forming proteins.
- Newly formed proteins detach and move to other cell parts for use.

### What is mRNA?

- Single-stranded RNA involved in protein synthesis.

- Produced from a DNA template during transcription.
- Carries protein information from DNA in the nucleus to the cell's cytoplasm.
- mRNA sequence is read by cellular machinery, translating each three-base codon into corresponding amino acids in a growing protein chain.

### Role of mRNA in Protein Synthesis

- mRNA acts as a form of nucleic acid, facilitating the reading of the human genome coded in DNA by the cellular machinery.
- In conclusion, the 3D model of ribosomes aids in understanding their intricate structure and their pivotal role in protein synthesis, crucial for the functioning of every cell in the body.

## 8. THE UNTAPPED POTENTIAL OF STEM CELLS IN MENSTRUAL BLOOD

**SOURCE: THE HINDU**

**Why in news:**

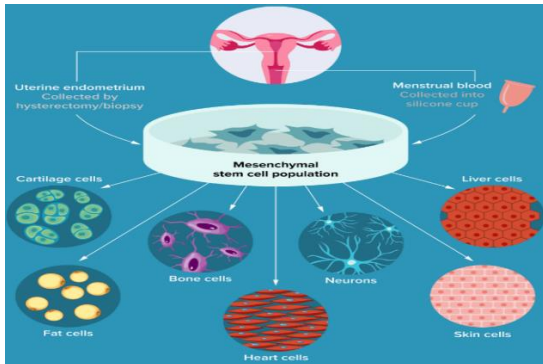
The recent revelation of the regenerative capabilities of stem cells found in menstrual blood, known as Menstrual Blood-Derived Stem Cells (MenSCs), is a groundbreaking discovery.

This discovery not only unlocks new insights into the intricacies of the female reproductive system but also presents promising avenues for regenerative medicine.

### Menstrual Blood Stem Cells (MenSCs):

- MenSCs, scientifically termed as endometrial stromal mesenchymal stem cells, exhibit multipotent properties. This means they can transform into various tissue types such as fat cells, bone cells, and smooth muscle cells.
- Collected painlessly from women, MenSCs are an ethical source of adult stem cells, providing a less invasive alternative to surgical biopsies.

- MenSCs are extracted from menstrual blood, specifically from the endometrium, which lines the inside of the uterus.



### Role in Women's Health:

#### Regenerative Potential:

- MenSCs showcase multipotent characteristics, enabling them to differentiate into diverse cell types, including neurons, cartilage, fat, bone, heart, liver, and skin cells.

#### Treating Endometriosis:

- MenSCs hold promise in treating gynecological disorders like endometriosis and infertility.
- Endometriosis, characterized by the growth of endometrial-like tissue outside the uterus, causing pain and fertility issues, could potentially benefit from MenSC-based therapies.

#### Broader Therapeutic Applications:

- Menstrual stem cells demonstrate potential beyond gynecological diseases.
- They have shown effectiveness in stimulating the regeneration of insulin-producing cells in diabetic mice and promoting wound healing in other studies.
- Importantly, MenSCs can be transplanted into humans without adverse side effects.

#### Challenges in Menstrual Stem Cell Research:

Despite the promising potential of MenSCs, there are challenges that need to be addressed:

- As of 2020, MenSC research constitutes only 0.25% of all mesenchymal cell research, highlighting the need for increased focus and investment in this area.

- Consistent and scalable production of MenSCs for clinical applications remains a challenge.
- Cultural taboos and limited investment in women's health research pose significant obstacles, necessitating a shift in perspective and resource allocation.

#### Gender Bias in Research Funding:

- Menstrual stem cell research is hindered by gender bias in research funding.
- Acknowledging and rectifying this bias is crucial to unlocking the full potential of menstrual stem cells in regenerative medicine.

#### Endometriosis and Fusobacterium Bacteria:

##### Association with Endometriosis:

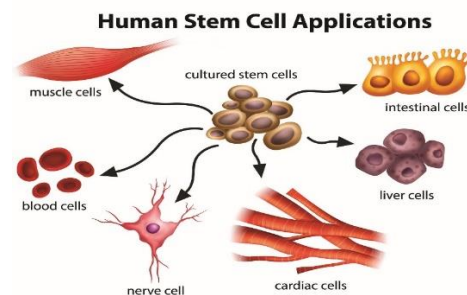
- A significant association has been observed between Fusobacterium bacteria and endometriosis.
- Fusobacterium prevalence is higher in endometriosis patients compared to healthy individuals, exacerbating endometrial lesions.

#### Gut Dysbiosis and Endometriosis:

- Recent research suggests a link between gut dysbiosis (an imbalance in microbial populations in the gut) and endometriosis.
- Altered microbiota may contribute to the progression of endometriosis, emphasizing the interconnectedness of various bodily systems.

#### Understanding Stem Cells:

##### About Stem Cells:



- Stem cells are specialized human cells with the unique ability to develop into various cell types, such as muscle cells or brain cells.

- Their potential to repair damaged tissues holds promise for treating severe illnesses like paralysis and Alzheimer's disease.

### Types of Stem Cells:

- Stem cells are categorized as multipotent, pluripotent, and totipotent, each with distinct capabilities in terms of cell development.

### Stem Cells in Medicine:

- Hematopoietic stem cells, found in bone marrow, are currently used to treat diseases like cancer and anaemia.
- Future applications may include treating chronic heart disease, type 1 diabetes, spinal cord injuries, and Alzheimer's disease.

### UPSC MAINS QUESTION

Q. "Discuss the recent advancements in stem cell research, particularly focusing on the untapped potential of stem cells found in menstrual blood. Highlight the regenerative capabilities of Menstrual Blood-Derived Stem Cells (MenSCs) and their broader therapeutic applications. (150 WORDS)

## 9. GLOBAL BURDEN OF CANCER IN 2022: WHO

### SOURCE: THE HINDU

#### Why in news:

World Cancer Day, observed annually on February 4th, serves as a poignant reminder of the global impact of cancer and the urgent need for collective efforts to address its growing burden.

The World Health Organization's International Agency for Research on Cancer (IARC) recently released the Global Burden of Cancer estimates for 2022, shedding light on the challenges faced globally and specifically in India.

#### Global Burden of Cancer in 2022: Key Highlights

##### Magnitude of the Problem:

- **New Cases:** Approximately 20 million new cancer cases were reported globally in 2022.

- **Deaths:** The estimated number of deaths reached 9.7 million.
- **Survival:** 53.5 million people were living within 5 years after a cancer diagnosis.

