GALLANT IAS ACADEMY

ASCEND PRELIMS 2025

CURRENT AFFAIRS

YEARLY COMPILATION

APRIL 2024 TO FEBRUARY 2025

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Polity & Governance

Interim Bail and Anticipatory bail

What's the Buzz?

> SC grants Delhi ex-CM Aravind Kejriwal Interim Bail

Background

- It is basically for a **short duration and before the hearing or final disposal of regular or anticipatory bail application**

- Importance of Interim Bail:

  - Interim bail is important as when application for regular or anticipatory bail goes to court, certain documents are required like charge sheet or case diary etc. so that court can judiciously decide the application

  - But this process requires time and the accused has to remain in legal custody until the court gets the documents and can decide the bail application.

- The Interim bail **can be extended for more time** if the period expires and court thinks fit

- It is a measure especially to safeguard the reputation of an accused

- Granting of interim bail is the discretion of the Court

Comparison between Anticipatory and Regular Bail

Feature	Anticipatory Bail	Regular Bail
When is it applied?	Before arrest (to prevent arrest)	After arrest (to get released)
Who grants it?	High Court or Sessions Court	Any Court (Magistrate, Sessions, High Court)

Why is it needed?	When a person fears arrest for a **non-bailable offence**	When a person is already arrested and wants freedom
Key Condition	Person hasn't been arrested yet	Person is already in custody
Purpose	To prevent unnecessary harassment	To ensure release while trial is ongoing

UPSC Relevance

> Bail-related issues have appeared in Prelims and MainsE.g: Prelims 2022

Source: *https://ujala.uk.gov.in/files/ Interim_ Bail_ by_Ramesh _Singh.pdf*

Model code of conduct

What's the Buzz?

> The Model Code of Conduct (MCC) is in the spotlight due to violations by senior politicians during the 18th Lok Sabha election campaign

Background

- The Model Code of Conduct (MCC) is a set of guidelines that political parties and candidates must follow during elections

- It was created with the agreement of all political parties to ensure **free and fair elections** and to maintain ethical conduct throughout the electoral process

- **MCC is not legally binding**

- **The Election Commission of India (ECI)** is responsible for enforcing the MCC under **Article 324** of the Indian Constitution

- The MCC ensures that:

- The ruling party does not misuse government machinery for election purposes
- Electoral offenses, malpractices, and corrupt practices are prevented

- The MCC comes into effect from the date the Election Commission announces the election schedule and remains in force until the entire election process is completed

- MCC was first introduced in Kerala State Assembly election in 1960

UPSC Relevance

Frequently asked in Prelims (e.g., 2019: MCC enforcement) and Mains (e.g., role in free elections, 2018)

Source: *https://www.eci.gov.in/mcc/*

National Anti-Doping Agency (NADA)

What's the Buzz?

The National Anti-Doping Agency (Nada) has expanded its purview and included more elite cricketers in its comprehensive anti-doping programme

निष्पक्ष खेल
Play fair

Background

- NADA India implements the anti-doping programme in India, in line with the **World Anti-doping Code 2021**

- It works in close collaboration with the sport ecosystem to create a dope-free sporting environment in the country

- It works under the **Ministry of Youth Affairs & Sports, Government of India**

- It was set up as a registered society under the Societies Registration Act of 1860 in November 2005

World Anti-Doping Agency

- It is a foundation initiated by the **International Olympic Committee** to promote, coordinate and monitor the fight against drugs in sports

- **Headquarters:** Montreal, Quebec, Canada

Doping

- Doping refers to the use of prohibited artificial substances, which are often illegal, to boost performance and gain an edge over competitors in sports

- It can also involve other techniques, such as enhancing oxygen levels in the blood through methods like blood transfusions

UPSC Relevance

Ethics in sports have appeared in Mains

Source: *https://nadaindia.yas.gov.in/*

Charge sheet

What's the Buzz?

Victim-Centric Measures of New Criminal Laws in India (BNS, BNSS, BSA, 2023)

Background

- A chargesheet is the **final document** prepared by the police or investigating officer after completing an investigation in a case, whether it involves a cognizable or non-cognizable offense

- It is also called a **Police Report or Final Report**

- It includes a detailed record of the

entire investigation process, starting from the filing of the First Information Report (FIR) to the conclusion of the inquiry

Submission and Role

- The police must **submit the chargesheet to the court before any trial can start** Once submitted, it triggers the beginning of legal prosecution against the accused

- The format of the charge sheet must follow the guidelines set by the state government

Time Limits for Filing

- It must be completed within 60 days for cases in lower courts and 90 days for cases in Sessions courts

- If not filed within these timeframes, the accused can claim default bail

Is Filing Mandatory?

- In **cognizable offence cases**, the police must file a chargesheet after an FIR, either on their own or as directed by the court

- In **non-cognizable offense cases**, it's not mandatory unless the court orders an investigation

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2082757#:~: text=File%20FIR%20at%20Any%20Police, immediate%20reporting%20of%20the%20offence*

First Investigation Report

What's the Buzz?

Victim-Centric Measures of New Criminal Laws in India (BNS, BNSS, BSA, 2023)

Background

- **F**IR stands for First Information Report. It is a written record created by the police when they receive information about a cognizable offense

- **Anyone aware of such an offense— whether a victim, witness, or bystander**—can file an FIR.It must be written down and signed by the person providing the information

Key Details in an FIR

- ☐ Description of the offense that occurred

- ☐ Date, time, and location where the offense took place

- ☐ Information about the accused, if available

- ☐ Details of the informant (the person reporting the offense

Key Details in an FIR

- ☐ Once an FIR is lodged, the police must start investigating the case

- ☐ If there's evidence or suspicion, the police can arrest the accused without a warrant

- ☐ They may also search premises and collect evidence relevant to the case

Zero FIR

- Allows a person to file a First Information Report (FIR) at any police station, even if the offense occurred outside that station's area (jurisdiction)

- It help victims of serious crimes to file a complaint more quickly and freely

- It also helps to prevent the loss or tampering of evidence and witnesses due to delays in filing the complaint

- After a Zero FIR is filed, it is transferred to the appropriate police station for further investigation

- Zero FIR was introduced based on the recommendation of the Justice Verma Committee, which came after the 2012 Nirbhaya gang rape case

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2082757#:~: text=File%20FIR%20at%20Any%20Police, immediate%20reporting%20of%20the%20offence*

Pink Booth

What's the Buzz?

Initiative of the Election Commission of India to celebrate women empowerment

Background

- Pink Booths are special polling stations set up by the **Election Commission of India (ECI), fully managed and staffed by women.**
- It encourage female voter participa- tion and promote gender empower- ment during elections

Source: *https://ecisveep.nic.in/*

Parliamentary Security Services

What's the Buzz?

On May 20, 2024, the Central Industrial Security Force (CISF)assumed security duties for most of the Parliament House complex in New Delhi, replacing the Central Reserve Police Force (CRPF)

Background

- Parliamentary Security Services was established in 1929 as the **Watch and Ward Staff** after **Bhagat Singh and Batukeshwar Dutt** bombed the Central Legislative Assembly (now Samvidhan Sadan)
- It was renamed to Parliamentary Security Services in 2008 under P.D.T. Acharya
- Now, security of parliament remains under the Lok Sabha Secretariat, but orders stem from the MHA, not the Speaker, raising concerns about parliamentary autonomy

Comparison between CISF and CRPF

Aspect	CISF (Central Industrial Security Force	CRPF (Central Reserve Police Force)
Primary Role	Secures critical infrastructure (e.g., airports, Parliament since May 2024).	Ensures internal security and counters insurgency (e.g., J&K, Naxal areas).
Nature of Duties	Static security and public interaction at key installations.	Dynamic operations like riot control and combat missions.
Deployment Focus	Specific sites: airports, metros, PSUs, govt buildings.	Nationwide: conflict zones, elections, law enforcement.
Ministry	Ministry of Home Affairs (MHA).	Ministry of Home Affairs (MHA).
Established By	Central Industrial Security Force Act, 1968 (enacted 1969).	Central Reserve Police Force Act, 1949 (enacted 1949).

UPSC Relevance

Parliamentary functioning questions appear in Prelims (e.g., 2016: Lok Sabha procedures)

Source: *https://www.thehindu.com/news/national/questions-arise-around-role-of-oldest-security-wing-in-parliament-in-the-face-of-cisf-takeover/article68196935.ece*

Collegium system in India

What's the Buzz?

The validy of Collegium is questioned

Background

- It is a judge-led mechanism for appointing and transferring judges, evolved through SC judgments

- Eventhough **Articles 124(2) and 217** govern the appointment of **Supreme Court (SC) and High Court (HC) judges**, respectively.

- **Collegium system is not enshrined in the Constitution or an Act.**

Evolution of Collegium System

- **First Judges Case (1981):** Ruled that the Executive could reject the Chief Justice of India's (CJI) recommendations for strong reasons, prioritizing Executive dominance in appointments for 12 years

- **Second Judges Case (1993):** Introduced the Collegium system, interpreting "consultation" as "concurrence" with the CJI.CJI's opinion must reflect collective input from the two senior-most SC judges

- **Third Judges Case (1998):** Expanded the SC Collegium to five members (CJI + four senior-most judges) following a Presidential reference under Article 143

- **Third Judges Case (2015):** Declared the National Judicial Appointments Commission (NJAC) unconstitutional. The case reaffirmed the collegium system for appointing judges

Structure of Collegium System

- ◊ **SC Collegium:** Led by the CJI, includes four senior-most SC judges.

- ◊ **HC Collegium:** Headed by the HC Chief Justice, with two senior-most HC judges

Compariosn between Collegium System and National Judicial Appointments Commission (NJAC)

Aspect	Collegium System	NJAC (National Judicial Appointments Commission)
Composition	Comprises only judges: CJI + 4 senior-most SC judges (for SC); CJI + 2 senior-most SC judges (for HC). No executive role in initiating picks.	A 6-member panel: CJI (Chair), 2 senior-most SC judges, Union Law Minister, 2 eminent persons (nominated by CJI, PM, and Leader of Opposition). Included executive and civil society.

UPSC Relevance

Judiciary related questions asked in Mains previously (e.g., judicial appointments) and prelims

Source: *https://www.thehindu.com/news/national/questions-arise-around-role-of-oldest-security-wing-in-parliament-in-the-face-of-cisf-takeover/article68196935.ece*

Exit Polls and Opinion Polls

What's the Buzz?

Election Results 2024
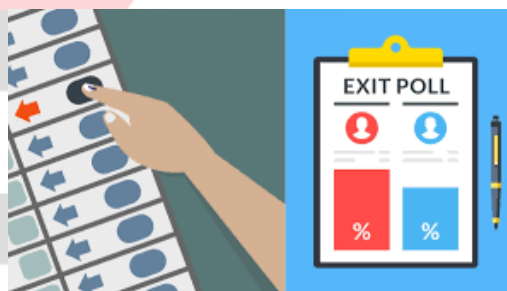
Background

Aspect	Exit Polls	Opinion Polls
Major Difference: Timing	Conducted **after voting** on election day, capturing actual voter choices	Conducted **before voting**, reflecting voter intentions ahead of time

International practices

- **United Kingdom:** Opinion poll results can be published freely with no restrictions. However, exit poll results are prohibited from being released un- til voting concludes

- **United States:** Opinion polls are considered a vital aspect of free speech during elections, and their publication is permitted at any time without limitations. Exit polls follow similar freedom, with no specific embargo

NOTA

What's the Buzz?

In the 2024 Lok Sabha elections in Indore, Madhya Pradesh, the NOTA (None of the Above) option got over 2 lakh votes, the highest ever in any area in India

Background

- **The Election Commission records NOTA votes, but classifies them as 'invalid votes'** Even if NOTA secures the highest votes in a constituency, the candidate with the next highest valid votes wins

- **First Use:** NOTA debuted in the 2013 Assembly elections in Chhattisgarh, Mizoram, Rajasthan, Delhi, and Madhya Pradesh, and was later used in the 2014 Lok Sabha elections

- **Origin:** Introduced following a 2013 Supreme Court ruling in the PUCL vs. Union of India case, mandating its inclusion in the electoral process

UPSC Relevance

Direct prelims question (e.g., 2014: NOTA introduction) and mains asked on electoral reforms (e.g., 2018: effectiveness of NOTA)

Leader of Opposition (LOP)

What's the Buzz?

NCERT removes cartoon on coalition politics, says it cast 'India in a negative light'

Background

- **Lok Sabha LoP:** The Leader of the Opposition in Lok Sabha is the head of the biggest opposition party, recognized by the Speaker, who leads debates, questions the government, and offers different views on policies

- **Rajya Sabha LoP:** The Leader of the Opposition in Rajya Sabha is the head of the largest opposition party, recognized by the Chairman, who leads discussions, challenges the government, and presents alternative ideas

- **The role is not in the Constitution** but is defined by the Salary and Al- lowances of Leaders of Opposition in Parliament Act, 1977.

- **The Leader of Opposition (LoP) in both Lok Sabha and Rajya Sabha holds a rank equal to a Cabinet Minister.** They receive the same salary, allowances, and perks as a Cabinet Minister

- The position of LoP was first officially recognized in the Indian Parliament in **1969.**

UPSC Relevance

Common theme in both prelims (e.g. LOP role) and mains (e.g., coalition politics)

Foreigners Act, 1946

What's the Buzz?

Draft of Immigration and Foreigners Bill, 2025 presented in Parliament

Background

- A new law to regulate foreign entry and stay, replacing outdated acts with a comprehensive framework

- **National Security Clause:** Denies entry/stay if a foreigner threatens national security, sovereignty, or foreign relations—first explicit mention in law

- Immigration Officer's Role: Decisions final and binding; defines their functions legally

Source: *https://www.thehindu.com/news/national/threat-to-national-security-sovereignty-grounds-to-deny-foreigners-entry-and-stay-immigration-bill-says/article69212099.ece*

EVM memory verification

What's the Buzz?

For the first time, 11 candidates from the recent 2024 Lok Sabha and State Assembly elections have requested verification of the burnt memory of EVMs and VVPAT units

Background

Burnt Memory in EVMs and VVPATs

- Burnt memory refers to the perma- nent, non-volatile memory in EVMs (Electronic Voting Machines) and VVPATs (Voter Verified Paper Audit Trails), which retains data even without power

- EVMs: Stores votes cast, machine settings, and operational data

- VVPATs: Holds printed vote records, acting as a paper backup for electronic votes

- Up to 5% of machines in an Assem- bly constituency for the Lok Sabha segment can be verified.

- Second- and third-placed candidates in an election can request for Verification. Requests must be filed within 7 days of result announcement. Candidates pay for verification; refunded if tampering is detected

UPSC Relevance

Question on electoral integrity asked in Mains before

Source:

https://www.thehindu.com/news/national/eci-receives-11-requests-for-evm-and-vvpat-memory-verification-post-results/article68311849.ece

Jan Vishwas Act, 2023

What's the Buzz?

Decriminalize over 100 outdated legal provisions to enhance ease of doing business

Background

- **Jan Vishwas Act, 2023:** Enacted to support "Make in India" and ease of doing business

- **Jan Vishwas 2.0: DPIIT** working on 100+ rules/laws as a 100-day priority of the current government.

- Decriminalization: Removes 183 criminal provisions across 42 Central Acts, 19 Ministries

- Civil Penalties: Replaces criminal penalties with administrative actions for minor/technical lapses

- **Objective:** Eliminate outdated provisions unfit for modern tech/business needs

Bodoland Territorial Region (BTR)

What's the Buzz?

Assam's Bodo Council seeks inclusion in Article 280 for more funds

Background

- It is an **Autonomous tribal area** in Assam under the 6th Schedule of the Constitution
- Comprises 5 districts: Kokrajhar, Chirang, Baksa, Udalguri, Tamulpur.
- **Demand:** Inclusion under Article 280 for direct Union funds to boost development
- **Article 280:** Governs Finance Commission's role in tax distribution, grants-in-aid, and resource supplementation for states/Panchayats
- Reason: To address infrastructure gaps, boost tourism (e.g., rafting, wildlife safaris), and sustain peace post-2020 Bodo Accord.

Post ballot and vote from home

What's the Buzz?

The Election Commission of India has recently allowed media persons covering election activities to cast their vote through postal ballots in the upcoming general elections. Home Voting for eligible voters extended pan India for the first time in General Elections 2024

Background

- Postal ballots (vote by post) allow eligible voters to vote remotely when unable to vote in person at polling sta- tions
- **Eligible Voters**
    - **Service Voters:** Members of armed forces, state armed police, government employees posted away from their constituency
    - **Absentee Voters:** Senior citizens, persons with disabilities. Other Categories: Electors on election duty, individuals under **preventive detention.**
- **Home Voting**
    - Focus Groups: Elderly (85+), Persons with Disabilities (PwD), Third Gender (TG), Particularly Vulnerable Tribal Groups (PVTGs)

UPSC Relevance

Questions asked previously on prelims on election procedures (e.g postal ballots)

Right to be free from adverse effect of Climate change

What's the Buzz?

SC Ruling on Climate Change & Need for a Unified Law

Background

- It was mentioned Supreme Court Ruling on **M.K. Ranjitsinh vs Union of India (2024)** on Protection of the Great

Indian Bustard (GIB) against power lines.

- Court decided that right to be free from climate change effects' is a fundamental right under: **Article 21: Right to Life and Personal Liberty** and **Article 14: Right to Equality**

Source:
https://indianexpress.com/article/india/right-against-adverse-effects-of-climate-change-part-of-rights-to-life-equality-sc-9257007/

Interoperable Criminal Justice System

What's the Buzz?

The Inter-operable Criminal Justice System (ICJS), conceptualised by the e-Committee, Supreme Court of India and implemented as a project under the **Ministry of Home Affairs**

Background

- Integrates key pillars of criminal justice—**Police (CCTNS), Courts (e-Courts), Jails (e-Prisons), Forensic Labs (e-Forensics), and Prosecution (e-Prosecution)**—for efficient justice delivery

- Key Feature: "**One Data Once Entry**" principle; data entered once is shared across pillars

- **Nodal Agency: National Crime Records Bureau (NCRB) with National Informatics Centre (NIC) as tech partner**

- Approval: Data Sharing Matrix by Supreme Court's e-Committee

Components

- Crime and Criminal Tracking Network and Systems (CCTNS)

- e-Prisons

- e-Forensics

- e-Prosecution

UPSC Relevance

Relevant theme for both Prelims and Mains (e.g.: tech in justice delivery)

Source:
https://www.mha.gov.in/en/commoncontent/inter-operable-criminal-justice-system-icjs

Article 311

What's the Buzz?

J&K Lieutenant Governor Manoj Sinha on Friday (November 29, 2024) invoked a special Section of Article 311 and terminated the services of two government employees in J&K for "anti-national" activities

Background

- Article 311 acts as a shield for civil servants, ensuring procedural justice while allowing exceptions for security and efficiency, with judicial oversight as a safeguard

- Safeguards:
  - No action (dismissal, removal, rank reduction) without an in- quiry
  - Employees must be informed of charges and given a fair chance to defend

- Grounds:
  - Efficiency: Poor performance or conduct affecting government functioning
  - Moral Turpitude: Acts like corruption, bribery, or fraud.

- Authority: Only the appointing authority (or equivalent rank) can take action

Article 311 (2) (c): Special Provision This clause shall not apply—(c) where the President or the Governor, as the case may be, is satisfied that in the interest of the security of the State, it is not expedient to hold such inquiry

UPSC Relevance

Common theme in prelims (e.g., protec- tions for civil servants) and mains (e.g., administrative reforms)

Supreme Court Advocates-on- Record Association (SCAORA)

What's the Buzz?

The Supreme Court recently held that Advocates-on-Record (AoRs) bear full responsibility for the accuracy of petitions filed before the Court, even if the drafts are prepared by other advocates

Background

- Origin: Introduced by the Supreme Court **under Article 145(1)** (power to frame rules for practice/procedure)

- Role: Legal professional authorized to represent and plead for clients in the Supreme Court

Key features

- **Exclusive Rights:** Only AoRs can file and conduct cases in SC; other advocates need AoR instruction to appear

- **Unique to SC:** No similar provision exists in High Courts

Eligibility Requirements

- Enrolled with any State Bar Council

- Minimum 4 years of practice as an advocate

- 1-year training under a Senior AoR

- Pass the Supreme Court's AoR examination

- Office within 10 miles of SC in Delhi + employ a registered clerk within 1 month of registration

Waqf Act

What's the Buzz?

Bill to revise 44 sections of the Waqf Act, 1995, is expected in Lok Sabha

Background

- Waqf is the property dedicated by a Muslim for religious or charitable purposes under Muslim law, as per the Waqf Act, 1954

- **Ownership:** Once declared Waqf, it's non-transferable, perpetually owned by God

- Types: Public (charity-focused) or private (for descendants)

- **Eligibility:** Creator (Waqif) must be of sound mind, own the property, and believe in Islamic principles (not necessarily Muslim)

- **Key change in Bill:** Including non-Muslims and Muslim women in Central and State Waqf bodies

HEMA (Vishaka Guidelines (Definition of Sexual Harassment)

What's the Buzz?

The Justice Hema Committee report revealed widespread sexual exploitation and violations of women's rights within the Malayalam film industry

Background

> **Vishakha Guidelines & Sexual Harassment Act**
>
> - Origin: Supreme Court introduced Vishakha Guidelines in 1997 to address sexual harassment at workplaces
> - Evolution: Led to the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act)
>
> **Vishaka Guidelines Definition:** Sexual harassment includes unwelcome sexual gestures/behaviors, such as:
>
> - Sexually colored remarks
> - Physical contact or advances
> - Showing pornography
> - Demands/requests for sexual favors
> - Any unwelcome physical, verbal, or non-verbal sexual conduct
>
> **Sexual Harassment Electronic Box (SHe-Box):**
>
> - Initiative: Launched by Ministry of women and child development
> - Purpose: Provides a single-window platform for women to register sexual harassment complaints at the workplace

UPSC Relevance

> Direct mains question asked in Prelims previously (e.g. PoSH Act).

Source: *https://shebox.wcd.gov.in/*

Systematic Voters' Education and Electoral Participation (SVEEP)

What's the Buzz?

> SVEEP initiatives, active involvement of officials and stakeholders help increase voting percentage6

Background

> - Flagship program of the Election Commission of India (ECI) for voter education and awareness
> - Aims to enhances voter literacy, spreads awareness, and encourages informed participation in elections.
>
> **SVEEP Strategy IV (2022-25)**
>
> - Voter Turnout: **Achieve 75% turnout in Lok Sabha Elections 2024**
> - Electoral Roll: Purify rolls at every polling booth.
> - Gender Gap: Reduce disparities in enrolment and voting turnout between genders
> - Inclusivity: Target non-voters and marginalized groups (e.g., through tech solutions and policy reforms)
> - Urban/Youth Apathy: Boost participation among urban and young voters
> - Low Turnout Areas: Improve voting in constituencies/polling stations with historically low turnout
> - Quality Participation: Promote informed and ethical voting via continuous electoral and democracy education

UPSC Relevance

> UPSC asked prelims questions (e.g., ECI initiatives) and mains on voter awareness.

Source: *https://ecisveep.nic.in/*

Fast Track Special Courts (FTSCs)

What's the Buzz?

> Reports show that Fast-track courts offer more hope for rape victims

Background

- **Purpose:** Speed up trials for sexual offences and POCSO cases to ensure quick justice for women and children

- Launched: October 2019 by Dept of Justice, under Criminal Law (Amendment) Act, 2018 (introduced death penalty for rape)

- Centrally Sponsored Scheme

- Courts: FTSCs and exclusive POCSO (ePOCSO) Courts; each with 1 Judge + 7 staff

- Funding Source: Nirbhaya Fund (Central Share).

Source:
https://doj.gov.in/fast-track-special-court-ftscs/

Allocation of Election Symbols

What's the Buzz?

RUPPs now have to submit audited accounts of last three financial years and expenditure statements of last two elections, among others

Background

- **Authority:** Election Commission of India (ECI) manages symbol allotment

- **Legal Basis:** Election Symbols (Reservation and Allotment) Order, 1968

Symbol Allocation Process

- **Recognised Parties:** Get exclusive symbols (e.g., Lotus for BJP

- **Unrecognised Parties:** Choose from free symbols just for an election.

UPSC Relevance

Questions asked on both prelims (e.g.,: ECI powers on symbols) and mains on elec- tion fairness

Source:
https://www.thehindu.com/news/national/ec-tweaks-rules-for-allocation-of-symbols-to-unrecognised-political-parties/article67706353.ece

Income Tax Appellate Tribunal (ITAT)

What's the Buzz?

The Supreme Court, in a plea filed by news portal NewsClick for a stay on the income tax demand, directed that pending disposal of the appeal filed before the ITAT

Background

- Income Tax Appellate Tribunal is **quasi-judicial body** was set up in Jan- uary 1941

- It works under the Ministry of Law and Justice

- It has 63 benches across 27 cities, covering most High Court locations.

- Each bench has

  - 1 Accountant Member
  - 1 Judicial Member

- The President of ITAT assigns members to benches

- Role of ITAT:

  - Final fact-finding authority in tax disputes
  - Provides a platform for taxpayers and tax authorities to settle disputes

- ITAT orders are final

- Appeals to the High Court are allowed only if there's a major legal question

Source: *https://itat.gov.in/page/about_tribunal*

Ashtalakshmi Mahotsav

What's the Buzz?

The Ashtalakshmi Mahotsav is a festival dedicated to the eight northeastern states of India

Background

- First-ever Ashtalakshmi Mahotsav, celebrating Northeast India's culture and economic potential was held at Bharat Mandapam, Pragati Maidan, Delhi.

- **States:** Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Mizoram, Tripura, Sikkim (collectively

- **Ashtalakshmi -** 8 forms of prosperity: Prosperity, Opulence, Purity, Wealth, Knowledge, Duty, Agriculture, Animal Husbandry

North Eastern Council (NEC)

- Under the Ministry of Development of North-Eastern Region (MDoNER)

- It is a **Statutory body, not constitutional**

- Established: Under the North Eastern Council Act, 1971 (amended 2002).

- Function: Nodal agency for economic and social development of Northeast India

- **Composition:**

  – Governors and Chief Ministers of the 8 states

  – 3 members nominated by the President of India

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2080993*

Essential Services Maintenance Act (ESMA)

What's the Buzz?

Uttar Pradesh invokes ESMA, imposes six months ban on protests

Background

- It was enacted in 1968 by Indian Parliament to ensures uninterrupted supply of critical services; prohibits strikes that disrupt daily life

- The objective of this act is to prevents employees in essential services from refusing work, even during bandhs or curfews

- Applies to both Central and State levels

- Each state has its own ESMA

- Disciplinary Measures: Strikers and instigators face actions like dismissal

Source: *https: //www.thehindu.com/news/national/other-states/uttar-pradesh-invokes-esma-imposes-six-months-ban-on-protests/article67854724.ece*

Digital Personal Data Protection Rules, 2025

What's the Buzz?

The IT Ministry of India has notified draft rules on the Digital Personal Data Protection Rules

Background

- Released by the Minitry of Electronics & IT (MeiTY)

- It is to implement the Digital Personal Data Protection Act (DPDP Act), 2023, to safeguard citizens' digital personal

data while supporting India's digital economy and innovation

Key Provisions:

- **Data Transfer:** Permits cross-border transfer of personal data, subject to Central Government approval
- Citizen-Centric Rights
    - Data Erasure: Citizens can demand data deletion
    - Digital Nominees: Appoint nominees to manage data post-incapacity/death
    - Notification: Data Fiduciaries must inform users 48 hours be- fore erasure
- Data Protection Board of India (DPBI):
    - **Digital-First:** Online platform for consent and grievance redressal, with civil court powers for data breach complaints
    - Setup: Rules outline DPBI's framework, including member appointments
    - Significant Data Fiduciaries (SDFs): Higher obligations (e.g., Facebook, Amazon) due to large user base; includes Data Protection Impact Assessments (DPIAs) and audits

UPSC Relevance

Data protection related questions previously asked in mains (e.g.: privacy laws).

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2090048*

Panchayat Se Parliament 2.0

What's the Buzz?

Lok Sabha Speaker is set to inaugurate 'Panchayat Se Parliament 2.0' at the Central Hall of Samvidhan Sadan

Background

Organizers:

- National Commission for Women (NCW)
- Lok Sabha Secretariat

- Ministry of Tribal Affairs

Purpose:

- Celebrates 150th birth anniversary of Bhagwan Birsa Munda, a tribal leader and freedom fighter.
- Empowers 502 elected women representatives from Scheduled Tribes.

Participants

- 502 women from Panchayati Raj institutions.
- From 22 states and Union Territories.

Goals

- Teach about constitutional rules, parliamentary work, and governance.
- Highlight their work in education and rural development.

Source: *https://firstindia.co.in/news/delhi/lok-sabha-speaker-om-birla-to-inaugurate-panchayat-se-parliament-20-tomorrow*

Environment

Carbon Farming

What's the Buzz?

Carbon markets hold the potential to transform Indian agriculture, turning sustainable farming practices into a lucrative opportunity for farmers

Background

- Carbon farming, or carbon sequestration, is an agricultural practice that enhances carbon storage in soil while reducing greenhouse gas emissions

- Common forms of carbon farming include rotational grazing, agroforestry, and conservation agriculture

The Significance of Carbon Farming
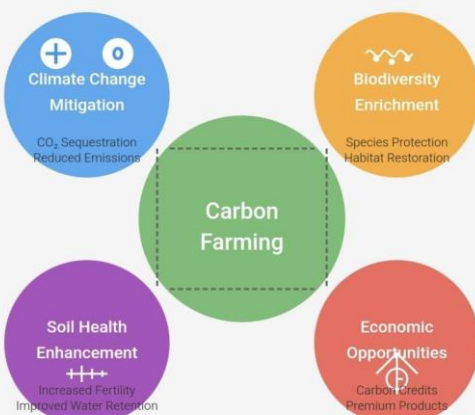
UPSC Relevance

The inclusion of carbon fertilization in the 2018 prelims and blue carbon in 2021 highlights the significance of carbon- related topics

Source: *https://www.indiancarbon.org/sbti-sdgs/what-is-carbon-farming/*

Green tracker

What's the Buzz?

Recent studies show that nearly 6 million trees disappeared from farmlands

Background

- Green Tracker is a **blockchain-based environmental asset tokenization program** designed to automate the monitoring, reporting, verification, and transfer of measurable environmental benefits

UPSC Relevance

Terms like Climate Action Tracker, Green India Mission, and Green Credit Program are frequently asked in UPSC prelims examination

Source: *https://www.greentracker.io/*

Nitrous oxide pollution

What's the Buzz?