#### Common Cancer Types:

- Two-thirds of new cases and deaths were attributed to ten common cancer types.
- Lung cancer topped the list, with 2.5 million new cases, followed by female breast cancer, colorectal cancer, prostate cancer, and stomach cancer.

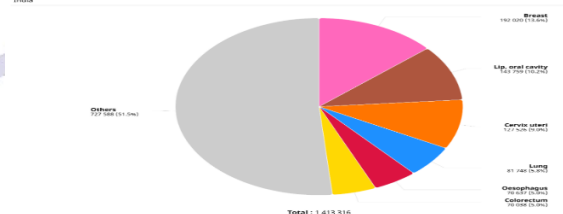
#### Leading Causes of Death:

- Lung cancer was the primary cause of cancer-related deaths, followed by colorectal cancer, liver cancer, breast cancer, and stomach cancer.
- Persistent tobacco use in Asia contributed to the resurgence of lung cancer as the most common.

#### Cancer Inequities:

- Disparities were evident based on Human Development Index (HDI).
- In high-HDI countries, breast cancer diagnoses were more frequent, but lower-HDI countries faced higher mortality rates due to late diagnosis and inadequate treatment.

Absolute numbers, Incidence, Both sexes, in 2022



#### Projected Burden Increase:

- A significant rise in cancer cases is predicted, with over 35 million new cases expected in 2050.
- Factors contributing to this increase include population aging, growth, and changes in risk factor exposure related to socioeconomic development.

#### Call for Action:

- Urgent investments are needed to address global cancer inequities and ensure access to quality cancer care globally.



## Key Findings Related to India:

### Cancer Cases in India (2022):

- India reported 1,413,316 new cancer cases in 2022, with a higher proportion in females.
- Breast cancer had the highest incidence, followed by lip and oral cavity, cervix and uterine, lung, and esophageal cancers.

### Cancer-Related Deaths in India:

- India accounted for a significant share of global deaths (32.9%) and new cases (28.1%) of lip and oral cavity cancer in 2019.
- Smokeless tobacco consumption in South Asian countries, including India, played a major role in oral cancer cases.

### Cervical Cancer in India:

- India contributed to 23% of global deaths from cervical cancer.
- The five-year survival rate for cervical cancer in India was 51.7%, lower than in high-income countries.

### World Cancer Day:

#### About World Cancer Day:

- Initiated by the Union for International Cancer Control (UICC) in 2000.
- Aims to promote research, prevent cancer, improve patient services, raise awareness, and mobilize global efforts against cancer.

#### Theme 2024 - "Close the Care Gap":

- Focuses on equalizing access to systematic testing, early diagnosis, and treatment globally.

#### About Cancer:

- Cancer is a complex disease characterized by uncontrolled growth and spread of abnormal cells.
- Cancer cells can invade and destroy healthy tissues and organs, disrupting the normal cell cycle.
- The cervix is the entrance to the uterus from the vagina, and cervical cancer is linked to high-risk human papillomaviruses (HPV).

#### Government Initiatives related to Cancer:

## Interim Budget 2024-25:

- Encourages vaccination of girls aged 9-14 years to prevent cervical cancer.

### National Programmes:

- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke.
- National Cancer Grid.
- National Cancer Awareness Day.

### HPV Vaccine:

- Implementation of HPV vaccination to prevent cervical cancer.

### Conclusion:

World Cancer Day serves as a crucial platform to raise awareness about the global burden of cancer and the necessity for collaborative efforts.

**India, with its significant cancer burden, requires continued focus on prevention, early detection, and treatment to improve outcomes and reduce the impact of this formidable disease.**

### UPSC MAINS QUESTION

Q. Discuss the key findings of the World Health Organization's International Agency for Research on Cancer (IARC) regarding the Global Burden of Cancer in 2022. Evaluate the specific challenges and initiatives related to cancer in India. (150 WORDS).

## II. SPACE TECHNOLOGY

### 10. ERGOSPHERE: MAKING A BLACK HOLE WORK

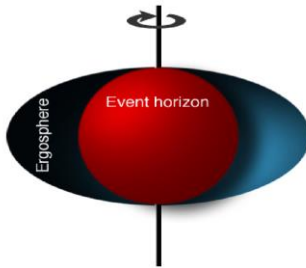
#### SOURCE: THE HINDU

#### Why in news:

Ergosphere is a unique region outside the outer event horizon of rotating black holes, also known as Kerr black holes.

- Black holes form when massive stars run out of fuel and collapse, leaving behind a gravitational singularity at their core.
- **The event horizon marks a boundary beyond which nothing, not even light, can escape the black hole's gravitational pull.**

- Just outside the event horizon, rotating black holes have an ergosphere, a larger region where objects can enter and leave if they move fast enough, but still slower than light.
- The term "ergosphere" originates from the Greek word "ergon," meaning "work," signifying the potential to extract matter and energy from this region.
- Some scientists propose using the ergosphere to accelerate objects by sending them into it and allowing them to gain speed along the black hole's rotation.
- This acceleration could result in the object exiting the ergosphere at a higher speed, causing the black hole to lose some angular momentum in the process.



## 11. INSAT-3DS MISSION TO BE LAUNCHED FROM SRIHARIKOTA

**SOURCE: THE HINDU**

**Why in news:**

The Indian Space Research Organisation (ISRO) is set to launch the INSAT-3DS mission from the Satish Dhawan Space Centre in Sriharikota.

**About INSAT-3DS:**

- INSAT-3DS, a collaborative effort between the Indian Space Research Organisation (ISRO) and the India Meteorological Organisation (IMD), is part of a series of climate observatory satellites aimed at enhancing climate services.
- Scheduled for launch using the Geosynchronous Launch Vehicle (GSLV-F14), INSAT-3DS builds upon the advancements of previous satellites in the series.



**Key Points:**

**GSLV-F14 Overview:**

- GSLV-F14 is a more advanced rocket utilizing liquid propellant and characterized by higher capacity.
- It utilizes cryogenic liquid propellants in all three stages, enabling a higher lift-off weight capacity.

**INSAT-3DR Highlights:**

- INSAT-3DR is an advanced meteorological satellite equipped with an imaging system and an atmospheric sounder.
- Notable improvements include imaging in the middle infrared band for night-time cloud and fog pictures, two thermal infrared bands for sea surface temperature estimation, and higher spatial resolution in visible and thermal infrared bands.

**Payloads:**

- INSAT-3DR carries a multispectral imager, 19-channel sounder, data relay transponder, and search and rescue transponder.