Study ranks India second in nitrous oxide

Background

- Nitrous oxide is the **third most significant greenhouse gas**, after carbon dioxide and methane

- Agriculture accounted for 74% of human-induced nitrous oxide emissions

- The top five emitters of N_2O are **China, India, US, Brazil, and Russia**

- India is the **world's second-largest emitter** of N_2O, after China

Nitrous Oxide (N_2O): Key Facts
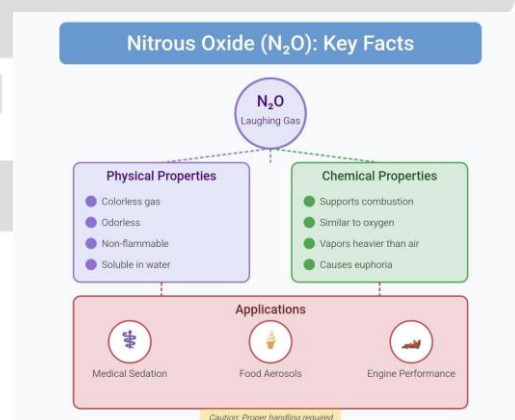
UPSC Relevance

Environmental pollution is a recurring theme in the UPSC prelims examination

Solar storms

What's the Buzz?

Reports says more solar storms brewing to come this year
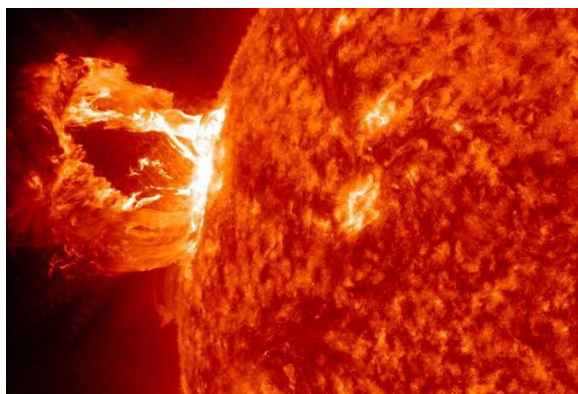
Background

- A solar storm is a sudden explosion of particles, energy, magnetic fields, and material blasted into the solar system by the Suns

- A solar storm directed toward Earth can disrupt the planet's magnetic field, leading to a geomagnetic storm

- Geomagnetic storms can cause radio blackouts, power outages, and stunning auroras

- These storms do not pose direct harm to humans on Earth

Solar Events

- **Solar Flares**
  - A solar flare is a sudden burst of radiation from the Sun, spanning the electromagnetic spectrum
  - It is the most powerful explo- sion in the solar system, with the largest flares equalling the energy of a billion hydrogen bombs

- **Radiation Storms**
  - Solar eruptions propel charged particles (protons and electrons) into space at extreme speeds, triggering radiation storms

  - The fastest particles can reach Earth from the Sun in 30 minutes or less

- **Coronal Mass Ejection**
  - A coronal mass ejection (CME) is a massive plasma cloud ejected from the Sun
  - A single CME can release billions of tons of material into the solar system
  - CMEs originate in the Sun's corona and appear as giant burst-ing bubbles

UPSC Relevance

The UPSC Prelims 2022 featured a question on solar storms

Source: *https://science.nasa.gov/sun/solar-storms-and-flares/*

Environmental flows (E-flows) monitoring system

What's the Buzz?

Jal Shakti Ministry launches portal to eco-logically monitor the Ganga

Background

- E-Flow, or environmental flow, is the **minimum water needed** to sustain the ecological health and functions of rivers, streams, and other water bod- ies

- E-Flow was developed by the **National Mission for Clean Ganga** under the Ministry of Jal Shakti

- The E-Flow Monitoring System is a key feature of the **PRAYAG Portal** for real-time project and river monitoring

- It allows real-time analysis of the wa- ter quality of the **Ganga, Yamuna, and their tributaries**

UPSC Relevance

Terms like this are frequently asked in the UPSC prelims

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2025113*

Rhisotope Project

What's the Buzz?

South African scientists make rhino horns radioactive to curb poaching

Background

- Launched in 2021 in **South Africa**, the project involves injecting precise amounts of radioisotopes into live rhino horns

- The project embeds two tiny radioactive chips into the horn, making it 'useless' and 'toxic' for human consumption

- The radioactive material remains effective for five years, making it more cost-efficient than dehorning every 18 months

- Radioactive horns help detect smugglers at borders, aiding their prosecution under anti-terrorism laws

UPSC Relevance

Rhinoceroses are a key topic in the UPSC Prelims exam

Source: *https://rhisotope.org/*

Great Nicobar Island Project

What's the Buzz?

Strategic imperative and environment concern in Great Nicobar project

Background

The NITI Aayog-led initiative comprises four key components: a transshipment terminal at **Galathea Bay**, an airport, a greenfield township, and a tourism project along with a gas-powered power plant **Great Nicobar Islands**
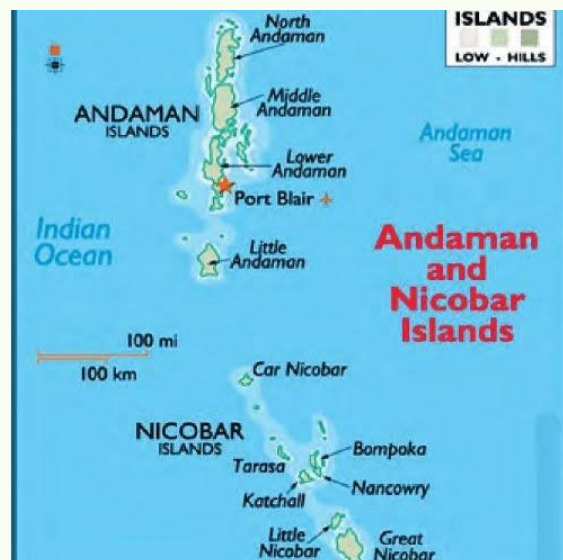
- **Geographical Context**

  - **Location**: Southernmost island of the Andaman and Nicobar group

  - **Separation**: Divided from the Andaman Islands by the Ten Degree Channel

  - **Total Islands**: Andaman and Nicobar Islands consist of 836 islands

  - **Indira Point**: India's southernmost point, located ¡150 km from Indonesia

- **Ecosystem & Biodiversity**

  - **Forest Type**: Tropical wet evergreen forests

- **Protected Areas**

- – **2 National Parks - Campbell Bay and Galathea National Park**
- – **1 Biosphere Reserve - The Great Nicobar Biosphere Reserve**

- Wildlife: Home to endangered species like the leatherback sea turtle

- Indigenous Communities
  - – **Shompen**: Hunter-gatherer tribe
  - – **Nicobarese**: Indigenous inhabitants of the Nicobar Islands

UPSC Relevance

Questions related to the Andaman and Nicobar Islands, such as the Shompen tribe (2009) and the Ten Degree Channel (2014), have been asked in the UPSC Prelims exam

Source:
https://www.impriindia.com/insights/great-nicobar-island-development/

Ele-fence Project

What's the Buzz?

"'Ele-fence' in Wayanad aims to solve man-animal conflict

Background

- Ele-fence is **India's first AI-based smart fence**

- It is being installed in **Wayanad, Kerala** to mitigate human-wildlife conflicts, especially involving elephants

- The project utilizes artificial intelligence for wildlife management

- It is being implemented by White Elephant Technologies in collaboration with the Kerala Forest Department

UPSC Relevance

Facts related to elephants, are important for the UPSC Prelims exam, as they are linked to wildlife conservation, human- wildlife conflict, and environmental policies

Source: *https://www.elefence.org/*

Antarctic Treaty Consultative Meeting (ATCM)

What's the Buzz?

India hosts the 46th Antarctic Treaty Consultative Meeting and 26th Meeting of the Committee for Environmental Protection

Background

- The 46th Antarctic Treaty Consultative Meeting (ATCM 46), also known as the **Antarctic Parliament**, was hosted in Kochi, India

- The meeting was organized by the **National Centre for Polar and Ocean Research, Goa, under the Ministry of Earth Sciences (MoES)**

- Antarctica now has an Indian post office with the experimental PIN code MH-1718

The Antarctic Treaty

- The Antarctic Treaty, signed in 1959, designates Antarctica for peace, scientific research, and environmental protection

- India became a Consultative Party to the Antarctic Treaty in 1983 and reinforced its commitment by enacting the Antarctic Act in 2022

- In ATCM- 46 India announced a plan to set up an **Antarctic research station, Maitri-II**

India's Antarctic Research Stations
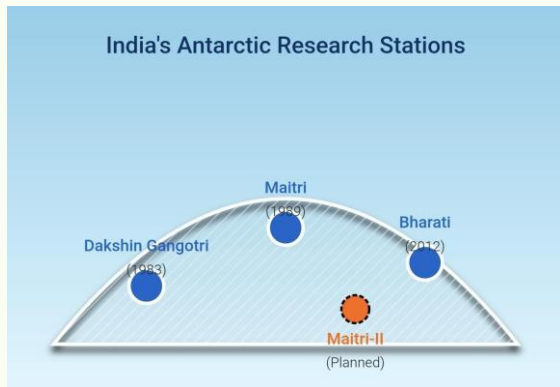
UPSC Relevance

India hosting the Antarctic Treaty Consultative Meeting makes it a key topic for UPSC Prelims, with questions often focusing on Antarctic issues and India's role in global treaties

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2022278*

Green Beard Genes

What's the Buzz?

Studies show that Green-beard' genes could explain how altruism arose in nature

Background

- Green- Bread Genes are the genes that help individuals **recognize and cooperate** with others carrying the same gene

- These genes **encode a visible "tag"** (like a metaphorical "green beard") for identification

- They influence behavior, leading to cooperation among carriers or harm toward non-carriers

- These genes create a form of self-recognition, ensuring preferential treatment among carriers

- It also allow individuals to identify and support others with the same genetic marker and help in passing on genetic material, even without direct reproduction

Some examples of Alturism in different species:

- Worker honey bees care for the queen and her offspring without reproducing.

- Widow spider males allow females to eat them, nourishing the female and offspring.

- Meerkats serve as sentinels, watching for predators while others forage

- **Social Amoebae** (Dictyostelium discoideum)

    - Unicellular organisms that **form multicellular structures** in food scarcity

    - About 20% sacrifice themselves to form a stalk, helping the remain- ing 80% (spores) to survive

    - Genes tgrB1 and tgrC1 function similarly to green-beard genes, enabling self-recognition

UPSC Relevance

The waggle dance was asked in the UPSC Prelims 2023, and similarly, topics like altruism and green beard genes could also be asked, as they are relevant to animal behaviour and evolutionary biology

Source: *https: //pmc.ncbi.nlm.nih.gov/articles/PMC6745669/*

India's largest Leopard safari park.

What's the Buzz?

India's largest leopard safari opens at Bannerghatta in Bengaluru

Background

- South India's first and the coun- try's largest leopard safari was inau- gurated at **Bannerghatta Biological Park, Karnataka**

- Bannerghatta is home to free ranging leopards

- **Madhya Pradesh** has the highest number of leopards followed by **Maharashtra**

Leopard:

- Leopard is the **smallest** of the Big Cats

- **A nocturnal animal**, the leopard hunts by night

- A melanistic leopard often called a black panther

UPSC Relevance

Questions on animals like leopard, lion, tiger, and other big cats have frequently appeared in the UPSC CSE exam, particularly in topics related to wildlife conservation, ecology, and biodiversity

State of the World's Forests 2024

What's the Buzz?

Recently State of the World's Forests 2024, released by the Food and Agriculture Organization (FAO)
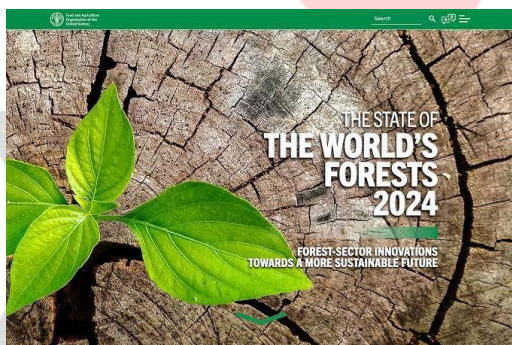
Background

- Released by the **Food and Agriculture Organization (FAO)**

- Theme: **"Accelerating forest solutions through innovation"**

Global Forest Coverage & Trends

- Deforestation rates have declined compared to previous decades

- In 2020, global forest coverage was 4.1 billion hectares, covering 31% of the land area

- Top five countries by forest area: **Russia, Brazil, Canada, USA, and China** (collectively 54% of global forest area)

- Other major contributors: **Australia, DR Congo, Indonesia, Peru, and India**, among others, account for two-thirds of the global forest area

- **India ranked third in global forest area gains**, adding 266,000 hectares annually (2010-2020)

Mangroves & Deforestation

- Global mangrove area: 14.8 million hectares

- South & Southeast Asia contribute 44% of the world's mangrove area

- Asia played a key role in both mangrove loss and gains

- Brazil reduced deforestation by 50% in 2023 compared to 2022

Environmental Concerns

- **Forest Fires (2023)**: Affected 340–370 million hectares of land globally, releasing 6,687 megatons of CO_2, twice the EU's fossil fuel emissions

- **Pine Wood Nematode**: Led to the loss of 12 million pine trees in Asia (1988–2022)

UPSC Relevance

Important theme for UPSC Prelims examination

EU Carbon Border Adjustment Tax

What's the Buzz?

EU ready to address 'specific concerns' of India on carbon tax levy on imports

Including goods originating from Iceland, Liechtenstein, Norway and Switzerland
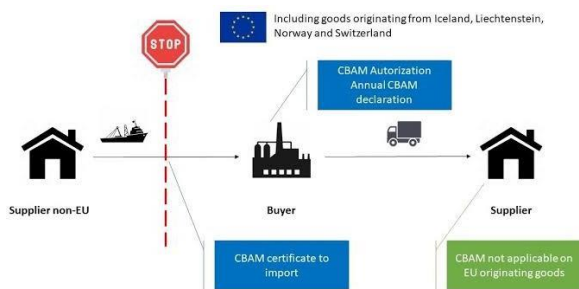
Background

- The Carbon Border Adjustment Mechanism (CBAM) is an **EU policy** imposing a carbon tax on imports from countries with weaker climate regulations

- It aims to prevent carbon leakage, where companies shift production to countries with lower or no carbon costs

- Ensures a fair carbon price on high-emission imports and encourages cleaner industrial production

- **Full implementation by 2026**, initially covering iron & steel, cement, fertilizers, aluminum, hydrogen, and electricity

- EU importers must purchase carbon certificates reflecting the carbon price that would have been paid if produced within the EU

- Prices are based on EU carbon credit market auctions

- Aligns with the **Paris Agreement and the EU Fit for 55 package**, aiming to reduce emissions and promote sustainable production worldwide

UPSC Relevance

UPSC has asked questions on the carbon market (2023), carbon credit system (2009, 2011), and greenwashing (2022), making these crucial topics for the exam

Source: *https://trade.ec.europa.eu/access-to-markets/en/news/carbon-border-adjustment-mechanism-cbam*

Climate Finance Taxonomy

What's the Buzz?

Recently, Finance Minister Nirmala Sitharaman announced a climate fi- nance taxonomy in the Union Budget 2024–25.

Background

- **Definition:** Climate Finance Taxonomy is a classification system that identifies which economic activities qualify as sustainable investments.

- Guides investors and banks in channeling funds toward impactful climate adaptation and mitigation projects.

- Supports investments in sectors like **shipping, aviation, iron & steel, and chemicals**, aiding their transition from energy efficiency to emissions reduction targets.

- Prevents **greenwashing** by ensuring investments are transparently directed toward genuine green projects.

- Sets standards for climate-related financial instruments (e.g., **green bonds**) and aids in climate risk management

- **Global Adoption:** Countries like South Africa, Colombia, South Korea, Thailand, Singapore, Canada, Mex- ico, and the EU have developed taxonomies.

- Facilitates the transition to a **net-zero economy** by balancing greenhouse gas (GHG) emissions with removal efforts.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2093416*

World Soil Health Index

What's the Buzz?

UNESCO warns 90% of Earth's land could be degraded by 2050

Background

- **UNESCO warns** that by 2050, **90% of the Earth's land** could face degradation, threatening **biodiversity** and **human life**.

- The **World Atlas of Desertification** (by the **European Commission & UNEP**) reports that **75% of soils are already degraded**, affecting **3.2 billion people**.

- To tackle soil degradation, **UNESCO launched the World Soil Health Index** at the **International Conference on Soils** in **Agadir, Morocco**.

- The index aims to create a **standardized system** for assessing and comparing **soil quality** across various ecosystems.

UPSC Relevance

Similar to the Soil Health Card Scheme asked in the 2017 UPSC Prelims, the Soil Health Index may also be featured in upcoming exams

Mercury Bomb

What's the Buzz?

Scientists warn of a 'Mercury Bomb' in the Arctic as melting permafrost poses a severe environmental risk.

Background

- Scientists found **toxic mercury** being released into **Arctic water systems** as permafrost melts.

- Researchers studying **Alaska's Yukon River** discovered **mercury-laden sediments** entering the river due to **eroding permafrost**.

- **Mercury accumulates in the food chain**, posing long-term **environmental and health risks** to **Arctic communities** dependent on hunting and fishing.

- **Mercury is released during glacial erosion**, with **finer sediments** containing **higher levels of mercury**.

- While the **immediate threat is low**, **mercury buildup over time** could have **serious consequences**.

- **Permafrost** is **permanently frozen ground** that stays below **0⁰C** for at least **two consecutive years** and covers **25% of the Northern Hemisphere's land**.

- **Yukon River** flows from **Alaska to the Bering Sea**.

Bailey Bridge

What's the Buzz?

A Bailey bridge was constructed in Wayanad after the landslides to restore connectivity.

Background

- A Bailey bridge is a **modular, prefabricated structure** that allows for rapid assembly with minimal construction effort.

- It was invented by Donald Coleman Bailey during World War II (1939-45) and became widely used for military and emergency purposes.

- The bridge consists of lightweight steel panels connected by pins, enabling

- quick deployment without heavy machinery.

- The Indian armed forces inherited the design from the British and used it during the **1971 Indo-Pak war** and in disaster relief efforts, such as the 2021 Uttarakhand flash floods.

- Its truss-based construction provides strength and stability, making it effective for temporary infrastructure needs.

- Limitations include a limited lifespan, weight restrictions, susceptibility to corrosion, manual assembly challenges, and shorter span lengths, making it unsuitable for permanent structures.

Source:
https://www.britannica.com/biography/Donald-Coleman-Bailey#ref230140

Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC8954387/

Dysbiosis

What's the Buzz?

Hidden dangers of irrational use of antibiotics on microbiome

Background

- Dysbiosis is an imbalance in the microbiome, disrupting the diversity of microorganisms in the body.

- It commonly affects the **gastrointestinal (GI) tract** but can also occur on the skin.

- Causes include infections, antibiotic use, and dietary factors.

- It may cause abdominal pain, bloating, and vomiting or be asymptomatic.

- Dysbiosis contributes to conditions like inflammatory bowel disease, weakened immunity, obesity, and diabetes.

- It impacts various gut-organ axes, affecting the brain, liver, skin, and respiratory systems.

- **Overuse of antibiotics** can severely disrupt the microbiome, leading to long-term health issues.

Corporate Average Fuel Efficiency (CAFÉ) Norms

What's the Buzz?

Carmakers Penalized for Failing to Meet CAFE Norms

Background

- Corporate Average Fuel Efficiency (CAFE) norms were introduced in 2017 under the **Energy Conservation Act, 2001**

- They aim to improve fuel efficiency, reduce CO_2 emissions, lower oil dependency, and curb air pollution.

- Applicable to **petrol, diesel, LPG, CNG, hybrid, and electric passenger vehicles**

- Implemented in two stages:
  - Stage I (2017–22): CO_2 limit of 130 g/km.
  - Stage II (2022 onwards): Stricter 113 g/km CO_2 limit.

- Unlike BS VI, which regulates overall vehicle emissions, CAFE focuses only on fuel efficiency and CO_2 reduction.

- Stricter penalties for non-compliance with CAFE standards.

Source: *https://udit.beeindia.gov.in/cafe/*

Miombo Forest

What's the Buzz?

New projects to safeguard Miombo forest, boost food security in Mozambique & Zimbabwe

Miombo woodland

Background

- **FAO** and the Italian Agency for Development Cooperation (AICS) signed agreements to protect the Miombo forest and boost trade between **Mozambique and Zimbabwe**

- The Miombo biome, spanning 2.7 million sq. km, includes grasslands, bushlands, and savannahs.

- It covers **Angola, DRC, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe**

- These projects aim to increase food security, improve livelihoods, and strengthen resilience against environmental and economic challenges.

- These initiatives contribute to the Sustainable Development Goals (SDGs) and support rural community develop- ment.

Source:
https://www.downtoearth.org.in/africa/new-projects-to-safeguard-miombo-forest-boost-food-security-in-mozambique-zimbabwe

Food Recovery to Avoid Methane Emissions (FRAME)

What's the Buzz?

Food banks can prevent GHG emissions equivalent to taking 900 cars off road for a year

Background

- FRAME methodology quantifies and mitigates the environmental impact of food loss and waste through food recovery and redistribution.

- Developed by The **Global Food Banking Network (GFN)** in partnership with the **Global Methane Hub and the Carbon Trust**

- Helps food banks track emissions from food recovery, reducing greenhouse gases while improving food security.

- Initially launched as a pilot project in **Mexico and Ecuador**

- **UNEP's Food Waste Index Report** highlights that 17% of food is wasted at the retail and consumer levels.

Source:
https://www.downtoearth.org.in/food/food-banks-can-prevent-ghg-emissions-equivalent-to-taking-900-cars-off-road-for-a-year-data#:~:text=Each%20food%20bank%20reduces%20the,Avoid%20Methane%20Emissions%20(FRAME)

Carbon Credit Trading Scheme (CCTS)

What's the Buzz?

Carbon Credit Trading Scheme (CCTS) is expected to contribute to achieving India's climate goals in line with the commitments under UNFCCC and its Paris Agreement

India - World Largest Plastic Polluter

What's the Buzz?

A new study in Nature finds that India is the world's largest generator of plastic pollution.

Background

Background

- **India contributes around 20% of the world's total plastic waste**

- **Top 5 Plastic Polluters: India (9.3 million tons), Nigeria (3.5 million tons), Indonesia (3.2 million tons), China (2.8 million tons), and Pakistan (2.6 million tons)**

Microplastics:s

- Microplastics are plastic particles less than 5 millimeters in diameter.

- They pose a threat to oceans and aquatic life.

- Natural factors like solar UV radiation, wind, and currents break plastic into smaller particles.

- Microplastics are particles smaller than 5 mm, while nanoplastics are smaller than 100 nm.

UPSC Relevance

UPSC Prelims frequently features questions on pollution, particularly plastic and microplastics

Background

- **Carbon credits** represent emissions reductions or removals, measured in **tonnes of CO_2 equivalent (tCO$_2$e)**.

- Each **carbon credit** allows the emission of **one tonne of CO_2** or its equivalent.

- The concept of **carbon credits** was introduced in the **Kyoto Protocol (1997)** and reinforced by the **Paris Agreement (2015)** to reduce global emissions through trading.

- **India's Carbon Credit Trading Scheme (CCTS)** aims to regulate and trade **carbon credits**.

- **CCTS** will be implemented by the **Bureau of Energy Efficiency (BEE)**.

- **CCTS** sets emissions targets for industries:

  - **Overachievers** (reducing emissions beyond targets) can **sell extra credits**.
  - **Underachievers** (failing to meet targets) must **buy credits** to comply.

- The scheme aligns with India's **Nationally Determined Contributions (NDCs)** under the **Paris Agreement**, targeting **emission reductions by 2030**.

- **Carbon markets** are trading systems where entities **buy carbon credits** to offset their **greenhouse gas (GHG) emissions**.

Source:
https://www.downtoearth.org.in/africa/new-projects-to-safeguard-miombo-forest-boost-food-security-in-mozambique-zimbabwe

Source:
https://www.downtoearth.org.in/waste/india-tops-plastic-pollution-rankings-emitting-a-fifth-of-global-plastic-waste

International Big Cat Alliance (IBCA)

What's the Buzz?

International Big Cat Alliance (IBCA) officially comes into force as a full-fledged Treaty based Inter-governmental International Organization.

Protect Big Cats with your creativity!

Background

- International Big Cats Alliance (IBCA) was launched by Indian PM Narendra Modi in 2023 during the **50th anniversary of Project Tiger**

- Established through the **National Tiger Conservation Authority (NTCA) under the Ministry of Envi- ronment, Forest & Climate Change (MoEFCC)**

- Aims to secure the future of big cats and their habitats.

- Focuses on the conservation of seven big cats: **Tiger, Lion, Leopard, Snow Leopard, Puma, Jaguar, and Cheetah**

- IBCA Headquarters will be established in India, as approved by the Union Cabinet.

- Five countries have ratified the IBCA framework agreement:

  - Republic of Nicaragua
  - Kingdom of Eswatini
  - Republic of India

  - Federal Republic of Somalia
  - Republic of Liberia

- Membership is open to:

  - All United Nations member states.
  - Range countries where these big cat species naturally occur.
  - Non-range countries interested in supporting big cat conservation.

UPSC Relevance

The International Big Cat Alliance (IBCA) is important for UPSC CSE as a major global initiative by India for big cat conservation, relevant to environment, ecology, and current affairs

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2099279*

Economy

Index of Industrial Production

What's the Buzz?

The Ministry of Statistics and Pro- gramme Implementation recently released the Quick Estimates of the Index of Indus- trial Production (IIP)

Background

- A key measure to track **how industries grow over time compared to a starting year (base year)**

- **Central Statistical Organisation (CSO), under the Ministry of Statistics and Programme Implementation**

- **It is released every month**

- Uses **Laspeyre's formula**—a way to average production changes with weights

- The base year is set at 2011-12

UPSC Relevance

IIP is important for UPSC as a question on its Eight Core Industries was asked in Pre- lims 2012

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2036830*

Employment Provident Fund Organisation

What's the Buzz?

Karnataka High Court cancelled a 15-year-old rule (2008) that forced foreign workers into the Employees' Provident Fund (EPF), as it violates Article 14

Background

- It is legal entity formed under the 1952 Employees' Provident Fund Act

- It is managed by the Central Board of Trustees, with members from Cen- tral/State Governments, employers, and workers

- Purpose: Runs savings, pension, and insurance plans for India's organized sector employees

- Falls under the Ministry of Labour and Employment, Government of India

Schemes oversees by EPFO:

- **Employees' Provident Funds Scheme 1952 (EPF)**

    - **Benefit:** Savings with interest for retirement or death
    - **Access:** Funds can be taken out for education, marriage, health, or home-building
    - **Housing:** Supports PM's "Housing for All by 2022" goal for members

- **Employees' Pension Scheme 1995 (EPS**

    - **Benefit:** Monthly payments for re- tirement, disability, or family sur- vivors (widow/er, kids).
    - **Extras:** Ensures minimum dis- ability pension and credits past Family Pension Scheme (1971) members

- **Employees' Deposit Linked Insur- ance Scheme 1976 (EDLI)**

    - **Benefit:** Pays out if a member dies while enrolled
    - **Amount:** 20 times the salary, capped at Rs.6 lakh

Comparison between Employment Prov- ident Fund and Public Ptovident Fund Employees' Provident Fund (EPF)

- **Definition:** Retirement benefit scheme for salaried employees.

- **Eligibility:**

  - Mandatory for salaried employees in organizations with **20+ employees**.

  - Optional for employees in firms with **less than 20 employees** if both employer & employee agree.

- **Account Opening:** Automatically opened by the employer.

- **Contribution:**

  - **Employee:** 12% of basic salary + DA.

  - **Employer:** 12% (8.33% to EPS, 3.67% to EPF).

- **Maturity Period:** On **retirement (58 years)**. Partial withdrawal allowed in specific cases.

Public Provident Fund (PPF)

- **Definition:** Long-term savings scheme open to all citizens.

- **Eligibility:** Any Indian resident (including minors).

- **Account Opening:** Can be opened at banks or post offices.

- **Contribution:**

  - **Minimum:** Rs.500 per year.

  - **Maximum:** Rs.1.5 lakh per year.

- **Maturity Period: 15 years** (extendable indefinitely in **5-year blocks** upon request).

UPSC Relevance

EPFO is important for UPSC as it deals with social security, labor laws, and eco- nomic policies, which have been asked in multiple Prelims exams

Source:
https://www.thehindu.com/news/national/karnataka-high-courts-verdict-cancelling-epf-benefits-for-international-workers-and-its-implications-explained/article68153394.ece

Sachetisation

What's the Buzz?

SEBI floats consultation paper on 'sachetisation' of mutual funds; seeks public comment

Background

- A way to offer mutual funds in small, affordable amounts for people who don't have much money.

- Helps low-income individuals start investing in mutual funds easily.

- Borrowed from a business idea of selling products in smaller, cheaper units to reach more customers.

Why Do We Need It?

- **Financial Inclusion:** Opens up mu- tual funds to people with low incomes who were left out before.

- **Lowering Costs:** Makes investing possible by reducing the high starting amounts of regular SIPs.

- **Market Growth:** Brings in more small investors to make equity markets bigger and less shaky when foreign investors pull out.

What's the Aim?

- **Affordable SIPs:** Encourages tiny investments to make financial products available to all.

- **Wealth Building:** Helps low-income people save and grow money over the long term.

How Does It Work?

- **Minimum Investment:** Rs. 250 per month

- **Who's Eligible:** Only people new to mutual funds can join.

- **Limit:** Up to 3 SIPs of Rs. 250 each per investor across all companies (AMCs).

- **Excluded Schemes:** Avoids volatile options like debt, sectoral, thematic, small-cap, and mid-cap funds.

- **Duration:** Targets 5 years (60 payments), but you can stop anytime.

- **Process:** Uses tech like UPI auto pay or NACH to keep costs low and simple.

SEBI

- A statutory body established under the provisions of the Securities and Exchange Board of India Act, 1992
- Functions of SEBI includes:
  - Regulates stock exchanges, securities markets and intermediaries
  - Promotes investor education and awareness
  - Monitors trading activities and market movements
  - Conducts inspections and audits of market participants
  - Imposes penalties and sanctions for non-compliance
- The Board consist of Chairman appointed by Central govt, and nomi- nated members from Ministry of Fi- nance and Corporate Affairs and one nominated member from RBI

UPSC Relevance

Terms-based questions are asked in UPSC Prelims, so 'Sachetisation' can be a potential topic for UPSC CSE Prelims

Source:
https://www.thehindu.com/business/sebi-floats-consultation-paper-on-sachetisation-of-mutual-funds-seeks-public-comment/article69129207.ece

e-Rupee

What's the Buzz?

Fintech giants like Google Pay, PhonePe, Amazon Pay, Cred, and Mobikwik are teaming up with RBI to let users pay with e-rupee using UPI.

Background

- **e-Rupee:** India's digital currency, launched by RBI, is equivalent to reg-

ular cash (fiat currency) but in digital form.

- It is swappable 1:1 with physical rupees—only the form changes, not the value.
- RBI issues it, while banks and non-banking financial entities distribute it.
- **New Expansion:** RBI has included non-bank entities (like payment companies) to leverage their extensive networks for distribution.
- **Types of e-Rupee:**
  - **Retail (General Purpose):** Designed for everyday use by individuals and businesses.
  - **Wholesale:** Primarily for large-scale financial transactions, including government securities trading.
- **No Interest Feature:** e-Rupee does not earn interest, ensuring that it does not compete with bank deposits.
- **Launch Timeline:** Retail e-Rupee is accessible to individuals and businesses via banks and can be converted into bank deposits.
- **Latest Updates (February 2024):**
  - **Offline Mode:** Introduced for areas with poor or no internet connectivity, enabling uninterrupted transactions.

UPSC Relevance

e-Rupee is important for UPSC as it relates to digital currency, financial inclusion, and RBI's monetary policies, which have been key topics in Prelims

Source: *https://www.thehindu.com/sci-tech/technology/what-is-e-rupee-and-why-do-google-pay-phonepe-want-to-join-rbis-digital-rupee-project/article68495234.ece*

International Financial Service Centre (IFSC)

What's the Buzz?

The government has widened the types of financial work allowed at the International

Financial Services Centre (IFSC).

Background

International Financial Services Centres Authority (IFSCA)

- Set up on April 27, 2020, under the International Financial Services Centres Authority Act, 2019. (Based in GIFT City, Gandhinagar, Gujarat)

- A single body to grow and manage financial products, services, and institutions in India's IFSCs.

- **Definition of IFSC:** Places where companies, banks, and people can do international financial work (like trading, investing, or banking) with easier rules than the rest of India.

- **Before IFSCA:** RBI, SEBI, PFRDA, and IRDAI (domestic regulators) handled IFSC business separately.

- **Vision:** Builds a strong bridge to global finance while meeting India's economic needs.

India International Bullion Exchange (IIBX)

- India is a giant in the world's bullion market (gold and silver trading).

- **Launch:** By PM Narendra Modi on July 29, 2022, at GIFT IFSC, Gandhinagar, Gujarat.

- **Regulator:** Overseen by the International Financial Services Centres Authority (IFSCA).

- **Goal:** Boosts India's dream of having its own global bullion exchange and growing its role in the world market.

- **Purpose:** Acts as an easy entry point for importing gold/silver and builds a top-notch trading system for bullion, investments, and storage in IFSCs.

UPSC Relevance

IFSC is important for UPSC as questions on financial regulations and institutions have been asked in multiple Prelims exams

Source: *https://www.thehindu.com/business/ Economy/govt-expands-scope-of-financial- services-on-offer-at-ifsc/article67766402.ece*

Bima Sugam

What's the Buzz?

Insurance e-marketplace Bima Sugam first phase launch likely in April 2025, IRDAI.

Background

- **Setup:** Bima Sugam India Federation is now a registered non-profit (Section 8 company); MD, CEO, and key staff hiring is almost done.

- A digital marketplace by IRDAI to make insurance easy, affordable, and reachable for everyone.

- Works with Bima Vahak (women-led sales) and Bima Vistaar (full coverage plan) to spread insurance across India by 2047.

Insurance Regulatory and Development Authority of India (IRDAI)

- A legal body created by the Insurance Regulatory and Development Authority Act, 1999, to oversee and grow India's insurance sector.

- **Head Office:** Located in Hyderabad.

UPSC Relevance

Bima Sugam is important for UPSC as it relates to insurance sector reforms, digital governance, and financial inclusion, which have been key topics in Prelims

Source:
https://www.thehindu.com/business/insurance- e-marketplace-bima-sugam-first-phase-launch- likely-in-april-2025-irdai- head/article68263020.ece

Pravaah Portal

What's the Buzz?

RBI unveils Pravaah portal, Retail Direct Mobile App, and FinTech Repository.

Background

Pravaah Portal

- **What It Is:** A safe, online platform (Platform for Regulatory Application,

Validation, and Authorisation) for applying to RBI for approvals or licenses.

- Apply online for permissions or licenses.

- Answer RBI's questions directly on the portal.

- Get RBI's decision quickly and clearly.

- **How It Helps:** Speeds up RBI's approval process; currently offers 60 forms for various needs, including a catch-all form for unique requests.

Retail Direct Mobile App

- Allow regular people open accounts with the RBI to trade government securities (G-Secs).

- The new mobile app lets users buy/sell G-Secs on their phone—both in primary auctions and secondary markets.

- Makes investing in safe government bonds super easy for everyday folks, right from their smartphones.

FinTech Repository

- A digital record of all fintech compa- nies (regulated or not) in India—what they do, tech they use, etc.

- Helps RBI and others understand the fintech world better for smarter rules and growth.

- **Management:** Both repositories run by Reserve Bank Innovation Hub (RBIH), an RBI-owned group.

- Gives a clear picture of fintech and tech trends for better policies and teamwork in the industry.

UPSC Relevance

Pravaah Portal is important for UPSC as it relates to ease of doing business, regu- latory clearances, and digital governance, which have been key topics in Prelims

Source:
https://www.thehindu.com/business/rbi-unveils-pravaah-portal-retail-direct-mobile-app-and-fintech-repository/article68225543.ece

SWAMIH Investment Fund

What's the Buzz?

SWAMIH fund 2.0 of Rs. 15,000 crore to complete 1 lakh projects in Budget 2025.

Background

- **SWAMIH:** Special Window for Affordable and Mid-Income Housing.

- **Purpose:** Debt financing for completing stressed, brownfield, RERA (Real Estate Regulatory Authority)-registered residential projects in affordable and mid-income categories.

- **Launched:** 2019 (SWAMIH Fund 1); SWAMIH Fund 2 announced on Feb 1, 2025.

- **Sponsor:** Ministry of Finance.

- **Managed by:** SBICAP Ventures Ltd (State Bank Group company).

Source: *https://www.hindustantimes.com/real-estate/fm-announces-swamih-fund-2-0-to-complete-1-lakh-homes-in-stalled-projects-101738391362178.html*

16th Finance Commission

What's the Buzz?

16th Finance Commission (FC) has begun its work.

Background

- **Constitutional Basis:** Article 280 of the Indian Constitution.

- **Purpose:** Recommends tax revenue distribution between Union and States every 5 years.

- **16th FC Tenure:** April 1, 2026 – March 31, 2031.

- **Chairman:** Dr. Arvind Panagariya (noted economist).

Finance Commission Overview

- **Formation:** Constituted by the President every 5 years.

- **Composition:** Chairman + 4 members (experts in finance, economics, public administration).

- **Role:** Maintains fiscal federalism by ensuring equitable resource sharing and fiscal discipline.

Tax Distribution:

- Recommend sharing of net tax proceeds between Union and States.

- **Grants-in-Aid:** Define principles for grants to support state revenues.

- **Consolidated Fund:** Suggest measures to augment State Consolidated Funds for local bodies (Panchayats, Municipalities).

UPSC Relevance

The Finance Commission is important for UPSC as questions were asked in Prelims 2011 and 2015, and in Mains 2018 (GS-II)

Source:
https://www.thehindu.com/news/national/what-is-on-the-agenda-for-the-16th-finance-commission-explained/article68356820.ece

Angel Tax

What's the Buzz?

Angel Tax abolished for all classes of Investors

Background

- **Definition:** Tax levied on capital raised by unlisted companies (star- tups) via share issues, if the share price exceeds the fair market value (FMV).

- **Introduced:** 2012 by the Government of India.

- **Taxable Component:** Excess funds raised above FMV are treated as income.

- **Tax Rate:** Taxed at 30.9% (including surcharge and cess) — reason for abolishing as this hindered the growth of startups.

- **Target:** Unlisted companies raising funds from Indian investors.

Eligible Startups:

- Must be recognized by the DPIIT (Dept. for Promotion of Industry and Internal Trade).

- Paid-up share capital + share premium less or equalto Rs. 25 crore (excludes funds from NRIs, VCs, specified companies).

Angel Investors:

- 100% tax exemption on the excess investment over FMV.

- **Conditions:**

  – Net worthgreater or equal to Rs. 2 crore, or Income ¿ Rs. 25 lakh in the past 3 fiscal years.

UPSC Relevance

Angel Tax is important for UPSC as taxation and startup-related policies have been key topics in Prelims, with Equalization Tax asked in 2018

Source: *https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2035599*

Sagarmala and Bharathmala Programme

What's the Buzz?

Question arise in Parliament about the Status of Ambitious Bharatmala Pariyojana

Background

- The program was launched in 2017 under the **Ministry of Road Trans- port and Highways**

- **Objective**: Improve road connectivity, enhance freight movement, and reduce travel time across National Highways

- It focus on improving the National Highways, economic corridors, border roads, and coastal/port connectivity of the country

- It also links with **Sagarmala pro-**

gramme under Ministry of Ports, Shipping and Waterways for seamless connectivity from ports to different parts of country.

UPSC Relevance

Sagarmala and Bharatmala Programmes are important for UPSC as infrastructure and transport sector initiatives have been key topics in Prelims

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2085551*

Aadhaar-enabled Payment Services (AePS)

What's the Buzz?

Launched By: National Payments Corporation of India (NPCI).
Purpose: Enable online financial transactions using Aadhaar authentication at PoS and Micro ATMs.

Background

What is AePS?

- A bank-led model allowing interoperable financial transactions through business correspondents (BCs) of any bank.

- Uses Aadhaar number and biometric authentication (e.g., fingerprint) for secure, real-time transactions.

- Facilitates basic banking services in remote areas via Micro ATMs.

Key Features

- Cash deposit, cash withdrawal, balance inquiry, mini statement.

- Aadhaar-to-Aadhaar fund transfer, authentication, BHIM Aadhaar Pay.

Inputs Required:

- Bank name, Aadhaar number, biometric data (fingerprint from Aadhaar enrolment).

Technology:

- Links Aadhaar to bank accounts via UIDAI authentication.

- Operates on NPCI's interoperable platform.

AePS Approach:

- Uses biometric authentication (fingerprint) instead of OTP (Biometrics serve as a direct, secure identity proof, bypassing SMS-based OTPs).

- Relies on Aadhaar's pre-captured biometric data, verified instantly via UIDAI.

- Eliminates need for mobile phones, bank account details, or passwords.

UPSC Relevance

AePS is important for UPSC as questions on digital payments and financial inclusion have been key topics in Prelims, with a question on Aadhaar asked in 2018

Source: *https://www.npci.org.in/what-we-do/aeps/product-overview*

Open Market Sale Scheme (OMSS)

What's the Buzz?

Recent revision by the Centre (likely the Government of India) to the Open Market Sale Scheme (OMSS), which is managed by the Food Corporation of India (FCI).

Background

- The Centre has revised the OMSS to limit the quantity a single bidder can

purchase per bid.

- Previously, the maximum allowable quantity was 3,000 metric tonnes (MT) per bid. Under the new rules, this has been significantly reduced to a range of 10 to 100 metric tonnes per bid.

Key Objectives:

- **Encourage Participation of Small Buyers:** By lowering the purchase limit, the scheme now accommodates small and marginal buyers who were previously unable to compete with larger players bidding for bulk quantities.

- **Widen the Scheme's Reach:** Reduc- ing the bid size ensures more partic- ipants can access the stocks, spread- ing the benefits of the scheme across a broader group.

- **Curb Retail Prices:** The move is intended to break the monopolistic tendencies of bulk buyers. Smaller, competitive bids from a diverse pool of buyers should help stabilize or reduce retail prices by preventing large entities from controlling the market.

- **State's Procurement:** States can also procure food grains through the OMSS, beyond their National Food Security Act (NFSA), 2013 allocation, without participating in auctions

UPSC Relevance

OMSS is important for UPSC as questions on food security and government procure- ment policies have been key topics in Pre- lims

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2041565*

Employment-Linked Incentive Schemes

What's the Buzz?

Government to implement 3 schemes for 'employment linked incentives' as part of the prime minister's packages.

Background

Scheme A: First Timers

- Provides one-month wage (up to Rs. 15,000) in 3 instalments to new formal sector employees via EPFO.

- Targets 210 lakh youth with a salary cap of Rs. 1 lakh per month to ease workforce entry.

Scheme B: Job Creation in Manufacturing

- Offers EPFO contribution incentives for 4 years to both employee and employer in manufacturing.

- Aims to benefit 30 lakh first-time youth and boost manufacturing sector jobs.

Scheme C: Support to Employers

- Reimburses employers up to Rs. 3,000 per month for 2 years for additional hires across all sectors.

- Incentivizes 50 lakh new jobs for employees earning up to Rs. 1 lakh per month.

Scheme	Key Feature	Target Beneficiaries
Scheme A: First Timers	One-month wage for new formal sector entrants.	210 lakh youth
Scheme B: Manufacturing	Incentive for first-time hires in manufacturing.	30 lakh youth + employers
Scheme C: Employers	Support for additional hires in all sectors.	50 lakh additional jobs

UPSC Relevance

Employment-Linked Incentive Schemes are important for UPSC as questions on employment generation were asked in Prelims, including MGNREGA in 2012 and DDU-GKY in 2015

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2035594*

National Industrial Corridor Programme

What's the Buzz?

Recently, the Cabinet Committee on Economic Affairs has approved 12 new project proposals under the National Industrial Corridor Development Programme (NICDP)
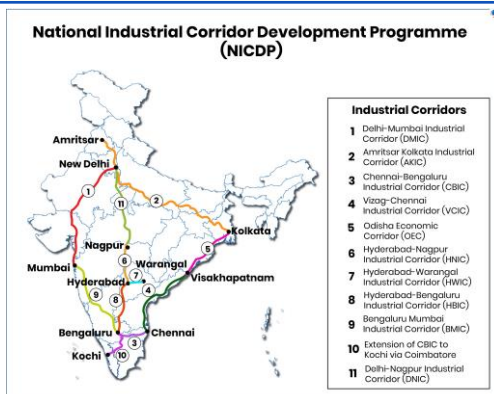
Background

Launched: Part of India's ambitious infrastructure push under the Ministry of Commerce and Industry.
Vision: Develop greenfield industrial smart cities integrating next-gen technolo- gies.
Goal: Catalyze $2 trillion in exports by 2030 and boost industrial growth.
Objectives

- Create regional manufacturing hubs across India.

- Reduce logistics costs and enhance export competitiveness.

- Promote sustainable, efficient industrial ecosystems.

Key Features

- **Smart Cities:** Greenfield projects with 'plug-n-play' (ready-to-use infrastructure) and 'walk-to-work' (proximity of residence to workplace) concepts.

- **Technology Integration:** Converges advanced tech across infrastructure sectors (e.g., IoT, green energy).

- **PM GatiShakti Alignment:** Ensures multi-modal connectivity (roads, rails, ports) for seamless logistics.

National Industrial Corridor Programme is important for UPSC as questions on industrial corridors were asked in Prelims, including one in 2016

Index of Eight Core Industries (ICI)

What's the Buzz?

Factory output growth hits 6-month high of 5.2% in November, says Govt data.

Background

The Index of Eight Core Industries (ICI) is a monthly production volume index that measures the collective and individual performance of eight key industries in India.
Significance:

- These industries are considered the backbone of the economy due to their significant impact on industrial production and overall economic activi- ties.

- Comprises 40.27% of the weight of the Index of Industrial Production (IIP), making it a crucial economic indicator.

UPSC Relevance

Index of Eight Core Industries (ICI) is important for UPSC as questions were asked in Prelims 2015 and 2012

Environmental, Social and Governance (ESG) Bonds

What's the Buzz?

Enabling framework needed to help companies issue ESG bonds domestically: RBI official.

Background

What is ESG?

- ESG is a framework to assess how organizations manage risks and opportunities in three key areas: environmental sustainability, social responsibility, and governance practices.

- Goes beyond just environmental concerns by integrating environmental protection, social welfare, and ethical governance into business operations.

- Ensures businesses operate in a responsible and sustainable manner.

- Encourages accountability toward the environment, society, and internal governance.

Key Focus Areas:

- **Environmental:** Reducing ecological impact (e.g., carbon emissions, waste management, renewable energy use).

- **Social:** Addresses relationships with employees, customers, suppliers, and communities (e.g., labor rights, diversity, community welfare).

- **Governance:** Emphasizes ethical management practices (e.g., transparency, anti-corruption, board diversity).

UPSC Relevance

Environmental, Social, and Governance (ESG) Bonds are important for UPSC as questions on green finance and sustainable investment have been key topics in Prelims

Source:
https://www.thehindu.com/incoming/enabling-framework-needed-to-help-companies-issue-esg-bonds-domestically-rbi-official/article68506931.ece

Digital Crop Estimation Survey

What's the Buzz?

The Union government urged states to swiftly adopt and implement the Digital General Crop Estimation Survey (DGCES).

Background

What is DGCES?

- The "Digital General Crop Estimation Survey (DGCES)" is a nationwide initiative aimed at precisely assessing crop yields across a variety of crops.

- This program utilizes a meticulously crafted survey methodology rooted in the principles of crop cutting experiments.

- The introduction of the GCES mobile application and portal has ushered in a transformative era for recording Crop Cutting Experiment (CCE) results directly from the field.

- With innovative features such as GPS-enabled photo capture and automated plot selection, this technological advancement significantly enhances transparency and accuracy within the system.

Key Features:

- **Geotagged Data:** Utilizes geotagging to pinpoint the precise locations of crop plots, ensuring accurate measurement of areas.

- **Digital Documentation:** Leverages digital tools and platforms for data collection, minimizing dependence on manual processes.

- **Real-Time Updates:** Delivers near real-time insights on crop areas, enabling timely and precise assessments.

UPSC Relevance

Digital Crop Estimation Survey holds UPSC relevance due to its role in agri-tech innovations, remote sensing applications, and data-driven policy decisions, topics previously seen in Prelims

Source: *https://gces.dac.gov.in/#/*

Unified Pension Scheme

What's the Buzz?

Judicial officers' pension: Unified pen- sion scheme notified, Centre tells Supreme Court.

Background

What is the Unified Pension Scheme (UPS)?

- The Unified Pension Scheme (UPS) is a pension option introduced for Central Government employees covered under the National Pension System (NPS).

- Effective from April 1, 2025. Employees can choose between UPS and the existing NPS, with the decision to switch to UPS being final and binding.

- The Pension Fund Regulatory and Development Authority (PFRDA) will regulate its implementation.

Key Features:

- **Guaranteed Pension:** 50% of aver- age basic pay (last 12 months) for 25+ years of service.

- **Family Pension:** 60% of pension admissible to employee, paid to spouse after death post-superannuation.

- **Dearness Relief:** Applied to pension and family pension, calculated like Dearness Allowance for serving employees.

- **Voluntary Retirement:** Pension starts from the date of superannuation (if continued working) after 25 years of service.

Additional Details:

- Proportionate pension for those with 10–24 years of service.

- Minimum pension of Rs. 10,000/month for employees with 10+ years of service.

- No UPS benefits if an employee is re- moved, dismissed, or resigns.

Eligibility:

- Applies to both current and future Central Government employees under NPS who opt for UPS.

- Requires a minimum of 10 years of qualifying service for pension benefits.

UPSC Relevance

The Unified Pension Scheme is important for UPSC as questions on National Pension System (2017) and Atal Pension Yojana (2016) have been asked in previous exams

Source: *https: //www.thehindu.com/news/national/judicial-officers-pension-unified-pension-scheme-notified-centre-tells-supreme-court/article69210523.ece*

Serious Fraud Investigation Office (SFIO)

What's the Buzz?

No illegality in ordering SFIO probe against one-person-company.

Background

What is the Serious Fraud Investigation Office (SFIO)?

- **Establishment:** Set up under the Companies Act, 2013.

- **Parent Body:** Operates under the Ministry of Corporate Affairs.

- **Nature:** Multi-disciplinary organization tackling white-collar crimes and frauds.

Objectives and Functions:

- **Purpose:** Detect, investigate, prosecute, or recommend prosecution of serious corporate frauds.

- **Expertise:** Comprises specialists in accountancy, forensic auditing, banking, law, IT, investigation, company law, capital markets, and taxation.

Limitations:

- **Scope:** Does not investigate frauds or criminal charges against individuals (focus is on corporate entities only).

UPSC Relevance

The Serious Fraud Investigation Office (SFIO) is important for UPSC as questions on financial regulations were asked in Prelims, including Financial Stability and Development Council in 2016 and Benami Transactions (Prohibition) Act in 2017

Source: *https://sfio.gov.in/en/about-department/introduction/*

Financial Intelligence Unit India

What's the Buzz?

Finance Ministry's Financial Intelligence Unit imposes Rs. 5.49 crore fine on Paytm Payments Bank for PMLA lapses.

Background

- **Establishment:** Set up by the Government of India in 2004.
- **Parent Body:** Reports directly to the Economic Intelligence Council (EIC) headed by the Finance Minister.
- **Nature:** Central national agency responsible for receiving, processing, analyzing, and disseminating information related to suspect financial transactions.

Sharing of Information

Central Repository

Funtions

Collection of Data

Coordination

Research and Analysis
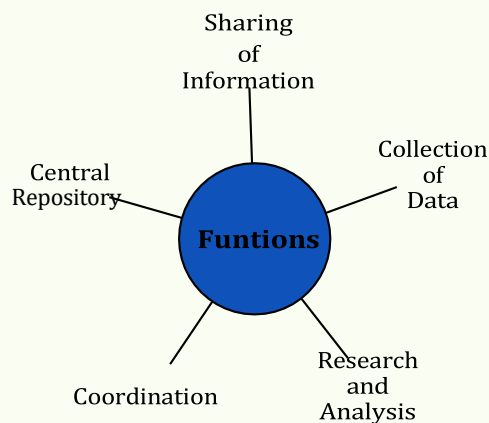
UPSC Relevance

The Financial Intelligence Unit – India (FIU-IND) is important for UPSC as ques- tions on financial regulations and anti- money laundering measures have been asked in Prelims, including Prevention of Money Laundering Act in 2020 and Finan- cial Action Task Force in 2010

Source: *https://fiuindia.gov.in/files/About FIU-IND/About_FIUIND.html*

Special Non-Resident Rupee (SNRR) Account

What's the Buzz?

RBI announces steps to encourage cross-border transactions in Indian rupee.

Background

What is the Special Non-Resident Rupee (SNRR) Account?

- **Definition:** A current account that can be opened by any non-resident individual or corporate entity with business interests in India.
- **Purpose:** Permitted for specific transactions, including trade, foreign investments, External Commercial Borrowings, and similar purposes.
- **Holder:** Non-resident individuals or corporates open it directly
- **Transaction type:** Used for trade, foreign investments, External Commercial Borrowings, etc
- **Currency used:** Indian Rupee(INR)

- **Focus:** Supports non-residents' business activities in India

Source: *https://www.thehindu.com/business/ Economy/rbi-announces-steps-to-encourage- cross-border-transactions-in-indian- rupee/article69105995.ece*

National Electric Mobility Mission Plan (NEMMP)

What's the Buzz?

Union Budget 2025: Allocation for electric mobility schemes rise by 20

Background

Overview:

- **Launched By:** Ministry of Heavy Industries, Government of India.

- **Objective:** Incentivize electric vehicles (EVs) to replace fossil fuels in trans- port (75% of transport emissions from roads).

Targets:

- 30% EV penetration by 2030.

- Self-reliance in EV R&D by 2047 (Viksit Bharat Initiative).

- 6-7 million annual EV sales since 2020 (National Electric Mobility Plan 2020).

Key Schemes:

- PM E-DRIVE Scheme

- SMEC (Electric Passenger Cars)

- PM-eBus Sewa Scheme

- FAME India (Phase II)

UPSC Relevance

The National Electric Mobility Mission Plan (NEMMP) is important for UPSC as questions on sustainable transportation and government initiatives have been asked in Prelims, including National Policy on Biofuels in 2020 and FAME Scheme

Source:
https://heavyindustries.gov.in/ministry-heavy- industries-electric-mobility-promotion-scheme- 2024

Unified Lending Interface (ULI)

What's the Buzz?

A digital public infrastructure (DPI) platform launched by the Reserve Bank of India (RBI) to enable seamless, consent-based flow of digital data for frictionless credit delivery.

Background

Overview:

- **Announced in:** 2023 as the "Public Tech Platform for Frictionless Credit"; later branded as ULI.

- **Function:** Connects disparate data sources—Central/State governments, banks, credit info companies, account aggregators, and digital identity authorities (e.g., Aadhaar).

- **Technology:** Uses common APIs with a "plug and play" model for easy access to financial/non-financial data.

- **Security:** Ensures borrower consent for data sharing, maintaining privacy.

UPSC Relevance

The Unified Lending Interface (ULI) is important for UPSC as questions on digital financial infrastructure and financial inclusion have been asked in Prelims, including Unified Payments Interface (UPI) in 2017 and MUDRA Scheme in 2016

Source: *https://www.thehindu.com/business/ Economy/what-is-the-unified-lending-interface- by-the-rbi-explained/article68598373.ece*

'Mission 500'

What's the Buzz?

India, U.S. to double bilateral trade to $500 billion by 2030.

Background

Overview:

- **Mission 500:** Double bilateral trade to $500 billion by 2030 (from $119.71 billion in 2023-24).

- **Bilateral Trade Agreement (BTA):** Phase 1 negotiations by Fall 2025, emphasizing fair trade and job creation.

- **US-India TRUST Initiative:** Enhances cooperation in AI, semiconductors, quantum computing, biotech, energy, and space.

- **INDUS Innovation:** Modeled on INDUS-X, drives space and tech partnerships.

- **2025 Space Milestones:** NASA-ISRO collaboration via AXIOM for first In- dian astronaut to ISS; NISAR satellite launch.

Source:
https://www.thehindu.com/news/national/prime-minister-narendra-modi-us-president-donald-trump-meeting/article69218133.ece

Science & Technology

Artemis Mission

What's the Buzz?

NASA delays Artemis II mission to the Moon again, launch rescheduled for April 2026

Background

- Artemis mission is a lunar mission which indent to establish the first long term presence on Moon.

- It will land the first woman, first per- son of color, and first international partner astronaut on Moon.

- NASA partnered with 3 space agencies: **European Space Agency (ESA)**, **Canadian Space Agency (CSA)** and **Japan Aerospace Exploration Agency (JAXA)**

- Mission is divided into 4 parts:

Mission	Feature
Artemis I	First uncrewed integrated flight test of Space Launch System(SLS) and Orion spacecraft around Moon
Artemis II	First crewed flight test of Space Launch System and Orion spacecraft around Moon
Artemis III	First to send humans to explore the region near the lunar South Pole.
Artemis IV	To establish first lunar space station (Lunar Gateway)

- **Apollo 17 mission:** Lunar mission in 1971 to first establish human presence in Moon

- **Artemis Accord:**

  - Non-binding multilateral agreement to set guidelines for peaceful civil exploration and use of outer space and celestial bodies.
  - Established in 2020 by USA, with seven founding members: Australia, Canada, Italy, Japan, Luxembourg, the UAE, and the UK. Later signed by 47 countries.

UPSC Relevance

Previously, flagship space missions from both India and other countries (**e.g., Mangalyaan, Themis Mission, etc.**) have been featured in the UPSC prelims.

Source: *https://www.nasa.gov/humans-in-space/artemis/*

China's Chang'e-6 lunar probe

What's the Buzz?

China's lunar exploration mission has returned soil and rock samples from the side of the moon that's permanently facing away from the earth

Background

- Chang'e 6 is a Chinese lunar lander and sample return mission that landed on the far side of the Moon within the **South Pole(Aitken Basin)**

- It was launched on 3rd May 2024 and landing took place on June 1, 2024

- The Chang'e moon exploration program, which is named after a Chinese moon goddess

Source: *https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=CHANG-E-6*

Cassini Huygens Mission

What's the Buzz?

NASA's Cassini spacecraft uncovered deep mysteries of Saturn's moon Titan, before its final plunge

Background

- Cassini Huygens spacecraft is launched in 1997, as a collabo- rative project between **NASA, the European Space Agency (ESA)**, and the **Italian Space Agency (ASI).**

- The purpose of the mission is to study **Saturn and its moons**

- The Huygens probe landed on **Titan, Saturn's largest moon**, marking the first direct exploration of its surface and atmosphere. **Major Observations:**

  ◊ Conducted an in-depth study of Saturn's atmosphere, rings, and magnetosphere.
  ◊ Discovered new rings and studied the intricate structure of existing ones.
  ◊ Revealed that Enceladus and Ti- tan as possible locations for extra-terrestrial life

- The mission ended in 2017 as the probe entered Saturn's atmosphere

UPSC Relevance

The UPSC Prelims 2014 included ques- tions about spacecraft such as **Cassini-Huygens, Messenger, and Voyager.**

Source:
https://science.nasa.gov/mission/cassini/

Axiom-4 Mission

What's the Buzz?

Indian astronaut Shubhanshu Shukla to pilot Axiom-4 mission to International Space Station

Background

- Axiom-4 is a **private spaceflight** to International Space Station operated by Axiom Space, an US based space infra- development company, in collab-oration with NASA

- The mission uses **SpaceX Crew**

Dragon reusable spacecraft.

- The Huygens probe landed on **Titan, Saturn's largest moon**, marking the first direct exploration of its surface and atmosphere.

- The spacecraft will be docked with ISS for 14 days.

- This mission part of Axiom Space's project to establish first commercial space station.

- Indian Astronaut, **Shubhanshu Shukla** will be the pilot of the mission.

- He is also part of India's maiden hu- man spaceflight mission, **Gaganyaan**, scheduled for launch in 2025.

Source:
https://www.axiomspace.com/missions/ax4

InSight Mars Mission

What's the Buzz?