## 12. CASSINI SPACECRAFT

**SOURCE: SCIENCE.ORG**

**Why in news:**

Recent data from NASA's Cassini spacecraft has unveiled a remarkable discovery – the presence of a vast ocean beneath the icy surface of Saturn's moon Mimas.

**About Cassini Spacecraft:**

- Cassini-Huygens, a collaborative mission by NASA, ESA, and ASI, aimed to explore Saturn and its moons.



- Launched on October 15, 1997, it included NASA's Cassini orbiter and ESA's Huygens probe.
- Cassini, one of the largest interplanetary spacecrafts, orbited Saturn from 2004 to 2017, providing crucial insights into the planet and its moons.

### Spacecraft Highlights:

- Cassini carried instruments like radar and magnetometer, contributing to mapping Titan's surface and studying Saturn's magnetic field.
- Discovered six named moons and identified Enceladus and Titan as potential locations for extraterrestrial life.

### Key Facts about Mimas:

- Mimas is Saturn's smallest and innermost major regular moon, characterized by an icy, heavily cratered surface.
- Dominated by the colossal Herschel crater, measuring 80 miles (130 km) across, with a central peak soaring almost as high as Mount Everest on Earth.
- The low density of Mimas indicates its composition is primarily water ice.

### Ocean Beneath Surface:

- Cassini's data suggests the existence of a vast ocean beneath Mimas' icy exterior, expanding our understanding of the moon's composition.

## III. EMERGING TECHNOLOGIES

### 13. SENSORS MADE FROM 'FROZEN SMOKE' CAN DETECT TOXIC FORMALDEHYDE

#### SOURCE- SCIENCEDEAILY

#### Why in news:

Scientists have created a sensor using "frozen smoke" that employs artificial intelligence methods to instantly identify formaldehyde at concentrations as minimal as eight parts per

billion. This sensitivity surpasses the capabilities of the majority of indoor air quality sensors.

#### About Frozen Smoke (Aerogel):

- Developed in the 1930s, aerogel is a remarkable material known as "frozen smoke."
- Derived from gels, its name combines "aero" (air) and "gel."
- Hailed as a miracle material due to its extraordinary properties.



#### Properties of Aerogel:

##### Low Density and High Thermal Resistivity:

- Aerogel boasts a low density and high thermal resistivity.
- Highly porous structure contributes to its unique properties.

##### Lightweight and Porous Structure:

- Texture resembles a fine, dry sponge but feels much lighter.
- Holds the record as the lightest solid in the world.

##### Mechanical Properties:

- Softly pressed, it returns to its original form; harder pressure creates a dimple.
- Excessive pressure causes it to shatter like glass into tiny pieces.

##### Application in Sensor Technology:

- Aerogel-based sensor developed to detect formaldehyde in real time.
- Offers exceptional sensitivity, detecting concentrations as low as eight parts per billion.
- Utilizes artificial intelligence techniques for precise detection.

##### About Formaldehyde:

- Common volatile organic compound (VOC) emitted by household items like pressed

wood products, wallpapers, paints, and synthetic fabrics.

- Prolonged exposure to formaldehyde, even at low concentrations, can lead to serious health problems.
- Levels of formaldehyde emitted by household items can accumulate over time, posing health risks.

## 14. PM MODI FLAGS OFF FIRST INDIGENOUS HYDROGEN FUEL CELL FERRY

**SOURCE: HINDUSTANTIMES**

**Why in news:**

**Prime Minister Narendra Modi virtually flagged off India's first hydrogen fuel cell ferry boat.**

The vessel, built at Cochin Shipyard, is a 24-meter catamaran with fully air-conditioned spaces, capable of carrying 50 passengers.



**Launch Event and Project:**

- The launch event took place in Thoothukudi, Tamil Nadu, as part of a program marking the foundation stone laying for a ₹17,300-crore project.
- The hydrogen fuel vessel incorporates fully indigenous technology, aligning with India's net-zero commitments.

**Clean Energy Potential of Hydrogen Fuel:**

- **Emissions:** Hydrogen, when used in a fuel cell, produces only water vapor, making it a clean-burning energy source.
- **Versatility:** Hydrogen can be used for various applications, including fueling vehicles, generating electricity, and serving as energy storage for renewable sources.

**Applications of Hydrogen:**

- **Fueling Vehicles:** Hydrogen fuel cell electric vehicles (FCEVs) offer long range and fast refueling with zero tailpipe emissions.
- **Generating Electricity:** Hydrogen in fuel cells can generate clean electricity for homes, businesses, and power grids.
- **Energy Storage:** Hydrogen can be stored and transported to balance fluctuations in renewable energy sources.

**Production Methods:**

- Hydrogen is currently produced from fossil fuels (grey hydrogen), but renewable sources can produce green hydrogen, making it sustainable.

**Challenges:**

- **High Production Cost:** Green hydrogen production is more expensive than traditional methods.
- **Limited Infrastructure:** Widespread adoption of FCEVs requires a network of hydrogen fuelling stations.

**Conclusion:**

Hydrogen fuel presents promise as a clean and versatile energy source.

**Overcoming production cost and infrastructure challenges is crucial for its broader adoption in India and globally.**

## 15. BHARATGPT GROUP UNVEILS HANOOMAN

**SOURCE: INDIAN EXPRESS**

**Why in news:**

**The BharatGPT group, led by IIT Bombay and seven other premier Indian engineering institutes, is set to launch its ChatGPT-like service named 'Hanooman.'**

Developed in collaboration with Seetha Mahalaxmi Healthcare (SML), the initiative is backed by Reliance Industries Ltd and the Department of Science and Technology.



## Generative Pre-trained Transformers (GPTs):

- **Definition:** GPTs are large language models (LLMs) utilizing transformer neural networks to generate human-like text.
- **Training Data:** They are trained on extensive unlabelled text data from the internet, enabling them to comprehend and generate coherent and contextually relevant text.
- **Applications:** GPTs can be fine-tuned for various tasks, including language generation, sentiment analysis, language modeling, machine translation, and text classification.
- **Self-Attention Mechanism:** GPTs employ self-attention mechanisms to focus on different parts of the input text during processing, allowing them to capture more context and enhance natural language processing (NLP) performance.

## Large Language Models (LLMs):

- **Functionality:** LLMs use deep learning techniques to process large volumes of text, understanding structure and meaning through extensive training.
- **Learning from Text:** They process vast text datasets, such as Wikipedia and OpenWebText, to identify meanings and relationships between words, becoming smarter with increased training data.

## ChatGPT:

- **Definition:** ChatGPT is an advanced natural language processing (NLP) model, a variant of GPT-3, developed by OpenAI for generating human-like responses.
- **Training:** It is trained on extensive text data to provide technical, jargon-free

responses, fostering natural dialogue between users and the virtual assistant.

## Hanooman:

- **Languages:** Hanooman responds in 11 Indian languages initially, with plans to expand to more than 20 languages.
- **Multimodal AI Tool:** It goes beyond a traditional chatbot, functioning as a multimodal AI tool capable of generating text, speech, videos, and more in multiple Indian languages.
- **Application Fields:** Designed for healthcare, governance, financial services, and education, it includes a customized version called VizzhyGPT, fine-tuned for healthcare using extensive medical data.
- **Model Sizes:** The series comprises AI models ranging from 1.5 billion to an impressive 40 billion parameters, indicating its diverse capabilities and scalability.

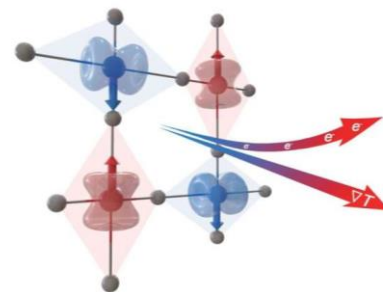
## IV. PRELIMS POINTERS IN NEWS

### 16. ALTERMAGNETS

#### SOURCE: SCIENCE.ORG

#### Why in news:

In a recent study, scientists have delved into the thermal properties of altermagnetic materials, shedding light on their unique characteristics and potential applications in spin-caloritronics.



#### About Altermagnets:

- Altermagnets represent a novel class of magnetic materials distinct from traditional ferromagnets and antiferromagnets.

## Properties:

- Blend properties of both ferromagnets and antiferromagnets.
- Exhibit zero net magnetization like antiferromagnets, yet possess non-relativistic spin splitting akin to ferromagnets.
- Unique behavior arises from complex atomic interactions within the crystal structure.

## Spin Polarization:

- Altermagnets demonstrate unique spin polarization, where electron spins preferentially align in a specific direction.
- This phenomenon occurs in both real space (physical arrangement of atoms) and momentum space.

## Role in Spin Caloritronics:

- Altermagnets hold promise for spin caloritronics, exploring the interplay between spin and heat flow.
- Potential applications include innovative technologies for information processing and storage.

## Case Study:

- Researchers focused on rubidium dioxide (RuO<sub>2</sub>) to study crystal Nernst and thermal Hall effects.
- Crystal Nernst effect (CNE) demonstrates how altermagnets respond to temperature variations, revealing insights into their magnetic-thermal relationship.

## 17. MXENES

### SOURCE- SCIENCE.ORG

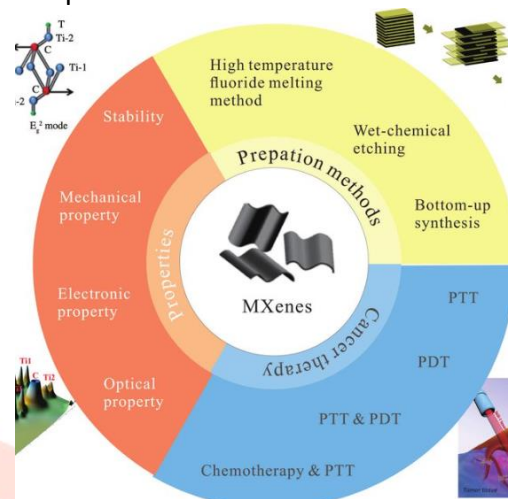
#### Why in news:

Researchers explore the use of MXene coatings to guide microwaves in space and reduce satellite payloads.

#### MXenes:

- Discovered in 2011, MXenes are ceramics forming a significant family of two-dimensional materials.

- Composed of carbides and nitrides of transition metals, like titanium, exhibiting good conductivity and volumetric capacitance.



## Composition and Structure:

- Derived from a bulk crystal called MAX, with a general formula  $M_n+1X_nT_x$ .
- M represents an early transition metal, X is carbon and/or nitrogen, and T is a functional group (O, OH, F) on the MXene surface.
- Titanium carbide (Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>) is a widely used type of MXene.

## Applications of MXenes:

- High conductivity and large surface area make MXenes suitable for various applications.
- Include energy storage (lithium-ion batteries, supercapacitors), electromagnetic interference shielding, catalysis, sensors, and water purification.

## Transition Metals:

- Transition metals have valence electrons in two shells, possessing unique chemical bonding capabilities.
- Occupying the middle sections of the periodic table, they exhibit high melting points, densities, and act as catalysts.
- Notable transition metals include titanium, iron, nickel, and copper, with iron being the most abundant in Earth's solid crust.

## 18. FLUE CURED TOBACCO

**SOURCE: INDIAN EXPRESS**

**Why in news:**

The Government of India has allowed the sale of Flue Cured Virginia (FCV) Tobacco on the Tobacco Boards auction platform.

Penalties on the sale of excess production by registered growers and unauthorized production by unregistered growers in Karnataka have been waived off.



**About Flue Cured Tobacco:**

**Curing Process:**

- Process to prepare harvested tobacco leaves for the market.
- Standardized method, especially in FCV tobacco, involves achieving desirable qualities and removing moisture.

**Types of Curing:**

- Air-Cured, Fire-Cured, and Flue-Cured are traditional methods.
- Each method results in distinct tobacco products based on nicotine content and aroma.

**Why Tobacco is Cured:**

- Essential for creating smoking tobacco.
- Wet, green tobacco leaves initially have too much moisture and chlorophyll.
- Curing removes excess moisture and releases chlorophyll, imparting flavor and scent to smoked tobacco.

**Key Characteristics of FCV Tobacco:**

- **Production:** Mainly used for cigarette tobacco.

- **Content:** High sugar, medium to high nicotine levels.
- **Flavor and Aroma:** Rich in natural tannins, providing a distinct mild and slightly sweet flavor.
- **Production in India:** FCV Tobacco is primarily produced in two states, Andhra Pradesh and Karnataka.

## 19. SOLAR MAXIMUM

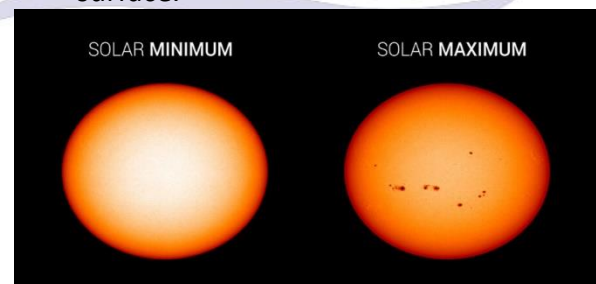
**SOURCE: INDIAN EXPRESS**

**Why in news:**

The European Space Agency's visualization highlights increased activity on the sun's surface as it approaches the solar maximum in the current cycle.