The InSight lander, operational on Mars since 2018, detected liquid water beneath the Martian surface

Background

- InSight is the mission by NASA dedi- cated to study the interior of Mars

- The InSight lander touched down on **Mar's Elysium Planitia** on 2018, and its primary objective is look deep be- neath Mar's surface and understand the origin of it.

- The mission ended on December 2022.

- It also found that Mars lacks tec- tonic plates like Earth but has volcani- cally active regions that can generate tremors.

Source:
https://science.nasa.gov/mission/insight/

JUICE Mission

What's the Buzz?

The JUICE probe will use the gravity of the moon to swing towards the earth and then use the earth's gravity to slow down

Background

- The European Space Agency's **Jupiter Icy Moons Explorer - JUICE** mission was launched in 2023 using the **Ariane 5** rocket from Europe's Spaceport

- It will arrive at Jupiter and its moons in 2031 after an eight-year journey.

- This mission marks the **maiden Lunar-Earth flyby** along with the first-ever double gravity assist manoeuvre

- The mission will make detailed observations of the giant gas planet and its three large ocean-bearing moons – **Ganymede, Callisto and Europa.**

- JUICE mission is a collaborative project of **ESA and NASA**

SPACE
Jupiter's moons compared with Earth
JUICE will explore Jupiter's likely water-bearing moons - Ganymede, Callisto and Europa. Under their icy surfaces are thought to be oceans of liquid water.

UPSC Relevance

The UPSC Prelims 2014 included questions about spacecraft such as **Cassini-Huygens, Messenger, and Voyager.**

Source: *https://www.esa.int/ Science_Exploration/Space_Science/Juice*

PROBA-3

What's the Buzz?

PSLV-C59 places PROBA-3 satellites into designed orbit with precision

Background

- Proba-3 is an **In-Orbit Demonstration (IOD)** mission of the **European Space Agency.**

- The mission goal is to demonstrate precise formation flying and to study the solar corona, the Sun's outermost and hottest atmospheric layer.

- Proba-3 comprises two satellites:
  - **Occulter Spacecraft:** This satellite casts a shadow to create an artificial eclipse.
  - **Coronagraph Spacecraft:** Positioned in the shadow, this satel- lite observes and photographs the Sun's corona.

- Proba-3 spacecraft was a dedicated commercial mission of NewSpace India Limited (NSIL).

Source: *https://www.isro.gov.in/PSLV_C59_PROBA-3_Mission.html*

PS4-Orbital Experiment Module (POEM)

What's the Buzz?

ISRO's PSLV-C60 Mission: 10 payloads from non-government entities successfully deployed on POEM-4

Background

- The PSLV Orbital Experimental Mod- ule is a platform designed to conduct **in-orbit experiments** by utilizing the **final stage (fourth stage) of the Polar Satellite Launch Vehicle (PSLV)**.

- It converts potential space debris into a research platform to conduct microgravity experiments lasting up to three months.

- It was developed by the **Vikram Sarabhai Space Centre (VSSC)**

- POEM-4, launched as part of the PSLV-C60 SpaDeX mission, carries a total of 24 payloads, including 14 from

ISRO/DOS centers and 10 from Non-Government Entities (NGEs).

- The POEM is power by solar panels has a navigation, guidance, and control (NGC) system to stabilise its altitude along with helium control thrusters.

- It connects with ISRO's NavIC satellite constellation for navigation purposes.

- The POEM provided platform for conducting experiments on robotics, space science, agriculture and microbiology

Compact Research Module for Orbital Plant Studies (CROPS):

- CROPS, a part of POEM, is designed to **demonstrate the germination and growth of cowpea seeds in space**, aiming to sustain the plants until they develop to the two-leaf stage.

- It features sensors to track essential parameters such as oxygen, carbon dioxide, relative humidity, temperature, and soil moisture, ensuring a stable growth environment for the plants.

- The research is conducted with a vision to establish a sustainable plant cropping long term space mission
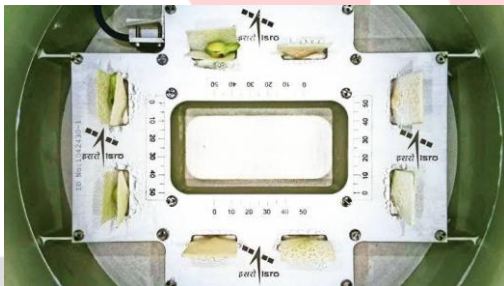
UPSC Relevance

Questions about a country's airspace sovereignty have been asked in the UPSC Mains exam.

Source: *https://www.isro.gov.in/POEM_4_Payloads spadex.html*

INSPACe & New Space India Ltd

What's the Buzz?

ISRO, IN-SPACe, and NSIL have achieved a milestone by signing 75 Transfer of Technology agreements with private companies since mid-2020

Background

INSPACe:

- IN-SPACe is an **independent, single-window nodal agency** established in 2020, under the Department of Space (DOS)

- It was established after space sector reforms to facilitate private sector participation.

- The agency acts as an interface between ISRO and Non-Governmental Entities (NGEs) and assesses how to utilize India's space resources better and increase space-based activities

INSPACe:

- NewSpace India Limited (NSIL), established in 2019 is a **wholly owned Government of India company**, under Dept. of Space

- NSIL is ISRO's **commercial arm**, responsible for enabling Indian industries to undertake high-tech space activities and to promotes and commercializes products and services from the Indian space program

- Major Business Areas of NSIL

  - **Launch Vehicle Production:** Manufacturing PSLV and SSLV through industry partnerships.

  - **Space-Based Services:** Providing launch services, transponder leasing, remote sensing, and mission support

  - **Satellite Development:** Building communication and Earth observation satellites as per user requirements

  - **Technology Transfer:** Commercializing ISRO-developed technologies.

  - **Spin-off Marketing:** Promoting products and services derived from ISRO activities

  - **Consultancy Services:** Offer- ing expertise in space-related domains

Source: *ISRO*

Gaia Mission

What's the Buzz?

> Astronomers have discovered a gigantic black hole named Gaia BH3 hiding close to the earth

Background

- Gaia mission was launched by the **European Space Agency (ESA)** on 2013 to build the **largest, most precise three-dimensional map of Milky Way Galaxy**

- The mission aims to survey over one billion stars, monitors each of its target stars about 14 times per year and providing precise measurements of their positions, distances, and movements.

- **Objectives of Gaia mission includes:**
    - **Galactic Census:** Surveying over one billion stars to construct a highly detailed 3D map of the Milky Way.
    - **Stellar and Galactic Evolution:** Mapping different stellar populations to understand the formation, structure, and evolution of the Milky Way.
    - **Planet Detection:** Identifying thousands of exoplanets by detecting minute stellar wobbles caused by gravitational interactions with orbiting planets
    - **Brown Dwarf Detection:** Identifying brown dwarfs, which are sub stellar objects that failed to sustain nuclear fusion.
    - **Asteroid and Comet Discovery:** Cataloguing minor planets, including asteroids and comets within the Solar System
    - **Supernova Detection:** Issuing early warnings and enabling detailed studies of these stellar explosions, which are essential for measuring cosmic distances
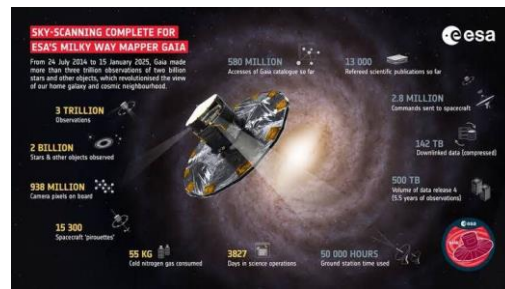
Source: *https://www.esa.int/Science_Exploration/Space_Science/Gaia/Gaia_overview*

Super Earth

What's the Buzz?

> 55 Cancri e Planet (a.k.a Janssen), is an exo planet which is rocky recently found

Background

- Super-Earth, a unique class of planets unlike any in our solar system, are more massive than Earth but lighter than ice giants like Neptune and Uranus, consisting of gas, rock, or both.

- These exo-planets can be **3- 10 times heavier than earth** and nature of these planets remains uncertain.

- The atmospheric temperature so high enough to vaporize metals.

Source: *https://science.nasa.gov/exoplanets/super-earth/*

Pushpak

What's the Buzz?

> Pushpak, ISRO's reusable launch vehicle, clears test

Background

- RLV-LEX-02 showcased the RLV's autonomous landing ability despite harsh release conditions from a helicopter.

- Pushpak, the winged vehicle was lifted by an Indian Air Force Chinook helicopter and released from an altitude of 4.5 km

- It autonomously reached the runway and stopped using a brake parachute,

landing gear brakes, and nose wheel steering.

- The mission was a collaborative ef- fort of Vikram Sarabhai Space Cen- tre (VSSC), Liquid Propulsion Systems Centre (LPSC), and the ISRO

UPSC Relevance

The UPSC Prelims 2018 included questions about India's satellite lauch vehicles like **PSLV and GSLV.**

Kodaikanal Solar Observatory

What's the Buzz?

IIA finds a novel way to explore the sun's secrets by studying solar magnetic fields

Background

- It is established in 1899 as Solar Physics Observatory, located at **Palani range of hills, T.N**

- This solar observatory was established primarily to investigate the link be- tween solar activity and India's sea- sonal rainfall, prompted by the Great Drought of 1875-1877

- The observatory is equipped with ad- vanced instruments like **H-alpha tele- scope** and the **White Light Active Re- gion Monitor (WARM)** for high solar imaging

- Kodaikanal Solar observatory played a crucial role in solar physics, such as identifying the radial motion of sunspots, referred to as the **Evershed Effect**

- Recently the Kodaikanal Tower Tun- nel Telescope studied the transfer of mass and energy through magnetic

field at different layers of the solar at- mosphere, which is the prime driver of the solar wind

Dark matter, Dark energy

What's the Buzz?

New study of supernova calls dark energy's existence into question

Background

Dark Matter:

- Dark matter is the theoretical matter does not interact with the electromag- netic force

- It outweighs visible matter, making up **about 27%** of the universe

- Researchers deduce the existence of dark matter only from its apparent gravitational influence on visible mat- ter

- It is considered as one of the force which hold together the galaxies

Dark Energy:

- Dark energy is the hypothetical form of energy makes up approximately **68% of the universe**

- It is distributed evenly throughout the universe

- They tend to accelerate the expansion of the universe

Neutrino Oscillations

What's the Buzz?

Nobel laureate supports India's pursuit for a neutrino lab

Background

Neutrino:

- They are the subatomic particles which have **no electric charge**

- They are very tiny, and rarely interact with other matters

- They are the **second largest abundant particle** in the universe, after photons

- There are 3 flavours or types of neutrinos- **electron-neutrino, muon-neutrino and tau-neutrino**

Neutrino Oscillation:

- It is an unusual quantum phenomenon in which the 'flavour' of neutrino changes to another one while they travel.

Indian Neutrino Observatory:

- It is a particle research project located at **Bodi West Hills (BWH) region in the Theni district of Tamil Nadu**

- The purpose of the project is to in the study neutrinos and to understand the origin of the universe

- The major detector used in the project is **Iron Calorimeter (ICAL)**

- The project is jointly funded by the **Department of Atomic Energy** and the **Department of Science and Technology**, collaboration with **Tata Institute of Fundamental Research, Mumbai**

UPSC Relevance

A question about the IceCube Neutrino Observatory appeared in the UPSC 2018 Prelims exam.

Source:
https://www.indiascienceandtechnology.gov.in/ megascienceprojects/india-based-neutrino- observatory-ino

Dirac Fermions

What's the Buzz?

Physicists have proposed the existence of a distinct particle known as the semi-Dirac fermion.

Background

- The semi-Dirac fermion is a emer- gent particle that exhibits **direction-dependent behaviour**

- It acts **massless in one direction while possessing mass in the other**

- This phenomenon arises when the particle's energy is solely derived from its motion, allowing it to exist as nearly pure energy moving at the speed of light

Source: *https://www.thehindu.com/sci- tech/science/what-are-bosons-and-how-did- they-get-their-name/article22343300.ece*

Bletchly Declaration

What's the Buzz?

Global leaders agree to launch first international network of AI Safety Institutes to boost cooperation of AI

Background

- First global initiative to address the risk of Frontier AI.

- It brings collaboration and commitment among high level political leaders and major global AI players

- The declaration was signed at **world's first AI Safety Summit 2023** held at Bletchly Park, England.

- It was signed by 28 countries, including **USA, China, European Union and India**

- **Frontier AI:**

  - Frontier AI are advanced generative AI models which are revolutionize industries, enhance human capabilities and address some of the world's most pressing challenges

  - They are characterized by adapting to new situations, performing complex tasks and ability to generate creative outputs

UPSC Relevance

AI and its advancement based question is asked in UPSC prelims 2020

Source: *https://www.gov.uk/government/publications/ ai-safety-summit-2023-the-bletchley-declaration/ the-bletchley-declaration-by-countries-attending- the-ai-safety-summit-1-2-november-2023*

National Quantum Mission

What's the Buzz?

UN declares 2025 the Year of Quantum Science Windows

Background

- National Quantum Mission (2023) aims to create an innovative ecosystem for Quantum Technology (QT) by scale up scientific and industrial R&D

- **The objective of National Quantum Mission includes:**

  - Developing intermediate-scale quantum computers with 50- 1000 physical qubits in 8 years.
  - Create a workforce of over 25,000 in India over next 5-7 years
  - To establish long-distance secure quantum communications with other countries

- Mission Implementation involves establishing four Thematic Hubs (T- Hubs) at leading academic and na- tional R&D institutes, focusing on:

  - **Quantum Computing**
  - **Quantum Communication**
  - **Quantum Sensing & Metrology**
  - **Quantum Materials & Devices**

Quantum

- Quantum mechanics is the field of physics that explains how extremely small objects simultaneously have the characteristics of both particles and waves. (Wave- particle duality)

- A quantum is the smallest indivisible unit of a natural phenomenon in a system with bound states

Source: *https://dst.gov.in/national-quantum- mission-nqm*

Nuclear Clock

What's the Buzz?

Scientists have created the first prototype of a nuclear clock

Background

- A nuclear clock is a **highly precise timekeeping device** that tracks time using changes in an atom's nucleus

- It operates by exciting an **atom's nucleus (a thorium-229 nucleus)** using a laser tuned to a specific frequency

Difference between Atomic clock and Nuclear clock:

- Atomic clocks track frequency changes in the entire atom, whereas nu- clear clocks measure shifts specifically within the nucleus

- Nuclear clocks have **10 times greater accuracy** than atomic clocks

How a Nuclear Clock Works

Source: *https://www.nist.gov/news- events/news/2024/09/major-leap-nuclear- clock-paves-way-ultraprecise-timekeeping*
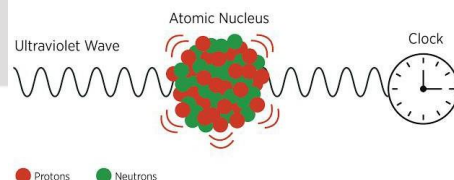
Bharat-Gen

What's the Buzz?

Union Science and Technology Minister Jitendra Singh launched BharatGen, an initiative to make generative AI available to citizens in different Indian languages

Background

- BharatGen initiative in generative AI designed to **revolutionize public service delivery and boost citizen engagement**

- The project is led by **IIT Bombay** under the National Mission on Interdisciplinary Cyber-Physical Systems **(NM-ICPS)** of the Department of Science and Technology (DST)

- The initiative aims to develop generative AI systems capable of producing high-quality text and multimodal content in multiple Indian languages.

- BharatGen will cater to both text and speech, ensuring coverage across India's diverse linguistic landscape

Source: *https://dst.gov.in/launch-bharatgen-first-government-supported-multimodal-large-language-model-initiative*

Artificial Intelligence Data Bank

What's the Buzz?

India Unveils AI Data Bank to Propel Innovation and Strengthen National Security

Background

- AI Data Bank is **India's first centralized AI data bank**, which was launched by the **Ministry of Science and Technology**

- Its functions include storing diverse data for training, testing, and developing AI models and to create scalable

and inclusive AI systems

- It provides high-quality datasets for **Predictive analytics, Machine learning, Natural language processing (NLP) and Computer vision**

- It also enables real-time analytics for satellite, drone, and IoT data and supports disaster management and cybersecurity initiatives

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2075176/*

Bharat Small Modular Reactors

What's the Buzz?

The Union Budget 2025-26 outlines a significant push to clean energy schemes

Background

Small Modular Reactors:

- These are type of nuclear reactors that are smaller in size and capacity

- Typically, they have power generation capacity from **30 to 300 Megawatt**, which is 1/3rd of normal nuclear reactors

- Their components can be **factory based manufacturing** and transported to location for installation

- In India, **Bhabha Atomic Research Centre (BARC), Mumbai** is developing SMRs for repurposing retiring coal-based power plant

UPSC Relevance

A question about nuclear reactors and the use of heavy water in them was asked in the UPSC Prelims 2011 exam.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2099244*

Indian Cyber Crime Coordination Centre (I4C)

What's the Buzz?

Union Home Minister said that government will deploy 5000 cyber commandos in next

5 years

Background

- The Indian Cyber Crime Coordination Centre (I4C) is a program established by the **Ministry of Home Affairs**, in 2020 to tackle the rising challenges of cybercrime across the nation

- I4C focuses on address all the is- sues related to Cybercrime for the cit- izens, which includes improving coor- dination between various Law Enforce- ment Agencies and the stakeholders

- **Objective of I4C includes:**

  ◊ Serves as nodal agency for com- bating cybercrimes nationwide
  ◊ Simplify the process of reporting cybercrime incidents and analyz- ing emerging trends.
  ◊ To acts as an early warning sys- tem for Law Enforcement Agencies for proactive Cybercrime preven- tion and detection
  ◊ Awareness creation among public about preventing Cybercrime.
  ◊ Assist States/UTs in capacity building in the area of cyber foren- sic, investigation, cyber hygiene, cyber-criminology, etc.

- **Key features of I4C:**

  ◊ Nationwide Cybercrime Reporting Portal
  ◊ Cross-jurisdictional coordination
  ◊ National Cybercrime Threat Ana- lytics Unit (TAU)
  ◊ Capacity Building, Skill Develop- ment and collaboration with pri- vate sector

सहवीर्यं करवावहै • Working Together With Vigour

UPSC Relevance

Questions related to cybersecurity were asked in the UPSC Prelims exams of 2020 and 2017.

Caller ID Spoofing

What's the Buzz?

DoT Orders Takedown of Apps and Content Enabling Caller ID Spoofing

Background

- Caller ID spoofing is a method of dis- guising the phone number that ap- pears as the call's origin.

- This is carried out to mislead the call recipient into thinking the call is from a trusted source, like a government agency, bank, or family member

- This method used in **masking iden- tity, bypassing call blacking, ex- ploiting Interactive voice response systems and social engineering**

- To prevent call spoofing, TRAI sug- gested implementing **Calling Name Presentation (CNAP)** to display caller names verified through KYC docu- ments.

Green Ammonia and Hydrogen

What's the Buzz?

The State government of Andhra Pradesh approved the establishment of a 1.0 MMTPA green hydrogen-based green am- monia manufacturing plant at Kakinada

Background

Green Ammonia:

- It is produced by **Haber process** using hydrogen from **water electrolysis** and nitrogen extracted from air

- The entire process of production is based on fully renewable and carbon- free method

- The uses of Green ammonia include:

  ◊ Cleaner fuel alternative for heavy engines and electricity production

- Carbon neutral fertilizer manufacturing
- Eco-friendly pharmaceutical manufacturing and water treatment

Green Hydrogen:

- Green hydrogen is produced through electrolysis powered by renewable energy sources

- The process includes splitting water into hydrogen and oxygen using electricity

National Green Hydrogen Mission:

- It was launched in 15th August 2021 to aid the government in meeting its climate targets and making India a green hydrogen hub

- The target of the mission includes:
  - To develop **5 MMT (Million Metric Tonne)** Green Hydrogen production capacity by **2030**
  - Add **125 GW** of renewable energy capacity.
  - Attract **INR 8 trillion** in investments by 2030
  - Create **over six lakh jobs**

- Key Sub missions of NGHM are:
  - **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT):** To funds domestic manufacturing of electrolysers and Green Hydrogen production
  - **Support for Pilot Projects & Green Hydrogen Hubs:** To identifies and develops hydrogen hubs for large-scale production and utilization.

UPSC Relevance

Question regarding hydrogen fuel cell was asked in UPSC prelims 2010.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=1799067*

Pre-eclampsia

What's the Buzz?

World Pre-eclampsia Day, May 22, raise consciousness about the life threatening condition

Background

- Pre-eclampsia is a pregnancy related medical condition characterized with hypertension and organ failure, especially liver and kidney

- Generally, they occur after the 20th week of pregnancy, threatening life of both pregnant woman and fetus

- **Symptoms:** Include hypertension, headache, blurry vision, vomiting

- **Causes:** The exact cause of Pre-eclampsia is not fully understood. It is thought to be caused by the placenta not developing properly due to a problem with the blood vessels supplying it

- **Treatment:** The only possible treatment is giving birth. The symptoms may last for 6 months after delivery

Source: *https://www.nhs.uk/conditions/pre-eclampsia/treatment/*

Klebsiella pneumoniae bacteria

What's the Buzz?

Researchers at Columbia University discovered that K. pneumoniae bacteria produce the Neo protein using reverse transcriptase when infected by bacteriophages

Background

- Klebsiella pneumoniae bacteria is commonly found in the **human gastrointestinal and respiratory tract**

- It could lead to **severe pneumonic and urinary infection** in weak immunized patients

- **Reverse transcriptase**: It is the process of converting RNA to DNA using enzymes

- This method is independently discovered by Howard Temin and David Baltimore in 1970

- When Klebsiella pneumoniae bacteria was attacked with bacteriophages, it produces protein called '**Neo**' using reverse transcriptase
- **Protein 'Neo':** It is protein synthe- sized by Klebsiella pneumoniae bacte- ria from non-coded RNA using reverse transcriptase to defend against the attack of bacteriophage
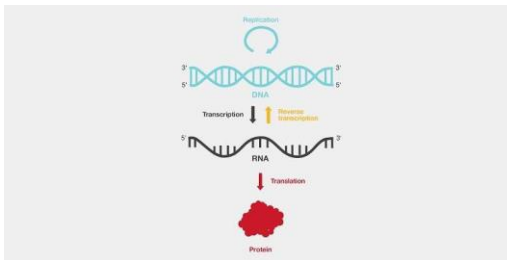
Source:
*https://www.thehindu.com/sci-tech/science/
klebsiella-pneumoniae-central-dogma-new-
genes-reverse-transcriptase/article68249504.ece*

Extrapulmonary Tuberculosis (EPTB)

What's the Buzz?

World Health Organization reported increase in the case of Extrapulmonary Tuberculosis (EPTB)

Background

- Extrapulmonary Tuberculosis (EPTB) is the type of active TB which occurs in parts other than lungs
- They consist of about 20% of active TB cases globally, and develop in the **lymph nodes, brain, gut, eyes**, or other organs
- The infections can persist even after the TB infection in the lungs is resolved
- Extrapulmonary TB is more frequent in immunosuppressed persons and children
- The European Region is facing an increasing notification rate of extrapulmonary TB: in this region seven countries **(Finland, the Netherlands, Norway, Sweden, Turkey, the United Kingdom and Uzbekistan)** reported more than 30% of cases

Tuberculosis:

- Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis
- It spreads from person to person through the air, and can lead to acute pneumonia
- **Symptoms:** Chronic cough, Loss of weight and appetite, fever
- **Major drugs used:** Isoniazid (INH), Rifampicin, Pyrazinamide, Ethambutol

UPSC Relevance

Tuberculosis related question was asked in UPSC prelims 2019.

Source: *https://tbksp.who.int/en/node/1956*

Prosopagnosia

What's the Buzz?

Study finds gene mutation that turns familiar faces into strangers

Background

- Prosopagnosia, commonly known as **face blindness** is a condition where people have difficulty in recognising people's faces and facial expression
- It is caused by either underdevelopment of brain area that recognize faces, or due to brain injury
- The mutation of **MCPT2 gene**, which helps in social cognition, may cause prosopagnosia
- There is no treatment for this condition till now

Source:
*https://www.thehindu.com/sci-tech/science/
study-finds-gene-mutation-that-turns-familiar-
faces-into-strangers/article68351534.ece*

Radiation Biodosimetry

What's the Buzz?

Radiation biodosimetry: the ABCs of responding to a radiological event

Background

- Biodosimetry is the measurement of amount of radiation to which an individual was exposed to, based on changes in blood, urine, or hair

- It can accurately determine the radiation dose received by an individual by analysing biological markers, to detect chromosomal abnormalities in white blood cells

Source: *https://www.iaea.org/newscenter/news/biodosimetry-helps-detect-radiosensitive-individuals-interim-results-of-an-iaea-coordinated-research-project/*

Dark Oxygen

What's the Buzz?

Scientists found some Pacific Ocean rocks can produce oxygen, called 'dark oxygen', without sunlight

Background

- At depths of 5 km, sunlight cannot penetrate, oxygen is produced by naturally occurring **metallic "nodules" of iron and manganese hydroxides**

- One hypothesis for this oxygen production is that these nodules split seawater into hydrogen and oxygen

- This is a ground-breaking discovery, which scientist found out another source of oxygen naturally other than photosynthesis

UPSC Relevance

A question related to seabed exploration was asked in a previous UPSC Prelims exam.

Source: *https://www.bbc.com/news/articles/c728ven2v9eo*

Vaccine driven Polio

What's the Buzz?

A polio case has been confirmed in a two-year-old child in Meghalaya, raising concerns as India was declared polio-free by WHO in 2014

Background

- It is a rare type of poliovirus that usually emerges from the **Oral Polio Vaccine (OPV)**

- Typically emerges in communities with low sanitation and immunity levels

- It occurs when the weakened virus in OPV is excreted through stool after activating the immune system

- This virus can spread in areas with **poor sanitation and low immuniza- tion**, undergoing genetic changes that

Types of Vaccine-derived polio

Type	Feature
Circulating Vaccine-Derived Poliovirus (cVDPV)	Spreads in communities, causing outbreaks, especially in areas with low vaccination rates
Immunodeficiency-Related Vaccine-Derived Poliovirus (iVDPV)	Occurs in individuals with primary immunodeficiencies; the weakened immune system cannot clear the vaccine virus, allowing it to mutate
Ambiguous Vaccine-Derived Poliovirus (aVDPV)	Cases where the source is unclear and do not fit into the other two categories

- The use of Inactivated Polio Vaccine (IPV), which uses a killed virus can eliminate the risk of Vaccine driven Polio

Polio:

- **Polio (Poliomyelitis)** is a highly infectious viral disease affecting children under 5 years

- It is transmitted from person-to-person, mainly through faecal-oral route

- It can lead to severe complications such as paralysis, disability, or even death

Polio Eradication in India:

- **The Universal Immunization Programme (UIP):** Launched in 1978 as

the Expanded Programme on Immu-nization, is one of the world's largest public health initiatives, providing free vaccines for 12 preventable diseases to over 5 crore children and pregnant women annually

- **Pulse Polio Programme Launch (1995):** It uses Oral Polio Vaccine strategy and make sure every child under the age of 5 is vaccinated

- **Introduction of Inactivated Polio Vaccine (2015):** It was introduced to provide additional protection, espe-cially against type 2 polio virus

- Finally, on **27th March 2014, India was officially declared polio-free**

UPSC Relevance

Question regarding **Mission Indradanush** was asked on UPSC prelims 2016

Source: *https://www.cdc.gov/vaccines/vpd/polio/hcp/vaccine-derived-poliovirus-faq.html*

mPOX

What's the Buzz?

The World Health Organization (WHO) has reaffirmed that mpox remains a public health emergency of international concern (PHEIC)

Background

- Mpox, formerly called monkeypox, is a viral disease caused by the monkeypox virus, a member of the **Orthopoxvirus genus**

- The symptoms of mPOX include rash, fever, muscle aches and swollen lymph nodes

- It spreads from person to person mainly through close contact with someone who has mPOX. It can also be passed to the baby during pregnancy

- **MVA-BN vaccine** is the first vaccine to get approved by WHO for preventing mPOX

Source: *https://www.who.int/news-room/fact-sheets/detail/mpox*

Biofilm barriers

What's the Buzz?

A team of scientists at the Indian Institute of Science (IISc) has devised a way to break down 'biofilm barriers' to aid entry of drugs

Background

- A biofilm is a community of bacteria or other microorganisms that adhere to either natural or artificial surfaces and develop a slimy, protective layer com-posed of extracellular substances like sugars, proteins, and DNA

- This layer acts as a shield which make the antibiotics difficult to penetrate and destroy the microorganism inside

- The team of scientist used an en-zyme from the cow's digestive system to break down these barriers
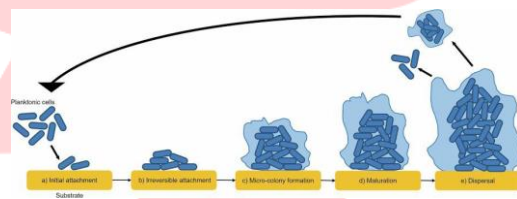
UPSC Relevance

The UPSC asked about biofilms in prelims 2022.

Source: *https://www.thehindu.com/news/national/karnataka/iisc-scientists-find-a-way-to-break-down-biofilm-barriers-by-using-cows-gut-enzyme-to-aid-entry-of-drugs/article68855983.ece*

BioE3 policy

What's the Buzz?

Union cabinet approves BioE3 Policy to propel high-performance biomanufactur-ing in India

Background

- The BioE3 **(Biotechnology for Econ-omy, Environment and Employ-ment)** Policy establishes guidelines and principles to facilitate mecha- nisms for advancing high-performance bio manufacturing across various sec-

tors in the country.

- It aligned with India's vision of **Green Growth** and 'Lifestyle for Environment (LiFE)

- The objective of the policy includes:
    - ◇ Accelerate the development and commercialization of bio-based technologies
    - ◇ Establish **BioEnablers** to support biomanufacturing across various sectors

- Key Components of BioEnablers
    - ◇ Bio-Artificial Intelligence (Bio-AI) Hubs
    - ◇ Enhance research and innovation for bio-based technologies
    - ◇ Utilize data-driven research and AI-informed predictive analytics

Biofoundries & Biomanufacturing Hubs

- Bio-Artificial Intelligence (Bio-AI) Hubs

- Enhance research and innovation for bio-based technologies

- Utilize data-driven research and AI-informed predictive analytics

Six key thematic sectors of national importance have been selected under this policy:

- Bio-based Chemicals & Enzymes

- Functional Foods & Smart Proteins

- Precision Biotherapeutics

- Climate-Resilient Agriculture

- Carbon Capture & Utilization

- Futuristic Marine & Space Research

UPSC Relevance

Questions on advancements in genetics and biotechnology have been asked multiple times in both the UPSC Prelims and Mains exams.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2078063*

The 90-70-90 strategy

What's the Buzz?

The World Health Organization's 90-70-90 strategy aims to eliminate cervical cancer by 2030 through widespread HPV vaccina- tion, screening, and treatment

Background

Cervical Cancer:

- Cervical cancer affects in a woman's cervix, the lower part of the uterus

- It is the 4th most common form of cancer among women worldwide

- It is primarily caused by a persistent infection with certain strains of **HPV**

India's status on Cervical cancer:

- Cervical cancer contributes to approximately **6-29%** of all cancers in women in India

- It is 2nd most frequent cancer among women between 15 and 44 years of age

The WHO's global strategy for eliminating cervical cancer proposal includes:

- **Vaccination:** 90% of girls fully vaccinated with the HPV vaccine by the age of 15

- **Screening:** 70% of women screened using a high-performance test by the age of 35, and again by the age of 45

- **Treatment:** 90% of women with precancer treated and 90

Each country should meet the **90–70–90 targets by 2030** to get on the path to eliminate cervical cancer within the next century

WHO's 90-70-90 Targets to Eliminate Cervical Cancer by 2030

90% — 90% of girls fully vaccinated with the HPV vaccine by age 15.

70% — 70% of women screened with high-performance tests at 35 and 45.

90% — 90% of women with pre-cancer treated, and 90% of invasive cases managed.

Source:
https://www.who.int/initiatives/cervical-cancer-elimination-initiative

Schedule H Drugs

What's the Buzz?

CDSCO suggested to sell antibiotics only in separate blue envelope

Background

- According to the **Drugs and Cosmetics Act, 1940**, the schedule H drugs are those medicines which contain a **very high alcoholic influence**

- These are used to treat some serious diseases like heart diseases, anxiety disorders and other diseases

- It can be sold only based on the prescription of a registered medical practitioner

Central Drugs Standard Control Organisation(CDSCO):

- It is India's National Regulatory Authority (NRA) for the medical devices industry, operating under the provisions of the Drugs & Cosmetics Rules

- The head of the CDSCO is **Drugs Controller General of India (DCGI)**

- **Functions of CDSCO includes:**

  - Oversees the import of drugs
  - Approves new drugs and clinical trials
  - Grants approval for certain drug licenses as the **Central License Approving Authority (CLAA)**
  - Laying down the standards for Drug
  - Coordination of the activities of State Drug Control Organizations

Source: *https://cdsco.gov.in/opencms/ opencms/en/About-us/Introduction/*

Geography

Teesta River

What's the Buzz?

Bangladesh is preparing to include China in the proposed multipurpose project of the Teesta river

Background

- Teesta is a tributary of the Ja- muna River (Brahmaputra River) flow- ing across India and Bangladesh.

- It has length of 309 km and drainage area of 12,540 km²

- It originate as Chhombo Chhu from Khangchung Chho, a glacial lake at 5,280 m in northeastern Sikkim

- In India, Teesta flows south, carving a deep gorge through the **Siwalik Hills east of Darjeeling (West Bengal)**, then southeast via the Sivok Khola pass onto West Bengal plains

- In Bangladesh it traverses the Rangpur region, joining the Jamuna River near Chilmari after a 320 km journey

- **Left-Bank Tributaries**: Lachung Chhu, Chakung Chhu, Dik Chhu, Rani Khola, Rangpo Chhu

- **Right-Bank Tributaries**: Zemu Chhu, Rangyong Chhu, Rangit River

UPSC Relevance

The Teesta River is important for UPSC as questions on river water disputes and international treaties have been asked in Prelims, including Indus Waters Treaty in 2017 and Kaveri River Dispute in 2016

Multipurpose Seaweed Park

What's the Buzz?

Government unveils guidelines for seaweed imports to boost coastal economy

Background

- **Seaweed**

  – Seaweeds are marine algae com- monly found along coastlines, varying in size and color.

  – They are nutrient-rich and widely used in industries like food, cos- metics, and agriculture, with nu- merous global applications

- **Seaweed Park in India**

  – The Multi-Purpose Seaweed Park seeks to enhance seaweed farm- ing to boost employment, develop value-added products, and sup- port conservation efforts

  – Spanning 136 coastal fishing vil- lages, it aids entrepreneurs and represents a major investment in seaweed cultivation and research, benefiting scientists, researchers, and local communities

- **Sagar Parikrama Yatra**

  – The initiative focuses on raising awareness of **sustainable marine resource utilization and promot- ing schemes for coastal popula- tions**

– It strives to balance the use of marine resources for food security and livelihoods with the preservation of marine ecosystems

UPSC Relevance

The First Multipurpose Seaweed Park (proposed) in India is important for UPSC as questions on blue economy and marine resource utilization have been asked, including Sagarmala Project in 2016 and Blue Revolution in 2018

Source: *https://www.thehindubusinessline. com/economy/agri-business/government- unveils-guidelines-for-seaweed-imports-to-boost- coastal-economy/article68795398.ece*

Urban Heat Island

What's the Buzz?

The ongoing climate change and rapid urbanization are now defining the Anthropocene, with cities experiencing both, making the urban population vulnerable to the compounding impact.
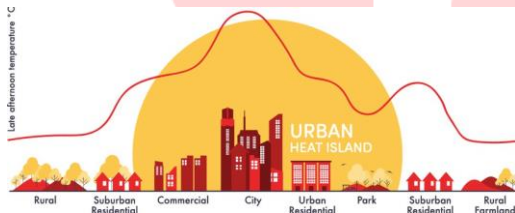
Background

- **Concept of Urban Heat Island**

  – It is the phenomenon where urban areas experience **signifi- cantly higher temperatures (5°C to 10°C)** than surrounding rural areas due to human activities and infrastructure.

  – The major cause is **replacement of natural landscapes with concrete, asphalt, and buildings that absorb and retain heat**

  – UHI is now aggravated by rapid urbanization and global warming trends.

- **Factors Contributing to UHI**

  – **Built Environment**:

  * Tall buildings and roads trap heat and alter wind patterns (e.g., wind tunnels).
  * Hard surfaces (concrete, asphalt) increase heat retention and runoff, raising flood risks.

  – **Human Activities**:

  * Emissions from traffic and industries release heat and pollutants.
  * Reduced green spaces limit natural cooling.

  – **Meteorological Impact**:

  * Complex rain, wind, and heat patterns emerge in urban settings.
  * Worsens heatwaves and degrades air quality.

Global Response – WMO Initiatives

- **Resolution 32 (18th World Meteorological Congress)**:

  – Focus on developing a technical guide on measuring, monitoring, and modeling UHI.

  – The objective is to support member countries in urban planning and service delivery to mitigate UHI impacts.

Implications for India

- **Relevance**: Rapid urban growth in cities like Delhi, Mumbai, and Bangalore amplifies UHI effects.

- **Challenges**:

  – Increased heat stress on urban populations.

  – Higher energy demand for cooling (e.g., air conditioning).

  – Worsened air pollution and flood risks.

- **Opportunities**: Integration of WMO guidance into urban planning (e.g., green roofs, urban forests).

UPSC Relevance

The Urban Heat Island (UHI) effect is important for UPSC as questions on climate and urbanization were asked, including Heat Waves in 2022, while the World Meteorological Organization (WMO) is relevant

for global climate institutions, like IPCC in 2019

Source: *https://community.wmo.int/en/activity-areas/urban/urban-heat-island*

Landslide Atlas of India

What's the Buzz?

Wayanad, Kerala (which was struck by a deadly landslide event taking almost 200 lives) was ranked 13th on Indian Space Research Organisation (ISRO) 'Landslide Atlas of India'.
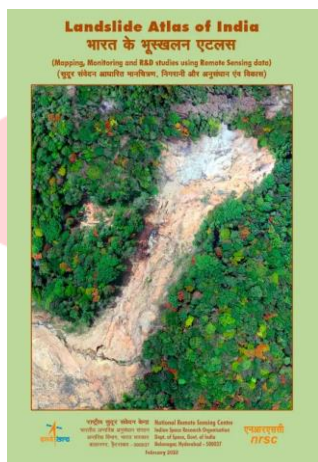
Background

- The Landslide Atlas of India is pre- pared by **NRSC/ISRO under Disas- ter Management Support (DMS)** Programme.

- It covers the geospatial landslide inventory database of .i.e., ap- prox. 80,000 landslides in India (1998– 2022).

- There are landslide-prone areas in **17 states and 2 Union Territories (UTs) – Himalayas and Western Ghats**

- The objective of the atlas is to de- tails landslides, damage assessment, and socio-economic exposure ranking of districts.

Types of Landslide Inventory

- **Seasonal Inventory**: Pan-India land-slide data for rainy seasons of 2014 and 2017.

- **Event-Based Inventory**: Major events include:

  – Kedarnath disaster
  – Kerala floods
  – Sikkim earthquake

- Includes large valley-blocking land-slides.

- **Route-Wise Inventory**: Landslides along key tourist and pilgrimage routes.
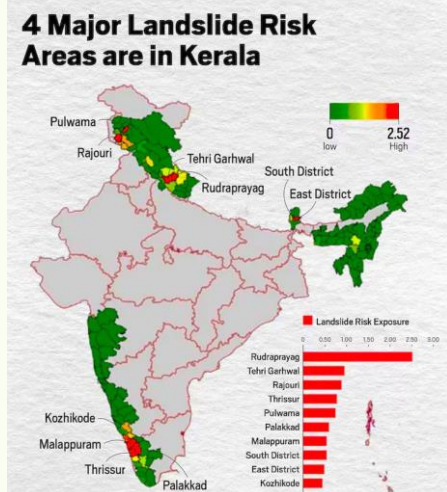
Key Findings in Landslide Atlas

- **Geographical Scope**: 17 states and 2 UTs (Himalayas and Western Ghats).

- **District Ranking**: 147 districts ranked based on landslide exposure using socio-economic parameters.

Source: *https://www.isro.gov.in/Landslide Atlas India.html*

Swell Waves

What's the Buzz?

Swell waves organise themselves into groups of similar heights and periods, and then travel long distances without much change.
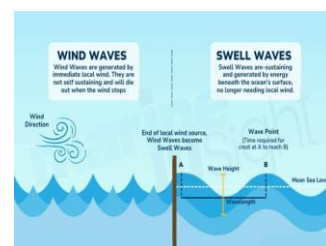
Background

- Swell waves refers to **long-wavelength waves formed on sea surfaces**, consisting of multiple surface gravity waves.

- These waves self-organize into groups with consistent heights and periods, traveling vast distances with minimal alteration.

- **It is generated by distant weather events like hurricanes or prolonged strong gale winds, not local breezes**

- During storms, significant energy shifts from the atmosphere to the ocean, creating towering waves that can journey thousands of kilometers from their origin until they reach coastlines.

Source: *https://www.thehindu.com/sci-tech/energy-and-environment/what-are-swell-waves-explained/article68755965.ece*

Rat Hole Mining

What's the Buzz?

Recently, a rat-hole mining tragedy in Assam left nine miners trapped after flooding in an illegal coal mine.
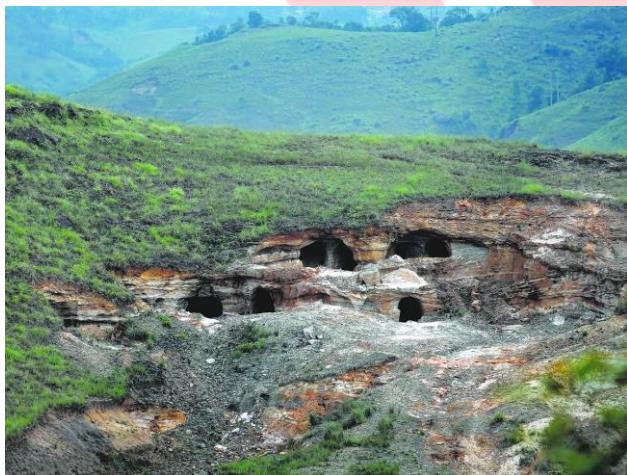
Background

- **Rat-hole mining**: A crude, labor-intensive, and dangerous coal mining method.

- It involves digging narrow tunnels (3-4 feet deep, 2-3 feet wide), just big enough for workers to crawl in and extract coal.

- Often uses child labor, making it even more hazardous.

- Common in Northeast India, especially in Meghalaya and Assam.

- **Types of extraction methods**:
  - Side-Cutting Mining
  - Box-Cutting Mining

- **Environmental impact**: Causes land degradation, deforestation, and water pollution.

UPSC Relevance

Rat-hole mining is important for UPSC CSE as it relates to environment, economy, and ethics. It covers issues like illegal mining, environmental damage, labor rights, and sustainable development policies.

Source: *https://www.thehindu.com/news/national/understanding-rat-hole-mining-explained/article67588357.ece*

Artesian Condition

What's the Buzz?

In a village in Rajasthan, a rare phenomenon occurred when water forcefully gushed out from the ground after a farmer drilled a tube well 850 feet deep.
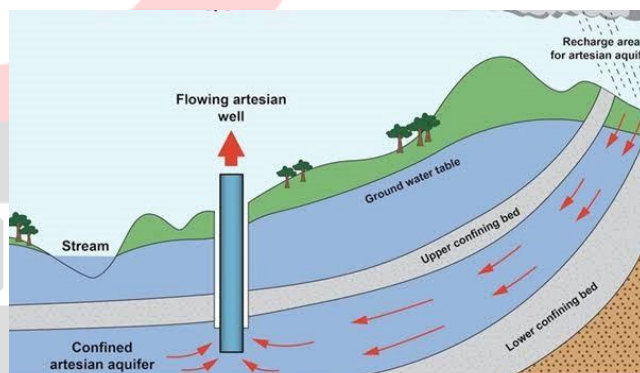
Background

- **Artesian conditions**: Occur when groundwater is trapped under pressure between two impermeable layers (rock or clay).

- The water remains pressurized within the confined aquifer.

- When the upper layer is punctured

(e.g., by drilling a well), the water rises naturally to the surface.

- Famous artesian wells are found in:
    - **The Great Artesian Basin (Australia)**
    - **Dakota Aquifer (USA)**
    - **Parts of Africa**

UPSC Relevance

Artesian conditions are relevant to UPSC for understanding groundwater systems, water resource management, and geographical features related to hydrology.

Source: *https://www.usgs.gov/special-topics/water-science-school/science/artesian-water-and-artesian-wells*

Lake-Effect Snow

What's the Buzz?

The Great Lakes region in the U.S. is fac- ing severe winter weather, with heavy lake-effect snow and freezing temperatures.

Lake effect snow forms when **cold air** moves over **warm water**
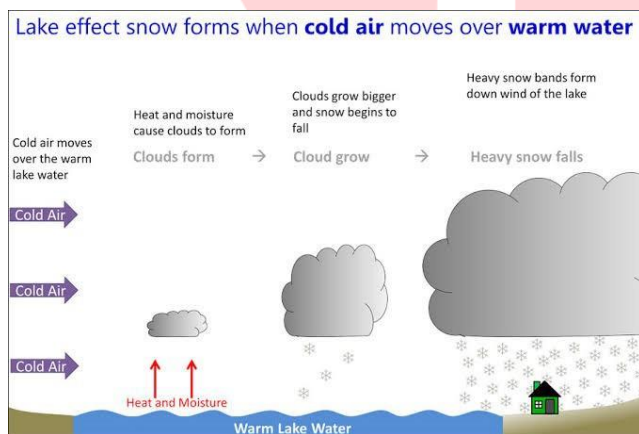
Background

- Lake-effect snow occurs when cold air moves over warmer lake water, causing heavy snowfall.
- It is common near the Great Lakes in the United States.
- Wind speed, wind direction, and topography influence its occurrence and intensity.
- **Formation process**:
    - Cold air from Canada passes over the warmer, unfrozen Great Lakes.
    - Heat and moisture rise into the atmosphere, forming clouds.
    - These clouds develop into narrow snow bands, producing 2-3 inches of snow per hour or more.
- **Great Lakes involved**: Superior, Michigan, Huron, Erie, and Ontario.

Source:
https://www.weather.gov/safety/winter-lake-effect-snow

Marine Heat Waves & Twilight Zone

What's the Buzz?

Recently, researchers investigated Marine Heatwaves (MHWs) and cold spells within the largely underexplored twilight zone of the ocean.

Background

- **Marine Heatwaves (MHWs)**:
    - MHWs occur when sea temperatures rise 3-4°C above normal for at least five days, lasting weeks, months, or even years.
    - They lead to **coral bleaching, seagrass destruction, and kelp forest loss**, severely impacting fisheries and marine ecosystems.
- **Causes of Marine Heatwaves**:
    - Powerful ocean currents trap and build up warm water, fueling MHWs.
    - Heat from the atmosphere transfers to the ocean surface, intensifying warming.
    - Shifting wind patterns can ei- ther strengthen or weaken marine heatwaves.
    - **El Niño and ENSO** increase the frequency and intensity of these events in specific regions.
    - Global warming worsens MHWs as oceans absorb excess heat from greenhouse gas emissions.

TWILIGHT ZONE

Animals here influence the recycling of nutrients and long-term storage of carbon in the ocean, but little is known about them and what they do. Climate change and human exploitation are likely to change these functions.
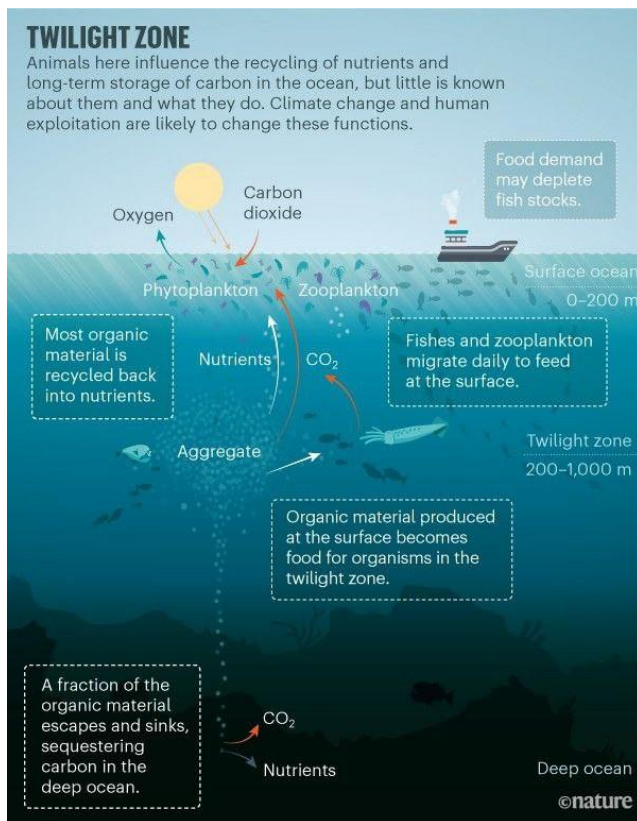
Twilight Zone:

- The Twilight Zone, also called the **Mesopelagic Zone**, lies between 200 to 1,000 meters below the ocean's surface.

- It is located between the **Epipelagic Zone (sunlit surface) and the Bathypelagic Zone (deep, dark waters)**

- **This zone is dimly lit, with minimal sunlight that is insufficient for photosynthesis, hence the name "twilight."**

- It is home to unique marine life, including bioluminescent organisms and species that migrate between the surface and deeper waters.

- The Twilight Zone plays a key role in carbon storage, helping the ocean absorb carbon dioxide from the atmosphere.

- **It hosts the largest animal migration on Earth**, where species travel between deep waters and the surface.

- Marine creatures have adapted with bioluminescence (for camouflage) and large mouths (to maximize rare prey encounters in the dark).

Source: *https://noc.ac.uk/under-the-surface/twilight-zone*

Notified Disasters

What's the Buzz?

The 15th Finance Commission declined to add heat waves to the notified disaster list.

Background

- **Disaster Management Act, 2005**: Defines a disaster as a catastrophe, mishap, calamity, or grave occurrence caused by natural or man-made factors.

- **12 disasters currently classified as Notified Disasters**:
    - Cyclone, drought, earthquake, fire, flood, tsunami
    - Hailstorm, landslide, avalanche, cloud burst
    - Pest attack, frost, and cold wave

- **Notified disasters** are eligible for relief assistance under the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF).

Heat Waves

- **Heatwaves**: Periods of abnormally high temperatures occurring in India's summer season.

- They usually occur between March and June but can sometimes extend into July.

- Heatwaves are not classified as a Notified Disaster under the Disaster Management Act, 2005.

Source: *https://www.google.com/amp/s/www.downtoearth.org.in/amp/story/natural-disasters/centre-has-no-plans-to-include-heatwave-as-notified-disaster*

Olympus Mons

What's the Buzz?

Recently, Scientists have discovered frost on Mars' tallest volcano, Olympus Mons, revealing an active water cycle on the Red Planet

Background

- **Olympus Mons is a shield volcano situated in Mars' western hemisphere**

- It is the highest point on Mars and the **largest known volcano in the solar system**, standing at 16 miles (24 kilometers) high, which is about three times taller than Mt. Everest

- Olympus Mons is approximately 3.5 billion years old, indicating it formed early in Mars' history

- The summit has a **large depression called a caldera**, spanning 50 miles (80 kilometers) wide

Source: *https://www.space.com/20133-olympus-mons-giant-mountain-of-mars.html*

Denmark Strait Cataract

What's the Buzz?

The Denmark Strait Cataract, the world's largest hidden underwater waterfall, plunges 11,500 feet beneath the Arctic Ocean
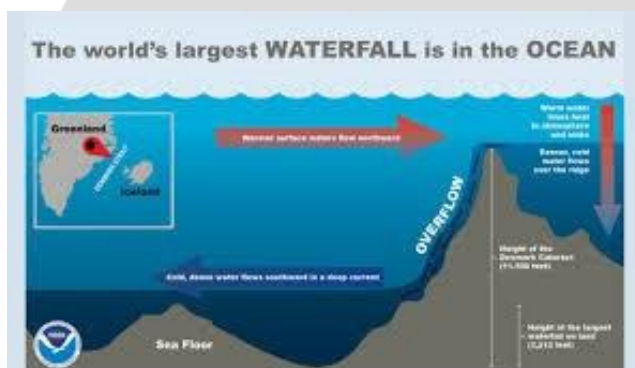
Background

- A **cataract** is typically a large waterfall or a rapid drop of water over a steep incline

- Denmark Strait cataract is an underwater phenomenon, spanning 480 kilometers between **Greenland and Iceland**, is hidden beneath the Arctic waters

- The Denmark Strait cataract is invisible to the naked eye

- Hidden deep beneath the ocean's surface and unseen by the public, it plays a crucial role in global ocean circulation and climate systems

Source: *https://oceanservice.noaa.gov/facts/largest-waterfall.html*

Ocean Anoxic Event 1a (OAE 1a)

What's the Buzz?

A recent study has provided new insights into the timing and duration of Ocean Anoxic Event 1a (OAE 1a)

Background

- By analyzing prehistoric rocks and fossils from **Mount Ashibetsu, Japan**, researchers have identified the causes and timeline of OAE 1a, a major event that led to widespread oxygen depletion (anoxia) in Earth's oceans

- OAE 1a refers to a period during the **Cretaceous Period (145 million years ago and ended 66 million years ago) when Earth's oceans became depleted of oxygen**, causing a significant disruption in marine life

- Triggered by massive volcanic eruptions, which released large amounts of carbon dioxide (CO_2).

- The volcanic activity created carbonic acid, which dissolved sea creatures' shells and worsened oxygen depletion

Source: *https://pmc.ncbi.nlm.nih.gov/articles/PMC11578182/*

2024 as the hottest year recorded

What's the Buzz?

The World Meteorological Organization (WMO) and Copernicus Climate Change Service (C3S) have reported that 2024 is the hottest year since pre industrial period

Anomalies and extremes in sea surface temperature in June 2024
Data: ERA5 1979–2024 • Reference period: 1991–2020 • Credit: C3S/ECMWF
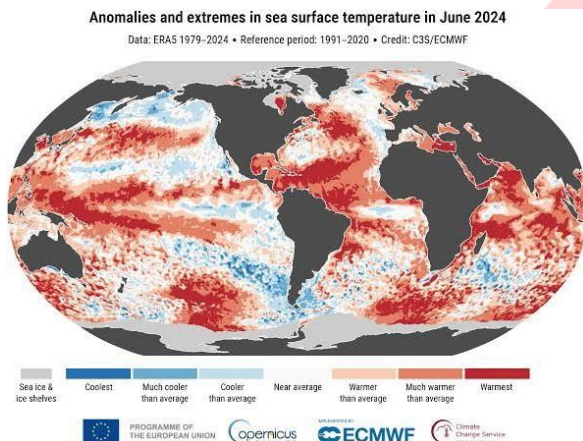
Background

- According to the **Copernicus Climate Change Service (C3S), 2024 is the first year to surpass the 1.5-degree Celsius warming threshold**

- In October 2024, temperatures were recorded 1.65°C above pre-industrial levels

- According to the 6th IPCC report, land temperatures have risen by 1.59°C since preindustrial times, while oceans have warmed by 0.88°C

Source: *https://wmo.int/news/media-centre/wmo-confirms-2024-warmest-year-record-about-155degc-above-pre-industrial-level*

Landfall of a cyclone

What's the Buzz?

Recently, Cyclone Dana made landfall in Odisha
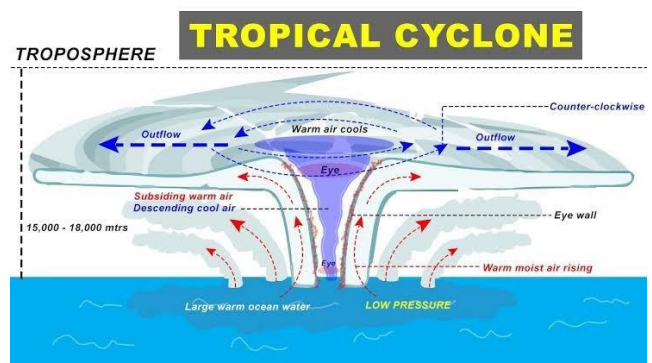
Background

- Landfall is the event of a **tropical cyclone moving from water onto land**, specifically when the storm's center (eye of the cyclone) crosses the coast

- Landfalls last for a few hours

- Cyclones lose intensity after landfall as they are cut off from the moisture of the ocean, marking the start of their weakening

Source: *https://rsmcnewdelhi.imd.gov.in/landfall.php*

Cryoconite

What's the Buzz?

On the surface of the Greenland Ice Sheet, the presence of low-albedo features greatly contributes to ablation zone meltwater production
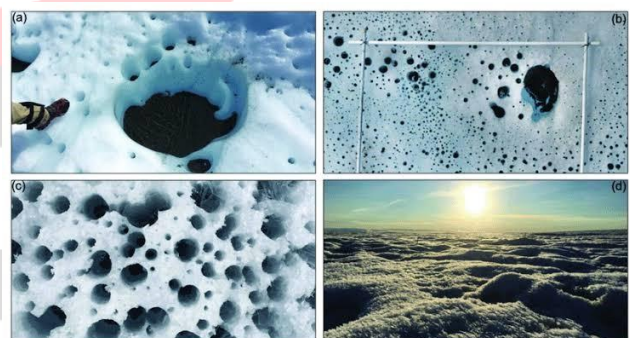
Background

- **Cryoconite is a small hole in the surface of the glacier, which serves as a trap for fine sediments composed of small rock particles, soot and bacteria**

- The dark sediment inside a cryoconite has low albedo – it absorbs solar radia-

tion and promotes ice melting beneath it, forming cylindrical holes

- With time, as the layer of sediments becomes thicker, it isolates the underlying ice from heat and a reversed situation occurs – the ice around cryoconite melts faster, and a cone of ice with a cap of sediments is formed

- Scientists have observed that as the amount of meltwater on the surface of the glacier increases, it flows into these holes and eventually makes its way to the glacial flows underneath

- This process is leading to a rising output of methane from the **Isunnguata Sermia glacier of Greenland**

Source: *https://polarpedia.eu/en/cryconite/*

Lithium Exploration

What's the Buzz?

India Signs Agreement for Lithium Exploration & Mining Project in Argentina's Catamarca province

Background

- An agreement was signed between **Khanij Bidesh India Limited (KABIL)** and Catamarca Minera y Energética Sociedad del Estado **(CAMYEN SE)**, a state-owned enterprise of **Argentina's Catamarca province**

- This is the **first-ever lithium exploration and mining project signed by a state-owned companys**

- It also aid India's objective to attain net-zero emissions by 2070

- India's first major lithium reserve has been found in the **Salal-Haimana area of Reasi District in Jammu and Kashmir**

- **Argentina holds 20 percent of the world's lithium resources**

- Argentina is also part of the "**Lithium Triangle**" along with Chile and Bolivia

UPSC Relevance

The Lithium Exploration topic is important for UPSC as questions on critical miner-als and energy resources have been asked, including lithium's properties and uses in 2020 and India's mineral dependencies in 2023

Source: *https://polarpedia.eu/en/cryconite/*

Aurora Borealis

What's the Buzz?

Recently, auroras, usually seen in high-latitude regions like the North and South Poles, were observed globally, including in unusual locations. The Aurora Borealis was even spotted over Leh

Background

- Commonly known as the **Northern Lights**, the Aurora Borealis occurs in the **northern hemisphere, mainly in areas near the Arctic Circle**

- It happens when charged particles like electrons and protons from the Solar wind interact with Earth's magnetic field and atmosphere

- Auroras are only visible at night, and usually appear in lower polar regions

- These particles collide with gases like oxygen and nitrogen, releasing energy as light, creating colourful displays in the sky, mainly near the poles

- **The colour - blue and purple from nitrogen, green and red from oxygen gases**

- Auroras are typically seen at even higher latitudes but the intense storm must have pushed them to lower lati-tudes.

- They can trigger blackouts on the Earth, knock out satellites in space, endanger the lives of astronauts, and affect space weather throughout the Solar System

UPSC Relevance

The Aurora Borealis is important for UPSC, with a question on Aurora Australis and Aurora Borealis asked in Mains 2024

Source: *https://education.nationalgeographic.org/resource/aurora/*

Isostatic Rebound

What's the Buzz?