**Solar Maximum:**

- The sun, a massive ball of hot, electrically charged gas, undergoes a natural solar cycle roughly every 11 years.
- The solar cycle involves the winding and flipping of the sun's magnetic field, reaching a dense point marking the Solar Maximum, occurring midway through the cycle.
- Solar Maximum is characterized by an increased number of sunspots on the sun's surface.



**Solar Activity Signs:**

- As the sun approaches the solar maximum, visible signs include vibrant explosions, dark sunspots, loops of plasma, and swirls of super-hot gas.

**Impacts of Solar Maximum:**

- Increased solar activity during this phase can lead to extreme space weather events like solar flares and eruptions.



- These events have potential consequences such as disruptions to radio communications, the power grid, and health risks for astronauts.

### Understanding Sunspots:

- Sunspots are dark, planet-size regions with strong magnetic fields on the sun's surface.
- They form when magnetic field concentrations rise from deep within the sun.
- Sunspots consist of a central darker area (umbra) and a surrounding region (penumbra).
- The frequency and intensity of sunspots indicate the level of solar activity during the 11-year solar cycle, driven by the sun's magnetic field.

## SECURITY

### I. PRELIMS POINTERS IN NEWS

#### 1. REC FOUNDATION CONTRIBUTES TO ARMED FORCES FLAG DAY FUND

##### SOURCE: PIB

##### Why in news:

REC Limited, a Maharatna Central Public Sector Enterprise under the Ministry of Power, has made a significant contribution to the Armed Forces Flag Day Fund (AFFDF).

##### Objective of AFFDF:

- The fund is established to support Armed Forces veterans, widows, dependents, and institutions rehabilitating paraplegic soldiers.

##### Significance of Armed Forces Flag Day:

- AFFD India is observed annually on December 7th since 1949, honoring the service of India's soldiers and veterans.

##### REC Limited's Commitment:

- REC, registered as a Non-Banking Finance Company (NBFC) and Infrastructure Financing Company (IFC), has demonstrated a steadfast commitment to the welfare of armed forces personnel.

##### REC's Role in National Initiatives:

- REC Ltd. plays a crucial role in government flagship schemes, including Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGAYA), Deen Dayal Upadhya Gram Jyoti Yojana (DDUGJY), and National Electricity Fund (NEF) Scheme.
- The company's financial support has contributed to the success of initiatives ensuring last-mile distribution, 100% village electrification, and household electrification in the country.



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## 2. CHINOOK HELICOPTER PRECAUTIONARY LANDING IN PUNJAB

### SOURCE: NDTV

#### Why in news:

Recently, an Indian Air Force Chinook helicopter made a precautionary landing in Punjab's Barnala due to a technical snag.

#### About Chinook Helicopter:

- **Role:** It serves as the primary heavy troop and supply transport aircraft for the U.S. Army and international defence forces.
- **Manufacturer:** Boeing, an American aerospace and defence firm.
- **Usage:** Used for troop transportation, artillery movement, and logistics support on the battlefield.
- **India's Fleet:** India operates around 15 CH-47 Chinook helicopters.



#### Features:

- **Design:** Twin-engine, tandem rotor heavy-lift helicopter.
- **Cockpit:** Equipped with a fully integrated digital cockpit management system.
- **Cargo Handling:** Advanced capabilities for handling troops, artillery, and supplies.
- **Airframe:** Monolithic structure with vibration reduction.
- **Speed:** Capable of reaching a maximum speed of 160 knots (296 kmph).
- **Cargo Capacity:** Can carry up to 55 troops or approximately 10 tonnes of mixed cargo.

- **Hook System:** Features a triple hook system providing stability for large external loads or multiple external loads.

## SOCIETY

### I. VULNERABLE SECTIONS OF THE SOCIETY

#### 1. ONE STOP CENTRES (OSCs): EMPOWERING WOMEN AND ENSURING SAFETY

### SOURCE: INDIAN EXPRESS

#### Why in news:

The establishment of OSCs in over 700 districts across the nation marks a significant step towards women's safety and empowerment, providing a comprehensive support system for those in need.

#### About One Stop Centre Scheme:

- **Central Sponsorship:** The One Stop Centre scheme is a Centrally Sponsored Scheme under the Union Ministry of Women and Child Development (MWCD).
- **Inception:** Operational since April 1, 2015, it primarily addresses Gender-Based Violence.
- **Universal Reach:** Aims to support all women, irrespective of age, caste, class, religion, region, sexual orientation, or marital status.
- **Protection for Minors:** Collaborates with authorities under the Juvenile Justice Act and Protection of Children from Sexual Offences Act for girls below 18.

#### Objectives:

- **Holistic Support:** Provides comprehensive and integrated assistance for women facing violence, addressing all aspects under one roof.
- **Immediate Access:** Ensures immediate access to medical, legal, psychological, and



counseling support, standing against all forms of violence.

#### Funding and Administration:

- **Financial Backing:** Funded through the Nirbhaya Fund, with 100% financial assistance from the Central Government.
- **Local Administration:** Day-to-day implementation and administration under the District Collector/District Magistrate.

#### Services Offered by OSCs:

One Stop Centres serve as a lifeline for women, offering essential services such as:

1. Emergency Response and Rescue Services
2. Medical Assistance
3. Assistance with lodging FIR/NCR/DIR
4. Psycho-social Support and Counselling
5. Legal Aid and Counselling
6. Shelter
7. Video Conferencing Facility

## 2. CARING FOR THE ELDERLY

#### SOURCE: THE HINDU

#### Why in news:

Countries like Italy and China are grappling with the complexities posed by unfavourable demographics, and India is not exempt from these challenges.

The nation is witnessing an ageing population, a declining fertility rate, and an increased life expectancy, signalling an impending shift in its demographic dividend.

To address the needs of the growing senior population, NITI Aayog has released a paper on senior care reforms in India, shedding light on deficiencies in regulatory provisions, accessibility, and service implementation in senior care.

#### Projections for India:

- **Current Scenario:** Senior citizens (60 years and above) constitute nearly 10% of the population, accounting for approximately 104 million individuals.
- **2050 Projections:** The elderly population is estimated to surge to 319 million,

constituting nearly 19.5% of the total population.