Over the past 89,000 years, Mount Ever- est, currently standing at 8,849 meters, has grown approximately 15 to 50 meters taller than previously estimated
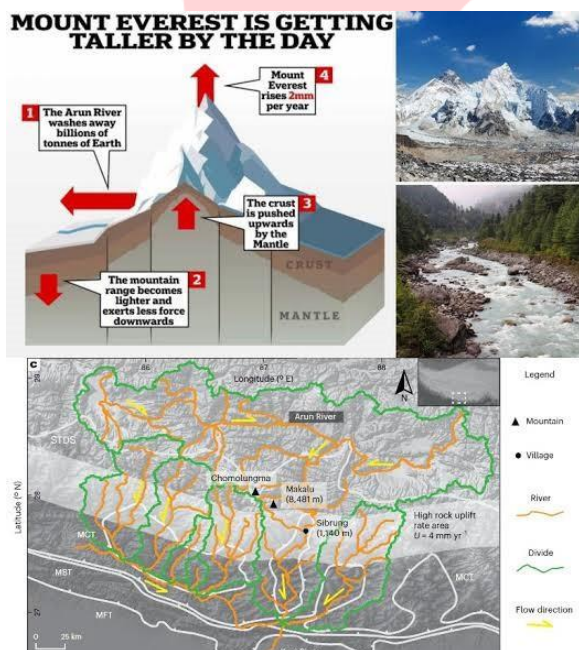
Background

- Isostatic rebound (also called conti-nental rebound, post-glacial rebound) is the rise of the Earth's crust when heavy material, like ice or eroded land, is removed, as seen in the Arun River basin

- This happens because the crust, which is floating on the semi-fluid mantle beneath it, "bounces back" when the weight on it decreases

Arun River:

- Arun River originates in the **Tibetan Plateau as Phung Chu or Bum-chu**, and flows southward through **Nepal** where it merges with the **Kosi River**

UPSC Relevance

The Isostatic Rebound concept is impor- tant for UPSC as questions on geologi- cal processes and landform development have been asked, including the formation of fjords in 2022 and plate tectonics theo- ries in 2021

Source:
https://www.antarcticglaciers.org/glaciers-and-climate/comic-corner/isostatic-rebound/

History & Culture

Nalanda University

What's the Buzz?

PM inaugurates Nalanda University Campus in Rajgir, Bihar

Background

- Nalanda university is situated beside the **Rajgir hills, Bihar.**

- The revitalized Nalanda University beckons with the message, **"Learning is being here."**

- It is the oldest residential university in the world founded by **Kumaragupta in 5th century BCE**

- The campus is a **'Net Zero Green' Campus**

- Notable Chinese scholars **I-Qing** and **Xuan Zang** visited Nalanda University

- The university was destroyed in the late 12th century by **Bakhtiyar Khilji**

- The ruins of Nalanda University were rediscovered in 1812 by Scottish surveyor **Francis Buchanan-Hamilton**

- It was designated as a **UNESCO World Heritage Site** in 2016

UPSC Relevance

Nalanda University is important for UPSC Prelims due to its role in **Ancient education, Buddhism, and UNESCO heritage**

Source: *https://nalandauniv.edu.in/about-nalanda/history-and-revival/*

Charaideo Moidam

What's the Buzz?

Royal burial mounds of Assam now on UNESCO World Heritage List

Background

- Assam's Charaideo Moidams has been inscribed as **India's 43rd UNESCO World Heritage Site**

- Located in the foothills of the Patkai Ranges in eastern Assam, the site serves as the royal necropolis of the **Tai-Ahom dynasty**

- The Moidams, the Ahom Dynasty's mound-burial system, are often referred to as the **"Pyramids of Asia"**

- India ranks 6th globally in the number of World Heritage Properties

- It is Assam's third UNESCO World Heritage Site, after **Kaziranga National Park** and **Manas Wildlife Sanctuary**

- Moidams of Charaideo represent royal lineage through grand architecture, akin to Egyptian pyramids and ancient Chinese royal tombs

Source: *https://whc.unesco.org/en/list/1711/*

UNESCO World Heritage Committee

What's the Buzz?

India to host 46th UNESCO heritage panel session

Background

- UNESCO World Heritage Committee established under the **1972 Convention concerning the Protection of the World Cultural and Natural Her- itage**

- After the World War 2, there was a international concern to protect cultural heritage from widespread destruction.

- Committee meets once a year and consists of **21 member states elected by the UNESCO General Assembly**

- Members serve a four years term

- Each member State of the World Heritage Committee has one vote

- The Five C's of the World Heritage Committee- **Credibility, Conservation, Capacity-Building, Communication,Communities**

- This is the **first time** India is hosting the meeting

- India is not a permanent member of the World Heritage Committee

UPSC Relevance

World Heritage Committee was an option in 2014 upsc prelims question

Source:

Pashmina Shawls

What's the Buzz?

PM gifts silver 'Delhi-Delaware' train to Biden, Pashmina shawl to First Lady

Background

- Pashmina, also called "**soft gold**" or **cashmere wool**, is a **Geographical Indication (GI) certified wool** originating from the **Kashmir region of India**

- The wool used for weaving Pash- mina shawls comes from **Changth- angi goats**, which are domesticated in **Ladakh**

- The **Changpa tribes of Ladakh** harvest raw Pashm from Changthangi goats

- The Changpa are a semi-nomadic community inhabiting the Ladakh-Tibet region and are classified as a Scheduled Tribe

UPSC Relevance

Questions on the Changpa community and Pashmina goats were included in the 2014 UPSC Prelims exam

Source:

Ramcharitmanas, Panchatantra, and Sahṛdayaloka-Locana

What's the Buzz?

Ramcharitmanas included in UNESCO's Memory of the World Regional Register

Background
Literacy works and their description:

Literacy Work	Description
Ramcharitmanas	- Epic poem in **Awadhi language** by **Goswami Tulsidas** in 16th century - Word Ramcharitmanas means "Lake of the deeds of Rama" - Based on Ramayana of Valmiki

Panchatantra	• Collection of ancient Indian fables by **Vishnu Sharma in 3rd century BCE** • It imparts universal moral values and wisdom
Sahr̥dayaloka-Locana	• 15th-century Sanskrit text authored by **Kashmiri scholars Acharya Anandvardhan and Abhinavagupta** • It is recog- nized for its aesthetic signifi-cance(rasa).

UNESCO Memory of World Register

- UNESCO's Memory of World Register programme was launched by UNESCO IN 1992

- It lists significant documents, manuscripts, oral traditions, audiovisual materials and collections of library and archive exhibits

- The Moidams, the Ahom Dynasty's mound-burial system, are often referred to as the **"Pyramids of Asia"**

- India ranks 6th globally in the number of World Heritage Properties

- It aims to ensure the protection and availability of the documentary heritage of member States of the Organization

UPSC Relevance

Literary works and their authors are a key focus in UPSC Prelims

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2020484#: ~:text=The%20Ramcharitmanas%2C% 20Panchatantra%20and%20Sah%E1%B9% 9Bday%C4%81loka,literary%20heritage%20and% 20cultural%20legacy*

World's oldest cave painting

What's the Buzz?

New studies says that the world's oldest cave art is 51,200 years old

Background

- The world's oldest known figurative cave painting is approximately 51,200 years old

- It was discovered in the limestone cave of **Leang Karampuang**, situated in the **Maros-Pangkep region of Sulawesi, Indonesia**

- This art represents a pig standing still with its mouth partly open and three human-like figures that are part-human and part-animal (theri-anthropes) surrounding it

- The dating was performed using Uranium series (U-series) analysis of calcite deposits overlying the rock art in limestone caves

UPSC Relevance

Questions about paintings, such as **Bani Thani and Bodhisattva Padmapani**, appeared in the UPSC Prelims in 2018 and 2017, respectively

Source: *https://whc.unesco.org/en/list/1711/*

Classical Language

What's the Buzz?

Centre set to tweak criteria for according classical language status

Revised Classical Language Criteria (Sahitya Akademi, 2024)

1. Antiquity
Early texts/records dating back 1500–2000 years.

2. Heritage Literature
A body of ancient texts valued across generations.

3. Diverse Knowledge Sources
Prose, poetry, inscriptions, and epigraphical evidence.

4. Continuity or Distinctness
Classical language may differ from or be disconnected from later forms.

Background

- In November 2004, the Ministry of Culture constituted the **Linguis- tic Experts Committee (LEC) un- der Sahitya Akademi** to evaluate languages proposed for Classical Language status

- Classical languages **- Tamil, Sanskrit, Telugu, Kannada, Malayalam, Odia, Marathi, Pali, Prakrit, Assamese**

UPSC Relevance

Questions on Classical Languages were asked in the UPSC Prelims in both 2014 and 2015

Source: *https://pib.gov.in/ PressReleaseIframePage.aspx?PRID=2061660*

Jagannath Temple, Puri

What's the Buzz?

Opening of Ratna Bhandar, treasury of Jagannath Temple took place after 46 years

Background

- A Hindu temple in Puri, Odisha, dedicated to Lord Jagannath, a form of Vishnu

- Built in the **12th century** during the reign of **King Anantavarman Chodaganga Deva of the Eastern Ganga dynasty exemplifies Kalinga architecture**

- Temple is often referred to as the **"White Pagoda"** and is part of the **Char Dham circuit**

- The **Nabakalebara ritual**, meaning "New Body," is a significant event in the Jagannath Temple that takes place every 12 years

- Ratha Yatra associated with this tem- ple

- It is also a **UNESCO World Heritage Site**

UPSC Relevance

Temple architecture is an important topic for UPSC

Source: *https://en.m.wikipedia.org/wiki/ Jagannath_Temple,_Puri*

Bhojshala Kamal Maula complex

What's the Buzz?

Madhya Pradesh HC orders ASI survey of Bhojshala complex
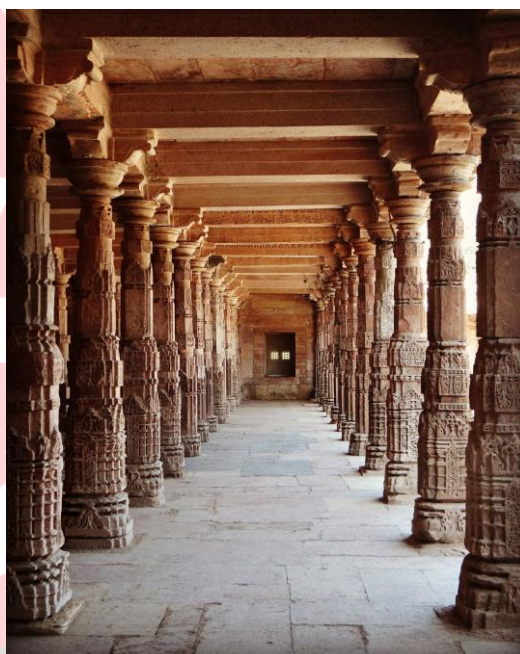
Background

- Bhojshala complex is located in Madhya Pradesh

- Bhojshala, an ASI-protected 11th-century monument, is regarded by Hindus as a temple dedicated to Vagdevi (Goddess Saraswati), while the Muslim community refers to it as Kamal Maula Mosque

- Built in **1034 AD by Raja Bhoja of the Paramara Dynasty**

- It served as a university where students studied music, Sanskrit, astronomy, yoga, Ayurveda, and philosophy

- It was first attacked by Alauddin Khilji

Prerna Sthal

What's the Buzz?

> Vice President inaugurates Prerna Sthal at Parliament House Complex

Background

> - Located at the Parliament House Complex
> - The Sthal contains statues of India's prominent leaders and freedom fighters, which were formerly scattered

World's oldest calendar

What's the Buzz?

> World's oldest calendar' discovered carved into 12000-year-old monument
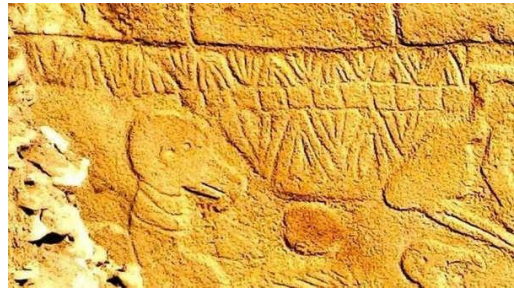
Background

> - Archaeologists at **Göbekli Tepe, Turkey**, discovered the world's oldest known **lunisolar calendar**
> - Ancient people used a lunisolar calendar to track seasonal changes
> - This calendar may have recorded a falling comet
> - Göbekli Tepe houses the world's oldest known man made structures and the oldest known temple complex
> - One of its pillars has 365 V-shaped markings, possibly representing days in a year
> - The solar calendar on the pillar consists of 12 lunar months plus 11 extra days
> - A V-mark near a bird-like figure's neck may indicate the summer solstice constellation of that era

Eri Silk

What's the Buzz?

> Union Textiles Minister Shri Giriraj Singh inaugurates Eri sericulture promotional project in Gujarat

Background

- Eri Silk, also known as **"Peace Silk" or "Vegan Silk,"** is a unique type of silk derived from the Eri silkworm

- It is the world's only vegan silk, where the moth is not killed inside the cocoon. Instead, the moth naturally emerges, leaving the cocoon intact for use

- This culture is primarily followed in **Assam and the north eastern states of India**

- It is a **Geographical Indication (GI) tagged product from Assam**

UPSC Relevance

Questions on the Geographical Indication (GI) tag were asked in UPSC Prelims 2015 and 2018

Source: *https://www.thetextileatlas.com/craft-stories/eri-silk-assam-india*

Geoglyphs and Petroglyphs of Ratnagiri

What's the Buzz?

Maharashtra notifies ancient rock art in Ratnagiri as 'protected monument'

Background

- Geoglyphs and petroglyphs are distinct ancient art forms of **Mesolithic era**, both involving the creation of images or designs on the earth's surface or rock surfaces

- Petroglyphs are created by carving or etching onto rock surfaces, while geoglyphs are large ground designs made by removing or arranging soil, stones, or vegetation

- Ratnagiri district is home to over 1,500 pieces of such art, known as "**Katal**

Shilpa", distributed across 70 sites

- There are two types of geoglyphs: positive geoglyphs and negative geoglyphs

- **Positive geoglyphs** are created by arranging materials on the ground, while **negative geoglyphs** are formed by removing part of the natural surface to reveal a different colour or texture

Source:
https://www.google.com/amp/s/timesofindia. indiatimes.com/city/mumbai/maharashtra- notifies-ancient-rock-art-in-ratnagiri-as-protected- monument/amp_articleshow/112453775.cms

Doddalathur Megalithic Site

What's the Buzz?

Megalithic burial site to be excavated in Mysuru

Background

- Doddalathur Megalithic Site is in **Karnataka**

- The term "Megalith" comes from the Greek words "mega" (large) and "lithos" (stone), referring to large stone structures, often linked to burials

- The site dates back to the Megalithic Period (Iron Age), roughly between **1200 BCE and 300 CE in South India**

- It was first discovered in 1961 by C. Krishnamurti of the Archaeological Survey of India (ASI).

- The village once had over 1,000 megalithic burials, but many have been disturbed or destroyed due to agriculture, settlement, and land development.

UPSC Relevance

Source: *https://timesofindia.indiatimes.com/city/mysuru/excavation-begins-at-doddalathur-megalithic-site-uncovering-iron-age-secrets/articleshow/113883774.cms*

Ajmer Sharif Dargah

What's the Buzz?

PM Modi sends annual Chadar offering to Ajmer Dargah

Background

- Ajmer Dargah is the mausoleum of **Khwaja Moinuddin Chishti** (also spelled Muinuddin or Mu'in al-Din)

- It is located in Ajmer, Rajasthan, and is an important place of worship for both Hindus and Muslims

- He is fondly known as **Gharib Nawaz** and played a crucial role in spreading Sufism in the Indian subcontinent

- The shrine was built by **Mughal Emperor Humayun** in his honor

- The death anniversary of Moinuddin Chishti is called the Urs Sharif festival

- **Chishti Order (Chishtiya)** was founded in India by Khwaja Moin- uddin Chishti

Major Sufi Orders	Founder
Chisti	Khwaja Moin-Uddin Chishti
Suhrawardi Order	Sheikh Shahabuddin Suharwardi Maqtul
Naqshbandi Order	Khwaja Baha-ul-din Naqsh band
Qadiriyya Order	Sheikh Abdul Qadir of Badaun

UPSC Relevance

Question related to Sufism was asked in 2012 UPSC Prelims examination

Source: *https://www.incredibleindia.gov.in/en/rajasthan/ajmer/ajmer-sharif*

Maha Kumbh

What's the Buzz?

UNESCO recognises Kumbh Mela's 'intangible cultural heritage' for being the world's most peaceful pilgrimage

Background

- Kumbh Mela is the largest peaceful congregation of pilgrims on Earth

- **The Shahi Snan**, also called **Rajyogi Snan**, marks the beginning of the Maha Kumbh Mela, where devotees bathe at the Sangam, the sacred con- fluence of the **Ganga, Yamuna, and the mythical Saraswati**

History:

- **Mythological Origin** – Based on the Puranas, where gods and demons battled for Amrit, with Vishnu (Mohini) securing it

- **Adi Shankaracharya's Role (8th Century CE)** – Institutionalized the tradition, founded 13 Akharas, and established the monastic system
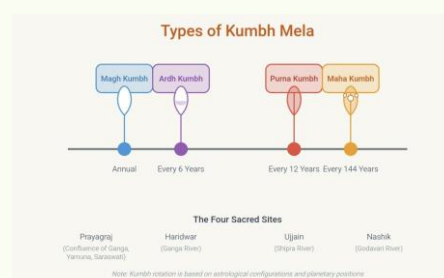
Types of Kumbh Mela

UPSC Relevance

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2070943*

Gangasagar Mela

What's the Buzz?

Gangasagar Mela broke records as 1.10 cr pilgrims took dip

Background

- Gangasagar Mela is the **world's sec- ond largest human congregation** at the confluence of holy river Ganga and Bay of Bengal after Kumbh Mela

- It takes place annually on Makar Sankranti at the Sagar Island in West Bengal

- Gangasagar is mentioned in the Mahabharata as well as in **Kalidasa's Raghuvamsa**

- After taking a dip in the Ganga, pilgrims also visit the temple of Kapil Muni

Source: *https://www.gangasagar.in/en/introduction.html*

Iron Age in India

What's the Buzz?

A new study says the Iron Age began hundreds of years earlier – in Tamil Nadu

Background

- The report Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu provides evidence of iron usage in Tamil Nadu as early as **3345 BCE**

- New scientific dates have been obtained from excavations at **Adichanallur, Sivagalai, Mayiladumparai, Kilnamandi, Mangadu, and Thelunganur**

- The Rigvedic period shows no recorded

knowledge of iron

UPSC Relevance

Questions on the Iron Age have appeared in previous UPSC Prelims exams

Source: *https://www.google.com/amp/s/frontline.thehindu.com/arts-and-culture/heritage/iron-age-ancient-tamil-nadu-archaeology-history/article69210433.ece/amp/*

Ratnagiri Buddhist Site

What's the Buzz?

New discovery of a 1.4-metre-tall Buddha head, along with tablets and stupas, some over 1,500 years old, in Odisha's Ratnagiri

Background

- The Ratnagiri site is considered a significant early center of the **Mahayana and Vajrayana (or Tantrayana) school of Buddhism**

- Vajrayana Buddhism emphasizes acquiring mystical power through Vajra, meaning thunderbolt or diamond

- Due to this association, the three Buddhist sites in Odisha—**Ratnagiri, Lalitgiri, and Udayagiri**—are collectively known as the "**Diamond Triangle**"

- The site stands on a hill between **Birupa and Brahmani rivers**

UPSC Relevance

Buddhism is one of the favourite topics of UPSC

Source: *https://www.google.com/amp/s/www.thehindu.com/news/national/odisha/the-relics-of-ratnagiri/article69243446.ece/amp/*

International Relations

IMEC (India-Middle East-Europe Economic Corridor)

What's the Buzz?

Implementation on the northern part of the corridor, which is mostly in West Asia, is going to move slowly until the conflict subsides, while progress is faster on the eastern leg connecting the UAE and Indian ports

Background

- IMEC is a connectivity project to develop seamless infrastructure (ports, railways, roads, sea lines, pipelines) linking **India, the Arabian Peninsula, the Mediterranean, and Europe**

- Launched in 2023 during the **G20 Summit in New Delhi** via a Memorandum of Understanding (MoU)

- Signatories: **India, European Union (EU), USA, Saudi Arabia, UAE, France, Germany, Italy**

Structure of IMEC

- **Eastern Corridor**: Connects India to the Arabian Gulf

- **Northern Corridor**: Links the Arabian Gulf to Europe

Key Routes

- **Shipping Route**: Mumbai and Mundra (Gujarat, India) to UAE

- **Rail Network:** UAE → Saudi Arabia → Jordan → Haifa (Israel) → Mediterranean Sea

- **Sea Link**: Haifa (Israel) to Piraeus (Greece) [→] Europe

Additional Infrastructure: **Electricity grids, Optical Fibre for Digital connectivity, Pipelines for hydrogen transport Objectives**

- Enhance trade efficiency and reduce logistics costs

- Secure regional supply chains

- Increase trade accessibility and economic cooperation

- Generate employment opportunities

- Lower greenhouse gas emissions through sustainable infrastructure

Corridor trajectory

The map shows the multiple routes being considered for the India-Middle East-EU Corridor. Indian ports on the west coast of India could be connected to five shortlisted ports in West Asia
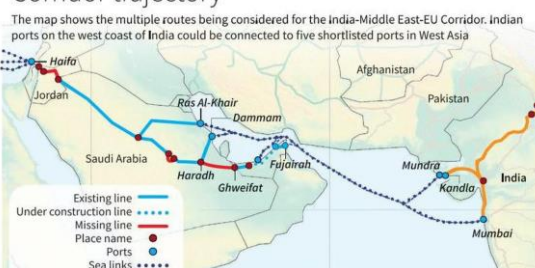
Aspects	Details
Transit Time Reduction	Expected to reduce transit time by 40% compared to Suez Canal
Cost Reduction	Expected to reduce costs by 30% compared to Suez Canal

Source: *https://www.thehindu.com/opinion/op-ed/a-mixed-report-card-for-the-india-middle-east-europe-corridor/article68859565.ece*

International Organization for Migration

What's the Buzz?

The UN International Organization for Migration said it was more than doubling an appeal launched last month for Syria, from $30 million to $73.2 million

Background

- Established in 1951, become an UN-related agency since 2016
- It promote humane, orderly migration for migrants and society
- It is headquatered in Geneva
- IOM have 175 members and 8 observers
- **Functions:**
  - Manage migration humanely
  - Foster international cooperation
  - Solve migration issues
  - Aid migrants (refugees, IDPs)
- **Key Roles:**
  - Leads UN efforts on labour mobility, migration
  - Coordinates UN Network on Migration
  - Supported Global Compact for Migration (2018)
- **Division**: Labour Mobility & Human Development – labour migration, diaspora, integration
- **Publications**: World Migration Report, Migration Health Annual Report

Source: *https://www.iom.int/*

United Nations Human Rights Council (UNHRC)

What's the Buzz?

India abstains at U.N. Human Rights Council on vote calling for Gaza ceasefire, arms embargo against Israel

Background

- **Establishment:** Created on March 15, 2006, by UN General Assembly Resolution; replaced the Commission on Human Rights
- **Nature:** Intergovernmental body within the UN system
- **Mission**: Promote and protect human rights worldwide
- **Headquarters**: Geneva, Switzerland

Membership

- Strength: 47 member states
- Election: Elected by the UN General Assembly via secret ballot; majority vote required
- Criteria: Based on candidates' human rights contributions, pledges, and commitments
- Tenure: 3-year terms (staggered); max two consecutive terms, no immediate re-election after
- Distribution: Equitable geographical representation (e.g., Africa, Asia-Pacific, Latin America, etc.).

Functions

- **International Forum for Dialogue** – Acts as a global platform for discussions on human rights, involving UN officials, experts, states, civil society, and other stakeholders.
- **Adoption of Resolutions/Decisions** – Passes resolutions or decisions during regular sessions to reflect the international community's stance on human rights issues, sending strong political signals to prompt government action.
- **Special Sessions** – Convenes crisis meetings (36 held to date) to address urgent human rights situations requiring immediate attention.
- **Universal Periodic Review (UPR)** – Periodically assesses the human rights records of all UN Member States to ensure accountability and improvement.
- **Special Procedures** – Appoints independent experts (e.g., Special Rapporteurs) to monitor specific countries or thematic issues (e.g., freedom of speech), serving as the Council's "eyes and ears."
- **Commissions of Inquiry & Fact-Finding Missions** – Establishes investigations to gather evidence on war crimes and crimes against humanity, producing impactful reports to address violations.

India has been elected multiple times (e.g., 2019-2021 term); reflects its commitment to human rights and global role

Source: *https://www.ohchr.org/en/hr-bodies/hrc/about-council*

International North South Transport Corridor

What's the Buzz?

For the first time, Russia has sent two trains laden with coal to India via the International North-South Transport Corridor (INSTC), marking the inaugural use of this route

Background

- INSTC is a 7,200-km **multi-modal transit route** linking the **Indian Ocean and Persian Gulf to the Caspian Sea via Iran, and to north- ern Europe via Russia**

- **Modes**: Combines shipping, rail, and road networks

- **Connectivity**: Links India, Iran, Azerbaijan, Russia, Central Asia, and Europe

Origin:

- **Launched in September 12, 2000, in St. Petersburg at the Euro-Asian Conference on Transport**

- **Founders**: Trilateral agreement by India, Iran, and Russia

- Now includes 13 members—Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Ukraine, Syria, Belarus, Oman

Routes:

- **Central Corridor** Starts at Jawaharlal Nehru Port (Mumbai, India) → Bandar Abbas (Iran) → Iranian ports (Nowshahr, Amirabad, Bandar-e-Anzali) → Caspian Sea → Olya & Astrakhan (Russia)

- **Western Corridor**: Mumbai → Sea route to Iran → Astara (Iran-Azerbaijan border) → Azerbaijan railways → Russia

- **Eastern Corridor**: Russia → Central Asia (Kazakhstan, Uzbekistan, Turkmenistan) → India

Efficiency:

- Cuts transit time by 20 days and freight costs by 30% compared to Suez Canal route

- Access to Russia and Central Asia's energy resources (e.g., coal, oil). Russia's export to India tripled since Ukraine war, reduces reliance on Middle East and Australia.

Source: *https://economictimes.indiatimes.com/ news/economy/foreign-trade/the-train-from- russia-how-a-new-route-can-change-things-for- india/articleshow/111290149.cms?from=mdr*

INDUS-X Mutual Promotion Advanced Collaboration Techs (Joint IMPACT)

What's the Buzz?

INDUS-X defence initiative between the U.S. and India marks its first anniversary

Background

- **India-U.S. Defence Acceleration Ecosystem (INDUS-X)**

- It is launched in June 21, 2023, during PM Narendra Modi's state visit to the U.S.

- **Objective**: Strengthen strategic technology partnerships and defence industrial cooperation between India and the U.S. governments, businesses, and

academic institutions.

Key Features

- **Defence Innovation Bridge**: Links India-U.S. defence ecosystems under the Initiative on Critical and Emerging Technology (iCET).

  Components:

  - Joint Challenges.
  - Joint Innovation Fund.
  - Academia engagement.
  - Industry-startup connect.
  - Private investment in defence projects.
  - Mentoring by experts.
  - Niche technology projects.

  Institutions Involved:

  - **India**: Innovations for Defence Excellence (iDEX), under the Ministry of Defence (MoD).
  - **U.S.**: Defence Innovation Unit (DIU), under the Department of Defense (DoD).

Significance for India

- Enhances defence tech collaboration with the U.S.
- Supports co-production of advanced military systems.
- Boosts India's defence innovation ecosystem and self-reliance (**Atmanirbhar Bharat**).
- Strengthens strategic ties amid regional security challenges (e.g., China).

Source: *https://www.thehindu.com/news/international/indus-x-defence-initiative-between-us-india-marks-first-anniversary/article68319618.ece*

WHO Pandemic Treaty

What's the Buzz?

After over two years of negotiations, 194 WHO member states failed to finalize the Pandemic Agreement at the 77th WHA 2024, Geneva).

Background

- **Purpose**: A historic treaty to enhance global pandemic preparedness, prevention, and equity post-COVID-19.
- **Outcome**: Mandate of the Intergovernmental Negotiating Body (INB) extended to complete the treaty by the 78th WHA (May 2025) or earlier (Special Session, 2024).

Objectives

- Strengthen preparedness/response to **Public Health Emergencies of International Concern (PHEIC)**.
- Introduce **"Pandemic Emergency" (PE)** category for urgent global response.
- Ensure equitable access to health products and mobilize funds for developing countries.

Source: *https://www.thehindu.com/sci-tech/health/the-global-struggle-for-a-pandemic-treaty/article68469433.ece*

International Court of Justice (ICJ)

What's the Buzz?

The International Court of Justice recently ruled that it will not throw away the genocide case against Israel.

Background

- It is established in June 1945, under the UN Charter; operational since April 1946.
- ICJ holds the status of **Principal judicial organ of the United Nations**
- It is located at **Peace Palace, The Hague, Netherlands** (only UN princi-

pal organ not in New York).

- The official languages of ICJ are **English and French**

- The hearings are always public, ensuring transparency.

Powers and Functions

- Settles disputes between UN member states.

- **Judgments are final, binding, and non-appealable**

- Complements global peace and security efforts under the UN framework.

Structure and Composition

Aspect	Details
Number of Judges	15 judges, each from a different country.
Election Process	Elected by majority votes in the UN General Assembly (UNGA) and Security Council (UNSC).
Tenure	9-year terms; one-third (5 judges) elected every 3 years; eligible for re-election.
Independence	Judges act independently, not as delegates of their own or any other state.
Ad Hoc Judges	A state party to a case without a judge of its nationality can appoint an ad hoc judge for that case.
Administrative Support	Assisted by a Registry, a permanent secretariat independent of the UN Secretariat.

Source: *https://www.icj-cij.org/home*

Asian Development Bank (ADB)

What's the Buzz?

ADB retains India's growth forecast at 7%.

Background

- Asian Development Bank was December 19, 1966.

- It is **Multilateral development bank for the Asia-Pacific region**

- It works for a prosperous, inclusive, resilient, and sustainable Asia-Pacific; aims to eradicate extreme poverty.

- It is headquatered at **Manila, Philippines.**

Functions and Structure

- **Assistance**: Provides grants, loans, technical aid, and equity investments to:
  - Developing Member Countries (DMCs).
  - Private sector.
  - Public-private partnerships (PPPs).