#### Anticipated Impacts:

- **Shifting Disease Burden:** A rise in chronic diseases among the elderly.
- **Rising Dependency Ratios:** Increased dependence on the working-age population for support.
- **Evolving Family Structures:** Changes in the traditional joint family system.
- **Altered Consumption Patterns:** Shifts in the market dynamics due to changing consumer needs.
- **Structural Changes in Labour Markets:** Impacts on employment structures and demands.

#### Challenges Faced by the Elderly:

- **Disease Burden:** 75% of the elderly grapple with chronic diseases, with a significant portion facing depressive symptoms.
- **Lack of Proper Geriatric Illness Management:** Insufficient focus on managing age-related health concerns.
- **Increased Medical Expenditure:** Rising healthcare costs for the elderly.
- **Inaccessible Physical Infrastructure:** Infrastructure not adapted to the needs of the elderly.
- **Deficient Financial Planning:** Lack of adequate financial preparations for old age.
- **Food Insecurity:** Inadequate access to proper nutrition.
- **Loneliness:** Nuclear family structures contribute to increased loneliness, affecting the mental health of the elderly.
- **Fragmented Social Safety Nets:** A significant portion of the elderly lacks pensions and health insurance coverage.

#### Recommended Solutions:

- **Healthcare Improvements:** Enhancing wellness and therapeutic interventions, strengthening physical and mental health services, and developing emergency response infrastructure.





- **Use of Technology:** Integrating technology into healthcare through wearable devices, AI-based smart housing, and a robust telemedicine market to transform the lives of seniors.
- **Social Security:** Expanding the coverage of pensions, introducing geriatric health insurance plans, and implementing GST reforms on senior care products to create a comprehensive social safety net.
- **Role of Private Sector:** Encouraging private-sector and non-profit voluntary organizations to play a vital role in meeting the diverse needs of the elderly.
- **Changes in Employment Models:** Rethinking retirement age to accommodate increased life expectancies, fostering more flexible working models, and unlocking the benefits of the longevity dividend.

## UPSC MAINS QUESTION

Q. Discuss the potential impacts of the ageing population on various aspects of society and the economy and propose strategies to address the evolving needs of the elderly population in India. (150 WORDS)

## 3. NEARLY 50% OF PREGNANCIES IN INDIA ARE HIGH-RISK

### SOURCE: THE HINDU

#### Why in news:

A recent study published in the *Journal of Global Health*, conducted by researchers from the ICMR's National Institute for Research in Reproductive and Child Health (NIRRH) in Mumbai, brings to light the alarming prevalence of high-risk pregnancies across India.

High-risk pregnancies pose increased health complications for both the mother and the baby, along with a higher likelihood of preterm delivery.

#### Key Findings of the Study:

#### High Prevalence:

- The study reveals that a staggering 49.4% of pregnant women in India experience high-risk pregnancies.
- Among them, approximately 33% face a single high-risk factor, while 16% encounter multiple high-risk factors.

#### Regional Disparities:

- Certain states, including Meghalaya, Manipur, and Mizoram, alongside Telangana, exhibit the highest prevalence of high-risk factors.
- Conversely, Sikkim, Odisha, and Chhattisgarh report the lowest prevalence of high-risk pregnancies.

#### Factors Contributing to High-Risk Pregnancies:

##### Birth Spacing:

- Short birth spacing, defined as less than 18 months between the previous birth and the current conception, emerges as a primary factor contributing to high-risk pregnancies.

##### Maternal Risk Factors:

- Maternal age, particularly being either adolescent or older than 35 years, is identified as a contributing factor.
- Short stature and a higher body mass index (BMI) are also associated with high-risk pregnancies.

##### Lifestyle and Previous Birth Outcome Risks:

- Lifestyle factors such as tobacco and alcohol use contribute significantly.
- Previous adverse birth outcomes, including miscarriage, abortion, or stillbirth, are significant contributors to high-risk pregnancies.

#### Indian Government Initiatives Related to Pregnant Women:

##### Pradhan Mantri Matru Vandana Yojana (PMMVY):

- Implemented under the National Food Security Act, it provides financial support to pregnant and lactating mothers, aiming to enhance the health and nutrition of both mother and child.

##### Janani Suraksha Yojana (JSY):

- Offers cash assistance to pregnant women, especially from vulnerable sections, encouraging institutional delivery.

### Janani Shishu Suraksha Karyakram (JSSK):

- Entitles pregnant women to free delivery, including C-sections, in public health institutions, along with free transport, diagnostics, medicines, and diet.

### Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA):

- Ensures pregnant women receive free and quality antenatal checkups by a Specialist/Medical Officer on the 9th day of every month.

### Surakshit Matratva Ashwasan (SUMAN):

- Aims to provide dignified and cost-free healthcare for every pregnant woman and newborn in public facilities.

### LaQshya:

- Aims to enhance the quality of care in labour rooms, thereby reducing complications and improving maternal and newborn outcomes.

## 4. FEMALE GENITAL MUTILATION

### SOURCE: THE HINDU

#### Why in news:

Recently, UN agencies raised an alarming concern, stating that nearly 4.4 million girls worldwide are at risk of female genital mutilation (FGM) in 2024.

#### Understanding Female Genital Mutilation (FGM):

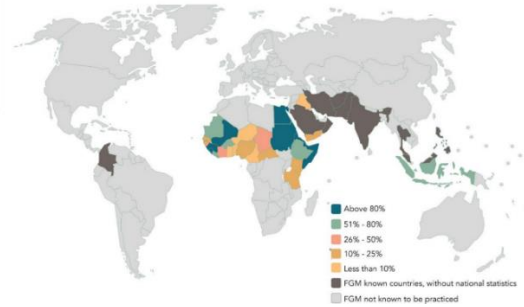
##### Definition:

- FGM encompasses all non-medical procedures altering or injuring female genitalia.
- Internationally condemned as a violation of human rights.

##### Prevalence:

- Concentrated in Western, Eastern, and North-Eastern Africa, as well as certain Middle Eastern and Asian countries.
- Global concern due to increased migration, affecting girls and women in Europe, Australia, and North America.

GLOBAL PREVALENCE OF FGM



#### Impacts:

- Short-term complications: severe pain, shock, bleeding, infections, and difficulty in urination.
- Long-term consequences: affect sexual, reproductive health, and mental well-being.

#### Status in India:

- No legislation currently bans FGM in India.
- Unofficial reports suggest prevalence in the Bohra community in states like Maharashtra, Kerala, Rajasthan, Gujarat, and Madhya Pradesh.

#### Challenges in Eradicating FGM:

##### Cultural and Social Norms:

- Deeply rooted in cultural and social norms.
- Passed down through generations as a tradition, making change challenging.

##### Lack of Awareness and Education:

- Lack of understanding of harmful consequences within practicing communities.
- Insufficient awareness and education perpetuate the continuation of the practice.

##### Lack of Adequate Data:

- Limited data collection and reporting hinder effective interventions.
- Understanding the scope of the issue is essential for targeted efforts.

#### Global Initiatives Towards Eradication:

##### UN Programs:

- UNFPA and UNICEF lead the largest global program on FGM elimination since 2008.
- International Day of Zero Tolerance for Female Genital Mutilation designated on 6th February since 2012.

## 2024 Theme: Her Voice. Her Future:

- UN aims for complete elimination by 2030, aligning with Sustainable Development Goal 5 (SDG 5.3).
- SDG 5.3 aims to eliminate harmful practices like child marriage and FGM.

### Way Forward:

#### Legislation and Policy Enforcement:

- Strengthen existing laws to explicitly ban FGM.
- Impose penalties for those performing or facilitating it.
- Ensure effective enforcement through law enforcement agencies.

#### Awareness and Education:

- Launch comprehensive awareness campaigns.
- Educate communities about the harmful effects on physical, psychological, and sexual health.
- Target both practicing communities and others.

#### Inclusion in Human Rights Framework:

- Ground efforts to combat FGM in human rights principles.
- Advocate for the inclusion of FGM prevention and response measures in the international human rights framework.

### Conclusion:

The alarming statistics on the risk of FGM highlight the urgent need for comprehensive global efforts. Strengthening legislation, raising awareness, and advocating for human rights principles are crucial steps.

**The UN's commitment to eliminate FGM by 2030, along with Sustainable Development Goal 5.3, underscores the collective responsibility to protect the rights and well-being of girls and women worldwide.**

### UPSC MAINS QUESTION

Q. Examine the global challenges posed by female genital mutilation (FGM) and evaluate the strategies proposed by international organizations

and governments to eradicate this harmful practice. (150 WORDS)

## II. HEALTH SECTOR

### 5. HIGHER AUTONOMY OF PANCHAYATS LEADS TO BETTER HEALTH OUTCOMES

#### SOURCE: THE HINDU

#### Why in news:

Panchayats with greater autonomy exhibit better health, nutrition, and sanitation outcomes in rural areas.

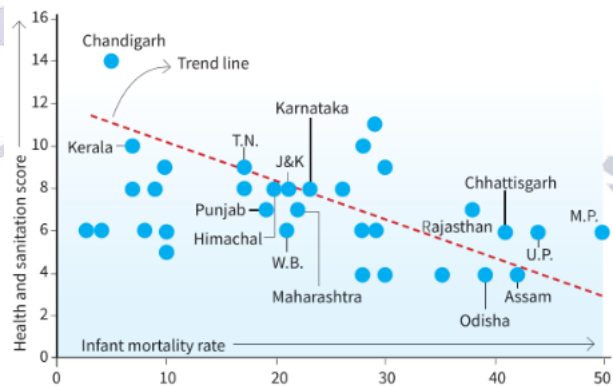
#### Collaboration in Healthcare:

Panchayats work with health departments to maintain rural clinics and dispensaries, promoting institutional deliveries, prenatal and postnatal check-ups, and sanitation facilities, thus reducing maternal and infant mortality rates.

#### Data Analysis:

A Reserve Bank of India (RBI) study emphasizes the need for increased autonomy for panchayats based on their role in local governance and health management.

**Chart 1:** The chart shows the State/UT-wise avg. of panchayat-level health, nutrition and sanitation scores (vertical axis) and infant mortality rate (horizontal axis)



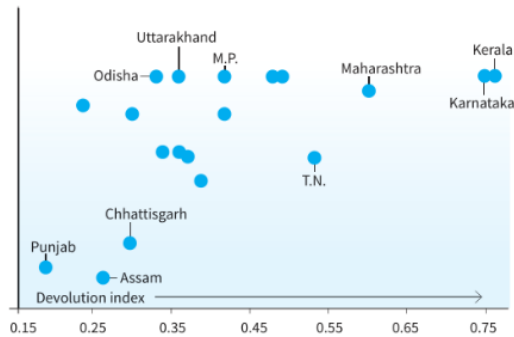
- Leading states like Kerala, Tamil Nadu, and Himachal Pradesh exhibit high scores and low IMRs, while states like Madhya Pradesh and Uttar Pradesh show the opposite trend.

#### Devolution Index and Autonomy:

- Chart 2 evaluates states' devolution index, measuring the transfer of subjects, functionaries, and finances to panchayats.

- States with higher devolution scores, like Kerala and Maharashtra, tend to perform better in health indicators.

**Chart 2:** The chart shows the devolution index calculated by the Ministry of Panchayati Raj, across States



The index reflects the degree of decision-making power and resource control granted to panchayats, influencing health outcomes positively.

## 6. OVER 3 LAKH ASHAS APPLY FOR CENTRE'S HEALTH COVER

### TOPIC – (GS3) ECONOMY: SOURCE- THE HINDU

#### Why in news:

The Central government has taken a significant step by extending the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) health coverage to Accredited Social Health Activists (ASHAs) along with Anganwadi workers and helpers.

The Health Ministry is actively processing the details to issue healthcare cards for these workers by the end of the month, with the scheme scheduled to come into effect from March 1.

#### Key Components of AB-PMJAY:

AB PM-JAY provides a health cover of Rs. 5 lakh per family for secondary and tertiary care.

Secondary care involves regular medical treatments, while tertiary care includes specialized treatments by super specialists.

#### Cashless and Paperless Access:

- Beneficiaries enjoy cashless and paperless access to services at the point of service.
- Health Benefit Packages cover surgery, medical and day care treatments, as well as the cost of medicines and diagnostics.

#### Packaged Rates:

- Hospitals charge fixed packaged rates for various services to avoid separate charges for each product or service.

#### Entitlement-Based Scheme:

- Beneficiaries are identified based on the latest Socio-Economic Caste Census (SECC) data.
- Once identified, beneficiaries can seek services at any empanelled hospital.

#### Funding and Nodal Agencies:

##### Funding Structure:

- Funding is shared, with states contributing 40% (60:40 for states/UTs with legislature, 90:10 in Northeast states, J&K, Himachal, Uttarakhand, and 100% for UTs without legislature).

##### Nodal Agencies:

- The National Health Authority (NHA) and State Health Agency (SHA) are key entities overseeing implementation.

#### Challenges:

##### State Cooperation:

- Cooperation of states is crucial for harmonizing existing state health insurance schemes with PM-JAY.
- Some states like West Bengal, Telangana, Odisha, and Delhi haven't implemented PM-JAY.