- **Development Impact**:
  - Facilitates policy dialogues and advisory services.
  - Mobilizes funds through co-financing from official, commercial, and export credit sources.

- **Goal**: Promotes social and economic development in the Asia-Pacific region.

- **Eligibility**: Members/associate members of the UN Economic Commission for Asia and the Far East (UNECAFE).

- **Board of Governors**: Represents all member countries.

- **Voting System**: Weighted, based on capital subscriptions (similar to World Bank).

Funding Sources

- International bond markets.

- Member contributions.

- Retained earnings from lending.

- Loan repayments.

Source: *https://www.adb.org/who-we-are*

International Criminal Court (ICC)

What's the Buzz?

The international tribunal is in the spot- light after U.S. President Donald Trump imposed sanctions for investigations that threaten the 'national security' of Washing- ton and its allies, which include Israel.

Background

- The ICC was created by the Rome Statute on **July 17, 1998** and became operational on **July 1, 2002.**

- It is the **only permanent international criminal tribunal**.

- **Purpose**: Holds individuals account- able for the world's gravest crimes.

- **Location**: The Hague, Netherlands.

Mandate

- **Crimes**: Investigates and tries individ- uals for:

  - Genocide.
  - War crimes.
  - Crimes against humanity.
  - Crime of aggression.

- **Role**: Court of last resort; com- plements, does not replace, national courts (principle of complementarity).

Membership

- **Members**: 125 countries (States Par- ties to the Rome Statute).

- **Non-Members**: Includes major powers like China, India, Israel, Russia, and the USA.

Funding Sources

- Contributions from States Parties.

- Voluntary donations from govern- ments, international organizations, in- dividuals, and corporations.

Composition

- **Judges**: 18, each from a differ- ent member country; elected for non-renewable 9-year terms.

- **Presidency**: 3 judges (President + 2 Vice-Presidents); elected by peers; manages external representation and judicial organization.

Jurisdiction

- Covers crimes post-July 1, 2002 (Statute's entry into force).

- **UNSC Referral**: UN Security Council can grant jurisdiction for non-member states.

Relation with the UN

- **Status**: Not a UN organ but has a co- operation agreement (Article 2, Rome Statute).

- **UNSC Role**: Can refer cases to ICC, ex- panding its reach (e.g., Darfur, 2005).

Source: *https://www.icc-cpi.int/*

Ezulwini Consensus

What's the Buzz?

The Group of Four (G4) countries have in- tensified their calls for comprehensive re- form of the United Nations Security Coun- cil (UNSC) as the UN approaches its 80th anniversary in 2025.

Background

- **L69 (Like-Minded Group of 69)**
  - **Membership:** Developing countries from Africa, Asia, Latin America, Caribbean, Pacific (includes India).
  - **Objective:** Reform UNSC to be more representative, accountable, and effective.

- **C10 (Committee of 10 / Coffee 10)**
  - **Membership:** 10 African nations: Algeria, Congo, Equatorial Guinea, Kenya, Libya, Namibia, Sierra Leone, Senegal, Uganda, Zambia.
  - **Objective:** Push for better African representation in UNSC per **Ezulwini Consensus** and **Sirte Declaration**.

- **G4 (Group of Four)**
  - **Membership:** Brazil, Germany, India, Japan.
  - **Objective:** Support each other's bids for permanent UNSC seats.

Ezulwini Consensus

- **Adoption:** March 2005, in Addis Ababa, Ethiopia.
- **Context:** Formulated by the **African Union (AU)** during a summit.
- **Objective:** Demand **equitable representation** for Africa in the **United Nations Security Council (UNSC)**.

Key Demand:

- At least **2 permanent seats with veto power** for African states.
- **5 non-permanent seats** to enhance Africa's voice.

Sirte Declaration

- **Adoption:** July 2005, in Sirte, Libya.
- **Context:** Reaffirmed at an **AU summit.**
- **Objective:** Reinforce the **Ezulwini Consensus** demands for **UNSC re- form**.

UPSC Relevance

Add relevance here

Source:

Global Plastic Treaty

What's the Buzz?

The 5th Intergovernmental Negotiating Committee (INC-5) meeting in Busan, South Korea.

Background

- It aimed to finalize a landmark, **legally binding international treaty** to combat plastic pollution by the end of 2024, as mandated by the 2022 UN Environment Assembly resolution (Nairobi).
- The talks deferred to resolve differences and finalize the treaty, with no agreement reached in Busan.
- Around 460 million tons of plastic produced annually, much of it discarded rapidly.
- The discussions saw a sharp divide between two camps – a large coalition of about 100 countries that wanted caps on plastic production, and a smaller set of oil-producing nations that wanted to focus only on plastic waste management.
- With the two camps unable to reach a compromise, the conference concluded with an agreement to meet again at a later date.

Source:

BIMSTEC

What's the Buzz?

BIMSTEC acquires 'legal personality' after charter comes into force.

BIMSTEC

Background

- **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)**.

- **Members:** 7 countries – Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, Thailand.

- **Population Covered** About 1.5 billion people

- **Economy:** Combined GDP of around USD 3.8 trillion.

- **Objective:** Promote technical and economic cooperation in the Bay of Bengal region.

- **Formation:** 1997, via Bangkok Declaration (initially BIST-EC: Bangladesh, India, Sri Lanka, Thailand).

- **Expansion:**
  - 1997: Myanmar joined (renamed BIMST-EC).
  - 2004: Nepal and Bhutan joined (renamed BIMSTEC).

- **Charter Adoption:**
  - Adopted at 5th Summit (virtual, March 30, 2022; chaired by Sri Lanka).
  - Entered into force: May 20, 2024, after Nepal's parliamentary ratification.
  - **Legal Personality:** Gains offi- cial status that enables structured dialogue with other countries/-groupings.

Key Features of BIMSTEC Charter

- To Build trust, enhance economic growth, and social progress.

- **Structure:** Regular summits, ministerial, and senior officials' meetings.

Member states and their sector of cooperation:

Member State	Sector of Cooperation
Bangladesh	Trade, investment, development
Bhutan	Environment, climate change
India	Security (including energy)
Myanmar	Agriculture, food security
Nepal	People-to-people contacts
Sri Lanka	Science, technology, innovation
Thailand	Connectivity

Source: *https://bimstec.org/#*

UN Membership

What's the Buzz?

India, along with 142 other nations, voted in favor of a draft U.N. General Assembly resolution outlining the qualifications for full United Nations membership for the State of Palestine.

Background

How a Country Becomes a Member of the United Nations (UN)

- **Who can join?** Any peace-loving country that agrees to follow the UN Charter and can fulfill its duties.

- **Process:**
  - The country sends an application to the UN Secretary-General with a letter promising to follow the Charter.
  - The Security Council reviews the application:
    * Needs 9 out of 15 members to say yes.
    * None of the 5 permanent members (China, France, Russia, UK, USA) can say no (veto).

- If the Security Council agrees, it goes to the General Assembly.
- The General Assembly votes—needs 2/3 (two-thirds) members to approve.

How a New State or Government Gets Recognition by the UN

- **Recognition:** The UN itself doesn't recognize new states or governments—only other countries do that. Recognition means willingness to start diplomatic relations.

- The UN is not a country or government, so it has no power to recognize anyone.

- It can only:
    - Admit a new state as a member (see process above).
    - Accept the representatives of a new government.

Source: *https://www.un.org/en/about-us/about-un-membership*

Places in News

Madeira

What's the Buzz?

Wildfires in Madeira threaten world-heritage forests, leaving tourists stranded

Background

- Forest fires in southern Madeira, **Portugal**, have destroyed over 5,000 hectares of wilderness

- Madeira is located in the **North Atlantic Ocean**, part of the Macaronesia region

- The wildfires threaten the **world's largest surviving laurel (Laurus nobilis) forests, a UNESCO World Heritage Site**

- Madeira is a popular tourist destination in the **Iberian Peninsula (Spain and Portugal)**

Kursk Region

What's the Buzz?

Recently, Ukraine launched a counterattack in Russia's Kursk.

Background

- Kursk is one of the oldest cities in **Russia**, located in the western part of the country.

- It borders **Ukraine** to the southwest and lies along the upper **Seym River**, about 450 km (280 miles) south of **Moscow**.

- Kursk is part of the **Black Earth region**, known for its fertile soil.

- The **Battle of Kursk** in 1943, the largest tank battle of **World War II**, re- sulted in a German defeat.

Nacala Port - Mozambique

What's the Buzz?

After months of delay, the import of tur dal from Mozambique resumed following intervention by the MEA.

Background

- **Mozambique** is a country in **Southern Africa**, with a coastline along the **Indian Ocean** to the east.

- The **Mozambique Channel** separates it from the island nations of **Madagas- car, Comoros, and Mayotte**.

- It shares borders with **Zimbabwe, Eswatini, South Africa, Zambia, Malawi, and Tanzania**.

- Major rivers include the **Zambezi, Limpopo, Licungo, Lurio, and Rovuma**.

- **Lake Malawi (Nyasa)** is the country's largest lake.

- **Mount Binga** is the highest peak in Mozambique.

- Mozambique is a key source of **Tur (Pigeon pea)** imports.

- The **port of Nacala**, located in **Nampula province**, is the deepest port in Southern Africa.

Indian Ocean Underwater Structures

What's the Buzz?

Recently, three underwater structures in the Indian Ocean were named as Ashoka, Chandragupt, and Kalpataru.
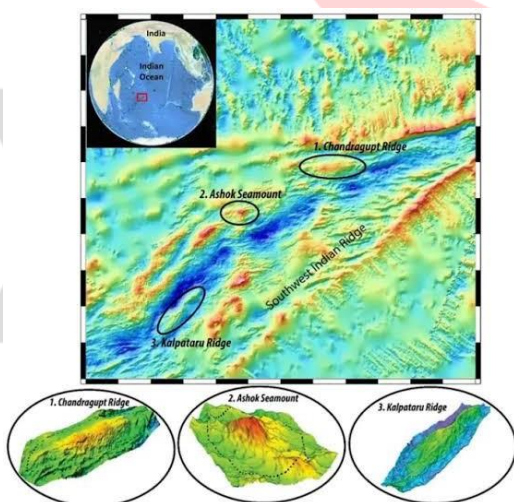
Background

- **Ashoka Seamount** is named after the Mauryan emperor Ashoka.

- **Chandragupt Ridge** is named after the Mauryan ruler Chandragupt.

- **Kalpataru Ridge** has also been recently named.

- These names were proposed by **In- dia** and approved by the **Interna- tional Hydrographic Organization (IHO)** and **UNESCO's Intergovern- mental Oceanographic Commission (IOC)**.

- Previous structures named after physicist **CV Raman** (Raman Ridge), oceanographer **NK Panikkar** (Panikkar Seamount), and geologist **DN Wadia** (DN Wadia Guyot).

Transnistria Separatist

What's the Buzz?

As the Russia-Ukraine War completes over two months, Transnistria, the tiny breakaway region of Moldova, risks being dragged into the conflict.

Background

- Transnistria is a small breakaway region between **Moldova** to the west and **Ukraine** to the east.

- It declared independence from

Moldova in 1990, though its statehood is not recognized internationally.

- Often referred to as a "remnant of the **Soviet Union**," it proclaimed independence after the USSR's collapse, simi- lar to Moldova.

- The region is a narrow strip of land between the **Dniester River** and the **Ukrainian border**.

Darfur Region

What's the Buzz?

A drone attack on one of the last operational hospitals in El-Fasher, Sudan's Darfur region, coupled with reports of people resorting to eating grass and peanut shells, highlights the severe hunger and starvation crisis in the area.

Background

- **Darfur** is a region in **western Sudan**, bordered by **Libya, Chad, and the Central African Republic.**

- The latest violence surge involves the **Rapid Support Forces (RSF)** encircling North Darfur's capital, **El Fasher.**

- It has halted aid convoys coming from Chad's **Tine border crossing** – a humanitarian corridor that passes through El Fasher.

- The **Janjaweed** are an Arab nomad militia group operating in the **Sahel region** that operates in Sudan, particularly in Darfur and eastern Chad.

- There has been an ongoing **civil war** between the Arab and African communities in Sudan.

- **Sudan** is located in **Northeast Africa**, bordered by the **Central African Republic, Chad, Egypt, Eritrea,** **Ethiopia, Libya, South Sudan, and the Red Sea.**

Blue Line and Shebaa Farms

What's the Buzz?

Recently, Hezbollah has intensified at- tacks along the borders between Israel and Lebanon.

Background

- The **Blue Line** is a 120 km long demarcation between **Israel and Lebanon** in the **Golan Heights**.

- It was set by the **United Nations** in 2000 after Israel withdrew from south- ern Lebanon.

- Known as the **'Line of Withdrawal,'** it is not an official international border but a boundary marker.

- **Shebaa Farms** is a disputed area of about **22 square kilometers** located at the intersection of **Lebanon, Syria, and Israel**.

- **Hezbollah**, an armed group backed by **Iran**, is involved in the dispute over this land.

St Martin's Island

What's the Buzz?

Bangladesh's St Martin's Island, under spotlight after Sheikh Hasina's resignation.

Background

- **St Martin's Island** is located in the **northeastern Bay of Bengal**, near the **Bangladesh-Myanmar** border.

- It is **9 kilometers** from the south- ern tip of Bangladesh's **Cox's Bazar- Teknaf** peninsula.

- The island is Bangladesh's only **coral island**, with reefs located **10-15 km** to the west-northwest.

- It is a **breeding ground for sea tur- tles**.

Uhuru Summit

What's the Buzz?

The Ministry of Defence's Divyangjan Expe- dition Team unfurled the largest national flag at Uhuru Summit on Mt. Kilimanjaro, Africa's highest peak.
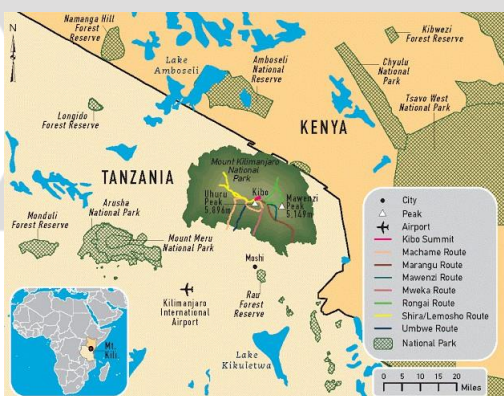
Background

- **Mount Kilimanjaro** is **Africa's tallest mountain** and the **world's largest free- standing mountain**.

- It is located in **northeastern Tanza- nia**, near the **Kenya border**.

- Kilimanjaro is a **stratovolcano** made up of three cones: **Kibo, Mawenzi, and Shira**.

- **Uhuru Peak**, the highest point in Africa, is located on the **Kibo cone**.

- The mountain is famous for its **snow- capped peak**.

- **Kilimanjaro National Park** was desig- nated a **UNESCO World Heritage Site** in 1987.

Darien Gap

What's the Buzz?

The Darien Gap is in the news as more mi- grants risk its dangerous terrain and crim- inal gangs to reach the US.

Background

- The **Darien Gap** is a geographic region in the **Isthmus of Darién**, connecting the **American continents** in **Central America**.

- It lies on the border between **Panama and Colombia**.

- The Darien Gap is a **60-mile (97 km) stretch** of dense, unstable jungle be- tween **northern Colombia and south- ern Panama**.

- The **"donkey route"** to the United States involves migrants traveling through **Latin American countries** to reach the **US border**.

- Despite the **lack of paved roads**, it has

become a major route for **global human migration.**

- The region is home to the **Embera-Wounaan and Guna indigenous peoples** and was once inhabited by the extinct **Cueva people**.

Nankai Trough

What's the Buzz?

Japan has issued its first-ever advisory on the heightened risk of a "megaquake" following a 7.1 magnitude earthquake along the Nankai Trough.

Background

- The **Nankai Trough** is an **underwater subduction zone** in the **Pacific Ocean**, about **900 km long**, where the **Eurasian Plate collides with the Philippine Sea Plate**.

- It stretches from **west of Tokyo** to the **southern tip of Kyushu Island**.

- The zone is known for **"megathrust quakes"**, often occurring in pairs, which can trigger **tsunamis** along **Japan's southern coast**.

- The trough has produced **large earthquakes roughly every 100 to 150 years**.

- A **megaquake** is an earthquake with a magnitude **larger than 8.**

Angkor Wat

What's the Buzz?

Angkor Wat Named Most Photogenic UNESCO Site in Asia

Background

- **Angkor Wat** is the **world's largest religious monument**.

- It is located in **Siem Reap, Cambodia**, in the **northwestern region**.

- The temple covers **200 acres**.

- Built by **King Suryavarman II**, it is nearly **900 years old.**

- It was initially dedicated to the **Hindu god Vishnu** but became a **Buddhist temple** by the late 12th century.

- **King Jayavarman VII** later dedicated it to **Buddhism** and built the nearby **Angkor Thom.**

- In **1992**, Angkor Wat was declared a **UNESCO World Heritage Site**.

- The temple is a masterpiece of **Khmer architecture**, made from **sandstone blocks**.

Coral Triangle

What's the Buzz?

A report released on October 26 at COP16 warned that fossil fuel expansion threatens the Coral Triangle, one of the most biodiverse marine areas in the world.

Background

- The **Coral Triangle** is a large, roughly **triangular-shaped marine region** known for its **immense biodiversity**.

- Often called the **'Amazon of the seas'**, it spans over **10 million square kilometers**.

- It includes **six countries** in **South- east Asia and the Pacific**: Indone- sia, **Malaysia, the Philippines, Papua New Guinea, Solomon Islands, and Timor-Leste**.

- The region is home to **76% of the world's coral species** and over **2,000 species of reef fish**.

Philadelphi Corridor

What's the Buzz?

Israel has faced growing pressure to relinquish control of the Philadelphi corridor.

Background

- The **Philadelphi Corridor** is a **14 km long, 100-meter-wide** strip of land along Gaza's border with Egypt.

- It was designated as a **demilitarized border zone** after Israel withdrew its settlements and troops from Gaza in 2005.

- The corridor stretches from the **Mediterranean Sea** to the **Kerem Shalom crossing** with Israel.

- Originally established under the **1979 Israel-Egypt peace treaty** as a buffer zone.

- It includes the **Rafah crossing** and was Gaza's only link to the outside world not controlled by Israel.

Rapa Nui

What's the Buzz?

Rapa Nui genomes restore the real history of an old, troubled people.

Background

- **Rapa Nui**, also known as **Easter Island**, is located at the **southernmost point of the South Pacific's Polynesian Triangle**.

- It is part of **Chile** and is one of the world's most **isolated inhabited islands**, with a population of about **7,000**.

- The island is of **volcanic origin** and has a **triangular shape**.

- **Easter Island** was designated a **UNESCO World Heritage Site** in **1996**.

- **Rapa Nui** is famous for its large stone statues called **moai**, which are shaped like large human heads and placed on stone pedestals.

- Some **moai** are up to **40 feet tall** and weigh **75 tonnes**.

- The **moai** feature carved heads and a **Pukao**, a hat-like covering made from soft red stone.

- The statues were carved from **volcanic stone** at quarries and then moved to different locations across the island.

Barakah Nuclear Energy Plant

What's the Buzz?

The United Arab Emirates has successfully completed the Barakah Nuclear Energy Plant, the first nuclear power plant in the Arab world.

Background

- The **Barakah Nuclear Energy Plant** is located in **Al Dhafra, Abu Dhabi, UAE**, on the **Arabian Gulf**.

- It is the **first nuclear power plant** in the **Arab world**.

- Barakah will have **four reactors** with a total capacity of **5,600 megawatts**.

- The plant is situated on a **sparsely populated desert strip** along the **Persian Gulf coast**.

- The **UAE** is a federation of **seven states**: Abu Dhabi, Dubai, Sharjah, Umm al-Qaiwain, Fujairah, Ajman, and Ra's al-Khaimah.

- **Four-fifths** of the UAE is covered by **desert**.

NEOM Project

What's the Buzz?

Saudi Arabia has advanced its ambitious NEOM project by launching Sindalah, its first luxury tourism destination in the Red Sea.

Background

- The name **NEOM** comes from "**neo**" meaning 'new' and "**M**" for 'Mustaqbal,' the Arabic word for 'future.'

- NEOM is planned as a **mega-city** with futuristic features, including a **ski resort** and twin skyscrapers stretching **170 kilometers**, known as **The Line**.

Mount Erebus

What's the Buzz?

Mount Erebus, a volcano in Antarctica, is spewing gold dust valued at $6,000 per

day.

Ross Island, Antarctica
World's southernmost active volcano!

- Discovered: 1841
- Latitude: 77°32'0"S
- Longitude: 167°10'0"E

http://eye-maps.com/wp-content/uploads/2011/11/erebus-map.gif
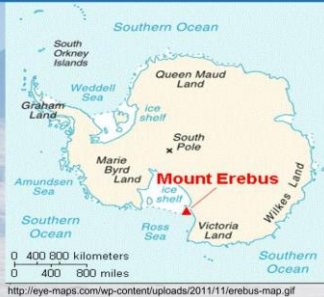
Background

- **Mount Erebus**, the world's **southernmost active volcano**, is on **Ross Island** in the **Ross Sea, Antarctica.**

- This phenomenon makes Erebus the only known volcano to **re- lease metallic gold in solid form**

- Mount Erebus is part of the **Ring of Fire** that encircles the **Pacific Ocean basin**.

- It is also one of only a few volcanoes in the world that contain an **active lava lake**.

- Mount Erebus displays **Strombolian eruptions**, marked by **moderate intensity** with bursts of gas and ash shooting into the sky.

- **Mount Erebus** and **Deception Island** are the only two **active volcanoes** in Antarctica.

Eastern Maritime Corridor

What's the Buzz?

The recent launch of the Chennai-Vladivostok Eastern Maritime route has reduced shipping time and costs, enhancing trade between India and Russia in oil, food, and machinery.

EASTERN MARITIME CORRIDOR

TIME SAVING: UP TO 16 DAYS

DISTANCE SAVING: 3028 NAUTICAL MILES

EXISTING
Port of Mumbai, India to Port of St. Petersburg, Russia
8675 NAUTICAL MILES

PROPOSED
Port of Chennai, India to Port of Vladivostok, Russia
5647 NAUTICAL MILES

Background

- The **Chennai-Vladivostok Sea Route**, or **EMC**, links **South India (Chen- nai Port)** to **Russia's Far East region (Vladivostok Port)**.

- The **Eastern Maritime Corridor** is a proposed sea route connecting **Chennai, India**, to **Vladivostok, Russia**, passing through the **Sea of Japan, South China Sea, and Malacca Strait**.

- It **reduces transportation time** by up to **16 days**, significantly improving efficiency.

Mount Ibu

What's the Buzz?

Mount Ibu in eastern Indonesia has erupted at least a thousand times this month.

Background

- It's an **active stratovolcano** located along the **northwest coast of Halmahera Island, Indonesia**.

- Found in **Indonesia's North Maluku**

province.

- Part of the **Pacific Ring of Fire.**

- **Stratovolcanoes** are **tall, steep, and cone-shaped**.

- They have **higher peaks** compared to flatter **shield volcanoes**.

- Stratovolcanoes make up about **60% of the Earth's individual volcanoes**.

Funan- Techo Canal

What's the Buzz?

Cambodia has initiated the $1.7 billion Funan Techo Canal mega connectivity project.

Background

- Cambodia has started building the **Techo Funan Canal.**

- The project is **backed and funded by China**.

- It aims to link the **Mekong River basin with the Cambodian coast**.

- The Canal project is part of the broader **Belt and Road Project of China**.

Z-Morh Tunnel

What's the Buzz?

The 6.5 km-long Z-Morh tunnel at Sonamarg was inaugurated recently.

PM TO OPEN KEY Z-MORH TUNNEL TODAY

LENGTH	ALTITUDE	CAPACITY	COST
6.4 km	8,500 ft	1K vehicles/hr	₹2,700 cr

The Z-Morh Tunnel site.
X/@OmarAbdullah

- The Z-Morh Tunnel will ensure an all-weather link to tourist destination Sonamarg from central Kashmir. The overground road stretch is prone to avalanches and snow-ins.
- The tunnel, whose name comes from the Z-shaped road stretch that was previously at the place where the tunnel is being constructed, is part of the 12,000-foot Zojila project that will connect Srinagar to Ladakh.
- Expected to be completed by December 2026, the Zojila Tunnel will help military personnel and supplies reach border areas throughout the year by road.
- This all-weather link will also reduce the dependence and expenditure on operating and maintaining transport aircraft.

Background

- The Z-Morh tunnel, now renamed the **Sonamarg tunnel**, was built under the Thajiwas glacier.

- The project was developed by the **National Highways and Infrastructure Development Corporation Limited (NHIDCL)**.

- It is part of the **Zojila tunnel project**, which aims to provide year-round connectivity from Srinagar to Ladakh.

- The **Zoji La tunnel (14.15 km)** will be Asia's longest bi-directional tunnel, ensuring all-weather connectivity between Srinagar, Kargil, and Leh.

Democratic Republic of Congo (DRC)

What's the Buzz?

The M23 rebels in the Democratic Repub- lic of Congo (DRC) have taken control of Goma, a key city in North Kivu Province of the DRC and are moving south toward Bukavu

Background

- It is located in **Central Africa, DRC is the 2nd largest country in Africa**

- It has a small coastline with the **Atlantic Ocean**

- It shares borders with nine coun-tries: **Republic of the Congo, Central African Republic, South Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia, and Angola**

- **Kinshasa**, the capital of the DRC, is located on the **Congo River, the only river to cross the equator twice in Africa**

- It includes **Lake Kivu, Lake Tanganyika, and Lake Edward**

- **Katanga Plateau** is considered to be a rich mining region, which supplies **cobalt, copper, tin, radium, ura- nium, and diamonds**

M23 Rebel Group

- March 23 Movement (M23), formed in 2012, is mainly composed of ethnic Tutsis

- It is mainly active in the eastern DRC, particularly in North Kivu province

Scarborough Shoal

What's the Buzz?

China has recently released geographic co-ordinates to mark baselines around the disputed Scarborough Shoal in the South China Sea

Background

- The Scarborough Shoal is an **oceanic coral atoll** that developed on top of a seamount into a triangle shape in the eastern part of the **South China Sea**

- It is situated 200 km off the coast of the **Philippines**

- **It is the largest atoll in the South China Sea**

- It is a disputed area between China & Philippines

Species in News

Orangutan

What's the Buzz?

Why has Malaysia tweaked its 'Orangutan diplomacy'?

Background

- **Orangutans**, the **largest tree-climbing mammals**, share **96.4% of human genes**, making them highly intelligent.

- Known as **gardeners of the forest**, they aid in **seed dispersal** and maintaining the ecosystem.

- They live **solitary lives**, building **tree nests** for sleeping at night and resting during the day.

- **Flanged males** have **cheek pads (flanges)** and a **throat sac** for loud calls, while **unflanged males** resemble adult females.

- Recognizable by their **red fur**, **opposable thumbs**, and **strong hands**.

- The word **Orangutan** means *"man of the forest"*, as they spend most of their time in trees.

- There are **three species**: **Bornean, Sumatran, and Tapanuli**.

- **Lifespan**: Up to **50 years**.

- **IUCN Status**: All three species are **Critically Endangered.**

Source: *https://www.worldwildlife.org/species/orangutan*

Paraparatrechina neela

What's the Buzz?

Indian researchers recently discovered a new ant species named Parapara-trechina neela from Arunachal Pradesh's remote Siang Valley.

Background

- This newly identified species belongs to the rare genus **Paraparatrechina**.

- It has been named **Paraparatrechina neela**.

- The term **"neela"** signifies their dis- tinct **metallic blue** color in the head and body.

Source: *https://zookeys.pensoft.net/article/114168/*

Indian Wild Ass

What's the Buzz?

The Gujarat Government stated that the population of Indian Wild Ass has been rising since 1976.

Background

- The **Indian wild ass** is primarily found in the **Rann of Kutch** region in Gu- jarat.

- It is categorized as a **Nearly Threat- ened** species in the **IUCN Red List**.

- Locally, it is called **Khur** in the Gujarat region.

- **Wild Ass Population Estimation (WAPE)**: A survey conducted by the Gujarat state government every four years.

Source: *https://cza.nic.in/uploads/documents/ studbooks/english/Indian%20Wild%20Ass.pdf*

Greater Adjutant Stork

What's the Buzz?

India's Purnima Devi Barman Wins 2024 Whitley Gold Award for Plans to Scale Up "Hargila" stork comeback through women-led advocacy.

Background

- The **Greater Adjutant Stork**, locally known as **"Hargila"**, is found in **As- sam and Bihar.**

- Key features include a **long neck**, **large bill**, and a prominent **gular pouch**.

- **IUCN Status**: **Near Threatened.**

Reference: *https://www.google.com/amp/s/ news.mongabay.com/2016/12/from-loathed-to- loved-villagers-rally-to-save-greater-adjutant- stork/amp/*

Indian Flapshell Turtle

What's the Buzz?

Two people were arrested for smuggling 405 rare Indian flapshell turtles, an en- dangered species.

Background

- The **Indian flapshell turtle** is a **freshwater species** found in **South Asia**, especially in **Pakistan, India, Sri Lanka, Nepal, Bangladesh, and Myanmar**.

- Morphologically, it is an **evolutionary link** between **softshell** and **hardshell** aquatic turtles.

- The species is **protected under the Wildlife Protection Act, 1972**, and its smuggling is a **non-bailable offence**

- **IUCN Status**: **Vulnerable.**

Source:
https://www.inaturalist.org/taxa/39579- Lissemys-punctata

Nilgai

What's the Buzz?

The Haryana government has recently implemented new Wildlife (Protection) Rules permitting the culling of male Nil- gais, commonly known as blue bulls.

Background

- **Nilgai antelopes** are among the **largest Asian antelopes**, found in **In- dia, Nepal, and Pakistan**.

- They have been considered **sacred in Hinduism** since the **Vedic period (1500–500 BC)**.

- The rising population of Nilgai poses a **significant threat to agricultural fields**, making them a concern for farmers.

- **IUCN Status**: **Least Concern.**

Source: *https://animaldiversity.org/accounts/ Boselaphus tragocamelus/*

Neptis philyra

What's the Buzz?

Rare butterfly species discovered in Arunachal's Tale sanctuary.

Background

- A **rare butterfly species**, commonly known as **Long-streak Sailor**, was discovered for the first time in In- dia at **Tale Valley Wildlife Sanctuary, Arunachal Pradesh**.