##### Health Capacities:

- Public sector health capacities need improvement, requiring partnerships with the private sector.
- Providers must be held accountable for services.

##### Avoiding Unnecessary Treatment:

- Contracts with healthcare providers must emphasize adherence to guidelines and treatment protocols to prevent unnecessary treatments.

#### Achievements:

##### Impact on the Poor:

- In the initial 200 days, PM-JAY benefited over 20.8 lakh poor individuals with free treatments worth Rs. 5,000 crores.

## During Covid-19:

- PM-JAY's portability allowed eligible migrants to access services in any empanelled hospital across the country during the pandemic, irrespective of their state of residence.

## ASHAs' Contribution and Role:

### Evolution of ASHA Programme:

- ASHA programme has evolved over the last decade and a half.
- Recognized for substantial contributions in improving community healthcare access.

### Key Roles:

- ASHAs serve as facilitators, mobilizers, and providers of community-level care.
- Integral part of community platforms like Village Health and Sanitation Committees, Mahila Arogya Samiti, and Community-Based Planning and Monitoring.
- Played a critical role in the country's COVID-19 response and continued support for essential health services.

### Numbers:

- Over 13 lakh Anganwadi workers and over 10 lakh anganwadi helpers in the country as of December 31, 2023.
- India has 9.83 lakh ASHAs, making it the world's largest community volunteer programme.

### AB-PMJAY Figures:

**Current Coverage:** AB-PMJAY covers 55 crore individuals corresponding to 12 crore families in India.

### Health Cards and Admissions:

- Approximately 28.45 crore Ayushman cards created till December 20, 2023.
- 6.11 crore hospital admissions amounting to ₹78,188 crore authorized under the scheme.
- 26,901 hospitals, including 11,813 private hospitals, empanelled under AB-PMJAY.

### Gender Equity:

- Scheme ensures gender equity with women constituting approximately 49% of

total Ayushman cards and 48% of total authorized hospital admissions.

### Conclusion:

The inclusion of ASHAs in AB-PMJAY reflects a transformative step in recognizing and supporting the vital role played by these community healthcare workers.

This extension of health coverage is expected to enhance the well-being of ASHAs and contribute to the overall improvement of community healthcare in the country.

### UPSC MAINS QUESTION

Q. Discuss the significance of extending the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) health coverage to Accredited Social Health Activists (ASHAs) in India. (150 WORDS)

## III. EDUCATION SECTOR

### 7. NCTE AWAITS MINISTRY NOD TO ROLL OUT NATIONAL MISSION FOR MENTORING

#### SOURCE: THE HINDU

#### Why in news:

The National Council of Teacher Education (NCTE) is awaiting approval from the Ministry of Education to implement the National Mission for Mentoring (NMM), aimed at providing mentoring to schoolteachers.



#### Key points:

- The NCTE plans to expand the pool of mentor teachers from 60 to 1,000 to support the NMM initiative.

- **Currently, the NMM is in the pilot phase**, with about 700 mentee teachers registered on the NMM portal.
- **The mission focuses on various areas of mentoring**, including instructional modules on Hindi and Mathematics across different school sections, digital education, and socio-emotional learning.
- Other areas of mentoring identified by the mission include inclusive education, professionalism and ethics, classroom management, 21st-century skills, interpersonal skills, action research projects, art-integrated pedagogy, and teacher's mental health engagement.
- Notably, **30 out of the 60 mentor teachers are Padma awardees**, highlighting the calibre of mentors involved in the initiative.
- The **NMM aligns with the National Education Policy 2020**, emphasizing continuous professional development for teachers.
- The mission **aims to create a large pool of professionals to support teachers' professional and personal growth nationwide**.
- Financial support has been allocated, with ₹1.28 crore utilized for digital infrastructure in 2021-22 and an additional ₹2 crore for the pilot phase in 2022-23.
- A **draft document, "The Bluebook," outlining the NMM**, has been prepared by the NCTE, awaiting approval for nationwide implementation.

## 8. SWAYAM PLUS

### SOURCE: THE HINDU

Why in news:

The Ministry of Education (MoE) launched SWAYAM Plus, an extension of the Massive Open Online Course platform SWAYAM.

- Aligned with the National Education Policy 2020, SWAYAM Plus offers industry-

relevant courses to enhance learners' employability in collaboration with industry leaders.

- **The platform incorporates innovative features such as multilingual content, AI-enabled guidance, credit recognition, and pathways to employment.**
- The implementation is entrusted to IIT Madras, appointed as the nodal agency, and is funded by the MoE and the Department of Higher Education.
- **The initiative signifies a commitment to providing diverse educational opportunities while addressing the evolving needs of learners and industries.**

## IV. WELFARE SCHEMES, MECHANISMS, LAWS, AND INSTITUTIONS RELATED TO ST.

### 9. GREAT NICOBAR: INDIAN PRESIDENT VISITS ISLAND AS FEARS GROW FOR SHOMPEN TRIBE

#### SOURCE: BCC

Why in news:

India's President recently visited an island marked for multi-billion-dollar development, raising concerns about the potential threat to the indigenous Shompen tribe residing there.

**Shompen Tribe:**

The Shompen tribe is among the most isolated communities globally, located in the dense tropical rainforest of Great Nicobar Island in the Andaman and Nicobar group of Islands.



**Least Studied Tribal Group:**

- Designated as a Particularly Vulnerable Tribal Group (PVTG), the Shompen remain



one of India's least studied tribes, with an estimated 2011 population of 229 individuals, although the exact figure remains unknown.

### **Isolation and Livelihood**

- The Shompen people, mostly uncontacted, live in small groups relying on hunting, gathering, fishing, and rudimentary horticultural activities.
- They exhibit semi-nomadic lifestyles and depend on the forest for sustenance.

### **Unique Culture and Language:**

- Shompen follow distinct cultural practices, including their own language with multiple dialects.
- Bands within the tribe may not understand each other's dialects.

### **Physical Characteristics and Family Structure:**

- Physically, Shompen individuals are of short to medium stature, displaying Mongoloid features.
- Their families are nuclear, controlled by the eldest male member, adhering to monogamy, with polygamy allowed.

### **Need for Preservation:**

- Experts warn that the development could pose a threat to the Shompen tribe's existence, emphasizing the importance of preserving their unique culture and ensuring their rights amid changing landscapes.

### **UPSC MAINS QUESTION**

Q. Discuss the significance of preserving the unique culture and rights of the Shompen tribe in the face of proposed multi-billion-dollar development on Great Nicobar Island, (150 WORDS)