- Previously, it was known to be found in **East Asia**, including **eastern Siberia, Korea, Japan, and China**.

- It has **serrated wings**, a **brownish-black upper side**, a **yellow-brown underside**, and a **forewing white cell streak** forming a **"hockey stick" marking** with spots.

Reference: *https://www.google.com/amp/s/ timesofindia.indiatimes.com/city/guwahati/rare-butterfly-species-discovered-in-arunachals-tale-sanctuary/amp articleshow/109146879.cms*

Asiatic Golden Cat

What's the Buzz?

The Asiatic Golden Cat has been redis-covered in Manas National Park, Assam.

Background

- The **Asiatic Golden Cat** is a **nocturnal forest dweller**, preferring **sub-tropical and tropical evergreen forests**.

- They are found from **Nepal and northeast India through Southeast Asia, China, Thailand, Malaysia, and Sumatra**, but not on the island of **Bor-neo**.

- The most common **coat color** is **golden or red-brown**, but it may also be **dark brown or even grey**.

- The Asiatic Golden Cat is listed in **Ap-pendix I of CITES** and is categorized

as a **Scheduled I species** under the **Indian Wildlife (Protection) Act, 1972.**

Source: *https://wildcatconservation.org/wildcats/asia/asiatic-golden-cat/*

Northern Bald Ibis

What's the Buzz?

Northern bald ibis has returned to Europe after vanishing for over three centuries.

Background

- **Northern bald ibises** are found in **semi-arid desert, steppe regions** in the **European Alps, Northern Africa, and the Middle East**.

- They are **Old World migratory birds** that migrate eastward from **Morocco and Turkey** through countries such as **Jordan and Saudi Arabia**.

- The northern bald ibis has a **black feathered body** and a **face without any feathers**. The **face and the beak** of the ibis are **dull red** in color.

Source: *https://animaldiversity.org/accounts/Geronticus_eremita/*

Red Panda

What's the Buzz?

West Bengal welcomed two red pandas from the Netherlands, the first such acquisition from a foreign country in a decade.

Background

- The **Red Pandas** are native to the **eastern Himalayas and southwestern China**.

- They are **very skillful and acrobatic** animals that predominantly stay in **trees**.

- The Red Pandas are primarily **herbivores**, eating **bamboo and plants**.

- Red Pandas are often killed when they get caught in **traps meant for other animals** such as **wild pigs and deer**.

Source: *https://www.worldwildlife.org/species/red-panda*

Striped Caecilian

What's the Buzz?

A limbless amphibian known as the Striped Caecilian has been discovered for the first time in Kaziranga National Park and Tiger Reserve.

Background

- They are **limbless amphibians** that belong to the same group of animals that includes **frogs and salamanders**.

- They generally inhabit **moist tropics and subtropics** of **South and Central America, Southeast Asia, and Sub-Saharan Africa**.

- Most Caecilians are **terrestrial**, and they spend most of their time **under-ground.**

Source:
https://www.thehindu.com/sci-tech/energy-and-environment/limbless-amphibian-added-to-kazirangas-fauna/article68311421.ece

Feral Horses

What's the Buzz?

> **The National Green Tribunal (NGT) has taken suo motu cognizance of the alarming decline in the population of feral horses in Dibru-Saikhowa.**

Background

- **Feral horses** are **free-roaming horses** that descended from a **domesticated horse stock**.
- The **Dibru Saikhowa National Park** in Assam is the only place in India to find **feral horses**.
- They have lived in the wild of Dibru Saikhowa for almost **80 years**.

Source:
https://india.mongabay.com/2024/11/the-last-feral-horses-of-india/

Golden Trevally

What's the Buzz?

> **CMFRI scientists breed golden trevally in captivity.**

Golden Trevally

Background

- **Golden trevally** or **golden king fish** is a **high-value marine fish**.
- Found in **reef areas** of **Kerala, Tamil Nadu, Karnataka, Gujarat, and Puducherry.**
- Ideal for **mariculture** due to its **fast growth rates** and **good quality meat.**
- It is a **silver-grey fish** with a **yellowish belly**, scattered **black patches**, **yellow fins**, a **black tail**, and **fleshy, rubbery lips.**
- **IUCN Status**: **Least Concern.**

Source: *https: //www.cmfri.org.in/news/breakthrough-in-mariculture-icar-cmfri-achieves-captive-breeding-of-high-value-marine-fish-golden-trevally*

Syntrichia Caninervis

What's the Buzz?

> **Scientists have identified a super re-silient desert moss species in China's western region of Xinjiang that could help sustain possible colonies on Mars.**

Background

- It inhabits **extreme desert environments** such as **Tibet, Antarctica, and circumpolar regions**.

- It is a **non-vascular plant** found in **moist and shady environments**, which lacks **true roots** and possesses **simple leaves and stems**.

- It has **superior environmental resilience** and has **potential use in establishing sustainable habitats on Mars**.

Source: *https://astrobiology.com/2024/07/the-extremotolerant-desert-moss-syntrichia-caninervis-is-a-promising-pioneer-plant-for-colonizing-extraterrestrial-environments.html*

The New Caledonian Fern

What's the Buzz?

New studies show that The New Caledonian fern has the world's largest genome.

Background

- It is a **rare fern species** that primarily grows on the **forest floor** in the island nation of **New Caledonia**, near Vanuatu.

- This fern's **genome is 7% larger** than that of the previous record-holder, the Japanese flowering plant **Paris japonica**, and over **50 times the size of the human genome**.

Source: *https://www.thehindu.com/sci-tech/science/humble-fern-from-new-caledonia-boasts-worlds-largest-genome/article68238860.ece*

Bumblebees

What's the Buzz?

Bumblebees' resilience to common pesticides.

Background

- **Bumblebees** are **social insects** and act as **pollinators**.

- They have **four wings** that flap **200 times per second** and help **cool their nests**.

- Unlike honeybees with **perennial colonies**, **bumblebee colonies** last only a **year**, with a single queen starting a new nest annually.

- They are primarily found in **temperate climates**.

Source:
https://phys.org/news/2024-04-bumblebees-dont-pesticide-cocktails-highlights.html

Bugun Liocichla

What's the Buzz?

Arunachal tribe donates land for critically endangered songbird Bugun Liocichla.

Background

- The **Bugun tribe** of **Eaglenest Wildlife Sanctuary**, Arunachal Pradesh, donated **1,470 hectares** of forest land to protect the **critically endangered Bugun Liocichla** songbird.

- **Bugun Liocichla**, a small **babbler** (only **20 cm**) with **olive-grey plumage** and **black cap**.

- It is only found in the **Eaglenest Wildlife Sanctuary** landscape and **nowhere else in the world**.

- **IUCN Status**: **Critically Endangered**.

Source: *https://ebird.org/species/buglio1*

Red-Headed Vulture

What's the Buzz?

The Red-Headed Vulture has been sighted in Kasaragod, marking a signifi- cant addition to the region's avian bio- diversity.

Background

- The **Red-Headed Vulture**, also known as the **"Asian King Vulture"**, is typically found in regions of **Central In- dia, Nepal, Myanmar, and South In- dia, including Wayanad in Kerala**.

- It is a **dark, medium-sized vulture** with a **bare reddish head** and **loose flaps on the side of the neck**.

- The population of **Red-Headed Vultures** has drastically declined due to **diclofenac poisoning**.

- **IUCN Status**: **Critically Endangered**.

Source: *https://ebird.org/species/rehvul1*

Okapi (*Okapia johnstoni*)

What's the Buzz?

PM Modi inaugurates the Vantara animal rescue facility and pats an okapi.

Background

- **Okapi** is **endemic to the Democratic Republic of the Congo (DRC)**.

- It resembles a mix of a **giraffe and a zebra**, known as the **"forest giraffe"**.

- It has **zebra-like striped legs**, a **giraffe-like body**, a **long neck**, and a **dark brown to reddish coat with white markings**, which help with camouflage in dense forests.

- It has a **long, flexible tongue** (up to **18 inches**), used for **feeding and grooming**.

- It is **herbivorous** and can consume **toxic plants** that other herbivores avoid.

- It is **diurnal**, meaning it is **active during the day**.

Source:
https://www.britannica.com/animal/okapi

Hoolock Gibbon

What's the Buzz?

Oil and gas exploration likely to threaten Hoolock Gibbon habitat in Assam.

Background

- **Hoolock gibbon** is **India's only ape species**.

- Gibbons are the **smallest and fastest apes.**

- They inhabit **tropical and subtropical forests** of **Southeast Asia**.

- They are **highly intelligent**, have **distinct personalities**, and form **strong family bonds.**

- There are **20 species of gibbons** worldwide.

- India's northeastern region is home to two distinct **hoolock gibbon species**:

  - **Eastern hoolock gibbon**: **Vulnerable**.

  - **Western hoolock gibbon**: **Endangered**.

- Both species are listed under **Sched- ule I** of the **Indian Wildlife (Protec- tion) Act, 1972.**

Source: *https://animaldiversity.org/accounts/ Bunopithecus.hoolock/*

Bharal (Blue Sheep)

What's the Buzz?

Census exercise begins in Himachal's cold desert Lahaul & Spiti district to es- timate blue sheep population

Background

- The **Blue Sheep**, or **Bharal**, is a species of **goat-antelope** native to the **high Himalayas.**

- They are **solitary** or found in **small groups** (usually less than 20), consisting mostly of one sex.

- The name **"blue"** comes from the **bluish sheen on their coat**, visible under certain lighting.

- They remain **motionless when approached**, relying on **camouflage** due to the lack of cover in their habitat.

- **Distribution**: Found in **India, Bhutan, China, Myanmar, Nepal, and Pakistan.**

- They are abundant in the **Tibetan Plateau and the Himalayas.**

- **IUCN Status**: Listed as **"Least Concern".**

Source:
https://www.inaturalist.org/taxa/42313- Pseudois-nayaur

Himalayan Ibex

What's the Buzz?

Census exercise begins in Himachal's cold desert Lahaul & Spiti district to es- timate blue sheep, Himalayan ibex.

Background

- A **subspecies of the Siberian ibex**, native to the **Himalayan region of India, Pakistan, Tibet, and Nepal**.

- Inhabits **high-altitude areas of the Himalayas**, including the **Trans-Himalayan region**.

- Known for its **impressive curved horns** and **agility on steep terrains**.

- **Social animals**, living in **small herds**.

- Males are **larger than females**, with **long, curved horns reaching up to 130 cm (51 inches)**.

- **Thick, coarse coat** provides **insulation against the cold**.

- **Seasonal coloration**: **Brown in summer**, darker and more insulated in winter.

- **Herbivorous diet**.

- Primarily found in **Jammu & Kash- mir, Himachal Pradesh, and Uttarak- hand**.

- **IUCN Status**: "Near Threatened".

Source: *https://www.thehindu.com/sci-tech/energy-and-environment/himalayan-ibex-a-distinct-species/article31201581.ece*

Subabul Tree

What's the Buzz?

Researchers have identified the seed pods of Subabul as a potential remedy for managing insulin resistance in type II diabetes.

Background

- A **fast-growing leguminous tree** found in **tropical and subtropical regions**.

- **Native to Mexico**, it is a **small to**

medium-sized perennial tree with a **short, clear bole and a highly branched structure**.

- Introduced as a **cover crop** in plantations and used for **fodder and fuel**.

- **Leaves and immature seeds** are consumed **raw or cooked** in **soups and salads**, providing a **rich source of protein and fiber** for both humans and animals.

- Valued for its **wood**, used in **charcoal production, small furniture, and paper pulp**.

- Listed among the **100 worst invasive species** by the **IUCN Invasive Species Specialist Group**.

Source: *https://dst.gov.in/tropical-plant-subabul-shows-potential-managing-insulin-resistance-related-type-ii-diabetes*

Pangolins

What's the Buzz?

Recently, the Pangolin Conservation Project has achieved success in protecting pangolins at Pench Tiger Reserve and Satpura Tiger Reserve.

Background

- **Pangolins**, or **scaly anteaters**, are the only mammals with **large keratin scales** covering their skin.

- **Nocturnal mammals** that **dig burrows** and feed on **ants and termites**, help- ing **aerate and add moisture to the soil**.

- **Defense mechanism**: They **roll into a ball** to protect themselves.

- **Eight species worldwide** (**four in Asia, four in Africa**); two species found in India:

- **Indian pangolin** (*thick-tailed pangolin*), native to the **Indian subcontinent**.

- **Chinese pangolin**, listed as "Critically Endangered".

- In India, both species are protected under **Schedule I** of the **Wildlife (Protection) Act, 1972**.

Source:
https://www.worldwildlife.org/species/pangolin

Utricularia

What's the Buzz?

A rare and unique carnivorous plant, Utricularia, has been discovered in Keoladeo National Park, Rajasthan.

Background

- **Utricularia** (**bladderwort**) is a genus of **carnivorous plants**.

- They have **small hollow sacs** that **capture and digest tiny animals** like **insect larvae, aquatic worms, and water fleas**.

- Found in **lakes, streams, and waterlogged soils** worldwide, with some species being **invasive**.

- **Rootless plants** with a **horizontal floating stem**.

- **Flowers** are **bisexual and bilaterally symmetrical**.

Source: *https://botany.org/home/resources/carnivorous-plants-insectivorous-plants/utricularia-the-bladderwort.html*

Greater One-Horned Rhino

What's the Buzz?

Poaching of the one-horned rhinoceros in Kaziranga and other protected habi- tats in Assam has dropped by 86%.

Background

- The **Greater One-Horned Rhino** (**Indian rhinoceros**) is the **largest of the three Asian rhinos** and among the **largest rhino species**, alongside African white rhinos.

- **India is home** to the **greater one-horned rhino**.

- **Kaziranga National Park** (**Assam**) has the **largest population**, with **2600+ rhinos**

- **Herbivorous** and native to the **Indian subcontinent**.

- They are **excellent swimmers**.

Source:
https://www.worldwildlife.org/species/greater-one-horned-rhino

Schemes

PM JANMAN

What's the Buzz?

The 'Housing scheme' within PM-JANMAN aims to provide secure housing for 4.90 lakh PVTG households by 2026

Background

- **Launched:** 15th November 2023 on Janjatiya Gaurav Diwas

- **Tenure:** 2023-24 to 2025-26

- Central sector and centrally sponsored schemes

- **Aim:** Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) aims to cover **75 PVTG** communities residing in 18 States and 1 UT

- Launched to provide PVTG households and habitations with basic facilities such as **safe housing, clean drink- ing water and improved access to ed- ucation, health and nutrition, road and telecom connectivity, electrifi- cation of unelectrified households and sustainable livelihood opportu- nities in 3 years**

- PM JANMAN focuses on 11 critical in- terventions being implemented by 9 Ministries

PVTG (Particularly Vulnerable Tribal Groups)

- **Dhebar Commission(1960)** recom- mended creating a sub-category of "Primitive Tribal Groups" (PTGs) within the Scheduled Tribe category

- 75 communities from 18 states and UT of Andaman and Nicobar Islands cate- gorized as PVTGs

- Tribal groups with

  - Pre-Agricultural lifestyle
  - Low literacy rates
  - Stagnant or small populations
  - Subsistence economies

- Odisha – Highest (15)

- **No PVTG in Punjab & Haryana**

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2036830*

Agnipath

What's the Buzz?

The Agnipath scheme is a transformational reform for the Army and the Nation and aims to bring paradigm changes in the Hu- man Resource Management of the Indian Army

Background

- The term "Agniveer" translates to "Fire- Warriors" and is a **new military rank**

- They are recruited for a period of **4 years**, after which, **up to 25%** of these recruits (called Agniveers), can join the services on a **permanent commission** (another 15 years), subject to merit and organisational requirements

- **Aim:** Envisages promotion of national- ism in the youth offering skilled man- power to the society and ensuring a more youthful profile of the Army

- On completion of the engagement pe- riod of four years, Agniveers will be paid one time 'Seva Nidhi' package

- **Girls under the given age limit are open for the agnipath entry**, while there is no such reservation for women

Why was it introduced ?

- **Younger, Fitter Force**: To reduce av- erage age in Armed Forces to 26 years from 32 years

- To reduce the burden of growing de- fence pension bill with its shorter ser- vice

AGNIPATH SCHEME
An Opportunity For Youth To Join Armed Forces & Serve Nation

Eligibility: Age limit for applicants from 17 and a half to 21 years.

Recruitment:
- Candidates will be enrolled under the respective service act for a service duration of 4 years.
- No change in recruitment process.
- Centralised transparent screening assessment based on merit and demonstrated performance during service.
- 100% candidates can apply on volunteer basis to enrol in regular cadre.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=1834269*

PM Janjatiya Unnat Gram Abhiyan Scheme

What's the Buzz?

The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved Pradhan Mantri Janjatiya Unnat Gram Abhiyan

Pradhan Mantri Janjatiya Unnat Gram Abhiyan will be launched for improving the socio-economic condition of tribal communities. The scheme will adopt saturation coverage for tribal families in tribal-majority villages and aspirational districts. This will cover 63,000 villages benefitting 5 crore tribal people.

- **Aim:** Improving the socio-economic condition of tribal communities, by adopting saturation coverage for tribal families in tribal-majority villages and aspirational districts

- **Centrally Sponsored scheme**

- They will cover around 63,000 villages benefitting more than 5 crores tribal

- Envisions saturation of critical gaps in social infrastructure, health, education, livelihood

- The Mission comprises of 25 interventions which will be implemented by 17-line ministries through funds allocated under Development Action Plan for Scheduled Tribes in next 5 years to achieve following goals under several individual schemes
  - Goal 1 - Developing Enabling Infrastructure
    * Pucca house for eligible Households with other entitlements
    * Improving Village infrastructure
  - Goal 2 - Promotion of Economic Empowerment
    * Skill Development Entrepreneurship promotion and enhanced livelihood(self-employment)
  - Goal 3 - Universalization of Access to Good Education
  - Goal 4 - Healthy lives and Digni- fied Ageing

- **Tribal Home Stay:** To tap the tourist potential of tribal areas,1000 Home stays will be promoted under Swadesh Darshan through Ministry of Tourism

- **Sustainable Livelihood Forest Right Holders (FRA):** The Mission has special focus on 22 lakh FRA patta hold- ers residing in forest areas

- Improving infrastructure of Govt residential Schools and Hostels

- Tribal Multipurpose Marketing Centre: 100 TMMC will be setup for effective marketing of tribal products

Aspirational Districts:

- Aspirational Districts are the ones that have low socio-economic indicators

- **Aspirational District Programme:** flagship scheme initiated by **NITI Aayog** in June 2018 as a goal to trans- form 112 districts

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2055996*

Vatsalya

What's the Buzz?

Union Minister for Finance and Corporate Affairs, Smt. Nirmala Sitharaman, has launched the National Pension System Vatsalya (NPS Vatsalya) scheme

Background

- Announced in the Union Budget 2024-25 on July 23, 2024

- **Aim:** Designed exclusively for minors, marking a significant advancement in financial planning and setting a new standard for prudent financial management from a young age

- **Administered by**: Pension Fund Regulatory Authority of India **(PFRDA)**

MINISTRY OF FINANCE / nps Vatsalya

— ELIGIBILITY FOR —

NPS VATSALYA SCHEME

All minor citizens
(age below 18 years).

Account can be opened in the name of minor and operated by parent or guardian. Minor will be the beneficiary.

Scheme can be opened through various Points of presence regulated by PFRDA such as major banks, India Post, Pension Funds and Online platform (e-NPS).

Subscriber to make a minimum contribution of Rs 1000/- per annum. There is no limit on the maximum contribution.

PFRDA will provide multiple investment choices to subscribers. Subscribers can take exposure in government securities, corporate debt, and equity in different proportions based on risk appetite and desired returns.

On attaining the age of majority, the plan can be converted seamlessly into a normal NPS account.

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2056331*

PM SAUBHAGYA - Pradhan Mantri Sahaj Bijli Har Ghar Yojana

What's the Buzz?

While inching towards achieving 100% village electrification, Govt. of India also focused in achieving electrification of all un-electrified households in the country

Background

- **Aim:** Achieving universal household electrification, by providing electricity connections to all un-electrified households in rural areas and all poor households in urban areas in the country

- **Nodal Agency:** Rural Electrification Corporation (REC) (under control of Min. of Power)

- **Central sector scheme**

- Government of India launched Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) in October, 2017

- Beneficiaries will be identified using SECC 2011 data

- Under the Saubhagaya scheme, LED bulbs, wire, holders, switches, etc are to be provided to BPL families free of cost

- A total of 2.86 Crore households of the country were provided electricity connection

- In the rural areas, families other than BPL families' electricity connection has to be provided for Rs. 500. The consumer has to pay the amount in 10 equal instalments of Rs. 50 in each bill, in the urban areas, the BPL families will be provided free power connection

Significance:

- Last mile connectivity and electricity connection to all un-electrified households in rural areas and to all remaining economically poor un electrified households in urban area

- Solar Photovoltaic (SPV) based standalone system for un-electrified households located in remote and inaccessible villages/habitations, where grid extension is not feasible or cost effective

Source: *https://powermin.gov.in/en/content/saubhagya*

PM Ayushman Bharat Health-care Infrastructure

What's the Buzz?

PM to launch expansion of health coverage to all senior citizens aged 70 years and above under Ayushman Bharat PM-JAY

Background

- **Launched:** 2021
- **Nodal Ministry:** Ministry of Health and Family Welfare
- **Aim:** To strengthen the critical healthcare network from village to block to the district to the regional and national level in the next 4-5 years
- Centrally Sponsored scheme with central sector components
- Earlier known as Prime Minister Atmanirbhar Swasth Bharat Yojana (PMASBY) Scheme

Significance:

- Setting up comprehensive surveillance of infectious diseases
- Creation of comprehensive diagnostics and treatment facilities
- Comprehensive pandemic research

Components of Ayushman Bharat

Centre Sponsored Components	Centre Sector Components
Ayushman Bharat – Health and Wellness Centres (AB-HWCs) in Rural areas	12 Central Institutions as training and mentoring sites with Critical Care Hospital Blocks
Ayushman Bharat – Health and Wellness Centres (AB-HWCs) in Urban areas	Setting up of a National institution for One Health, 4 New National Institutes for Virology, a Regional Research Platform for WHO South East Asia Region and 9 Bio-Safety Level III laboratories
Integrated Public Health Labs	
Critical Care Hospital Blocks	

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2037420*

PM KUSUM

What's the Buzz?

The Union Minister for New & Renewable Energy and Power has informed that the main objectives of the PM-KUSUM include de-dieselisation of the farm sector, providing water and energy security to farmers, increasing the income of farmers, and curbing environmental pollution

Background

- **Aim:** To achieve solar power capacity addition of 34.8GW by March 2026
- **Centrally sponsored scheme**
- **Nodal Ministry:** Ministry of New and Renewable Energy

Significance

- Central Government subsidy up to **30% or 50%** (of total) for installation of standalone solar pumps and for solarization of existing grid connected agriculture pumps
- Further, farmers can also install grid-connected solar power plants up to 2MW, under the scheme on their barren/fallow land

Scheme Consists of 3 components

- ◊ Component A
  - – Setting up of **10,000 MW** of Decentralized Ground/Stilt Mounted Solar Power Plants on barren/fallow/pasture/marshy/ cultivable land of farmers

- **Procurement Based Incentive** to the DISCOMs for 5 years @ 40 paise/kWh or Rs.6.60 lakhs/MW/year, whichever lower

◊ Component B

- Installation of **14 Lakh** Stand-alone Solar Pumps in off-grid areas

- Individual farmers will be supported to install standalone solar Agriculture pumps of capacity up to **7.5 HP**

◊ Component C

- Solarisation of 35 Lakh Grid Connected Agriculture Pumps through **Individual Pump Solarisation** and **Feeder Level Solarisation**

Eligible categories for PM KUSUM

◊ An individual farmer

◊ A group of farmers

◊ FPO or Farmer producer organization

☐ Panchayat.

◊ Water User Associations

◊ Co-operatives

Agriculture Infrastructure Fund

What's the Buzz?

Marking a crucial milestone in India's mission to transform its agricultural sector, the Union Cabinet, chaired by Prime Minister Narendra Modi on August 28, 2024, approved a significant expansion of the Agricultural Infrastructure Fund (AIF) scheme

Background

- **Launched:** 2020

- **Nodal Ministry:** Ministry of Agriculture and Farmers Welfare

- Central Sector Scheme

- **Tenure:** till 2032-33 (13 years)

- **Financial outlay:** Rs.1 lakh crore (to be disbursed by 2025-26)

- **Aim:** To provide medium-long term debt-financing facility for investment in viable projects, for post-harvest management Infrastructure and community farming asset

Agriculture Infrastructure Fund (AIF)

As of August 28, 2024, **Rs. 47,575 Crore** has been sanctioned for **74,508 projects** under AIF scheme

The Fund of **Rs. 1 lakh Crore** under the scheme will be disbursed till **FY2025-26**

Generated over **8.19 Lakh** rural employment opportunities in the agriculture sector

Significance

- **Interest Subvention on Loans**

  ◊ 3% per annum up to a limit of Rs.2 crore (Loan beyond Rs.2 crores - Interest subvention limited up to Rs.2 crores)

  ◊ Moratorium Period – minimum 6 months, maximum 2 years

  ◊ Need-based refinance support by NABARD to all eligible lending entities (if required)

- Repayment period will be for a maximum period of 7 years

- Financial Institutions can disburse loan only after signing an MoU with NABARD/Ministry of Agriculture & Farmers' Welfare (DA&FW)

- Beneficiaries

  ◊ Farmers, Agri-entrepreneurs, Start-ups

  ◊ Central/State agency or Local Body sponsored PPP Projects

  ◊ State agencies and Agricultural Produce Marketing Committees (APMCs)

  ◊ Marketing Cooperative Societies, Self Help Groups, Joint Liabil- ity Groups, Multipurpose Cooper- ative Societies

Digital Agriculture Mission

What's the Buzz?

> Union Cabinet Committee, chaired by Prime Minister Narendra Modi approved the 'Digital Agriculture Mission'

Background

- Digital Agriculture Mission is an **Umbrella scheme** including:
  - Digital Public Infrastructure (DPI)
  - Digital General Crop Estimation Survey (DGCES)
  - Other IT initiatives

- **Aim:** The Digital Agriculture Mission aims to transform farmers' lives through digital technology

- **Nodal Ministry:** Ministry of Agriculture and Farmers Welfare

Foundational Pillars

- **AgriStack:** Farmer centric DPI to streamline service and scheme delivery with creation of farmer's ID
  - Key components
    * Farmers' Registry
    * Geo- Conferenced village Maps
    * Crop Sown Registry

- **Krishi Decision Support System:** The Krishi Decision Support System (DSS) will integrate remote sensing data on crops, soil, weather, and water resources into a comprehensive geospatial system

- **Soil Profile Mapping:** Detailed soil profile maps for approximately 142 million hectares of agricultural land have been envisaged The mission is expected to create direct and indirect employment in agriculture, providing opportunities for around 2,50,000 trained local youth and Krishi Sakhis

National Action for Mechanised Sanitation Ecosystem (NAMASTE) Scheme

What's the Buzz?

> Over 57,000 sewer and septic tank workers identified under the NAMASTE scheme.

Background

- **National Action for Mechanized Sanitation Ecosystem (NAMASTE) Scheme**

- **Purpose:** The NAMASTE Scheme reflects the government's commitment to eliminating manual sewer and septic tank cleaning, ensuring safety and dignity for sanitation workers.

- **Launched By:** Jointly by the Ministry of Social Justice and Empowerment and Ministry of Housing and Urban Affairs.

- **Implementation:** Managed by the National Safai Karamcharis Finance and Development Corporation (NSKFDC).

- **Duration:** From FY 2023-24 to FY 2025-26 (3 years).

What are the Aims of NAMASTE Scheme?

- **Zero fatalities** in sanitation work in India.

- All sanitation work is performed by **skilled workers**.

- No sanitation workers come in **direct contact** with human faecal matter.

- Sanitation workers are collectivized into **SHGs** and are empowered to run sanitation enterprises.

Defence

Zorawar

What's the Buzz?

> DRDO unveils country's indigenous light tank Zarowar

Background

- The Zorawar Tank is an **indigenous light tank** designed to operate in extreme weather conditions at high altitude areas

- It was developed jointly by **DRDO and L&T**

- It was named after a military general of the **Dogra Rajput ruler, Gulab Singh of Jammu. Zorawar Singh Chandel**

- Other indigenous tanks in Indian Army: **Vijayanta and Arjun**

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2054675*

Gaurav: Long-Range Glide Bomb

What's the Buzz?

> DRDO carries out successful maiden flight test of Long Range Glide Bomb 'GAURAV'

Background

- GAURAV is an **air to surface** 1,000 kg class glide bomb capable of hitting targets at long distance

- It is integrated with highly accurate hybrid navigation scheme with a combination of INS and GPS data

- GUARAV is indigenously designed and developed by **Research Centre Imarat (RCI), Hyderabad**

UPSC Relevance

> Questions related to **Ballistic missiles, Agni missiles** have been asked in UPSC prelims previously.

Source: *https://pib.gov.in/PressReleasePage. aspx?PRID=2044995/*

TARANG SHAKTI – 2024

What's the Buzz?

> India hosted its first multinational air exercise called Tarang Shakti-2024 in August and September 2024

Background

- It is a major multinational air combat exercise organized by the **Indian Air Force (IAF)**, marking **India's largest international air combat event**

- The event saw participation from over 50 delegates, representing 27 nations involved in Exercise Tarang Shakti

- It aims to enhancing interoperability and operational coordination among **Friendly Foreign Countries (FFCs)**

- The objective is to improve air com- bat techniques and foster a collabora- tive defence environment among participating nations

- **Significance:**

  – Showcasing the booming indigenous defence ecosystem in India

  – Supporting the country's vision of Atmanirbhar Bharat (self-reliant India)

  – Defence industrial expo that will showcase top Indian defence companies and innovative startups

Source: *https://pib.gov.in/PressReleasePage.aspx?PRID=2053906*

Border Security Force (BSF)

What's the Buzz?

BSF to recalibrate deployment along the Pakistan border in Jammu in the wake of terror strikes

Background

- The **Border Security Force (BSF)** is India's primary border guarding force under the Ministry of Home Affairs (MHA).

- Established on **December 1, 1965**, following the Indo-Pak war of 1965.

- BSF was created as a paramilitary force under the **Ministry of Home Af- fairs** to safeguard India's borders with

Pakistan and later with Bangladesh, ensuring national security, prevent- ing illegal activities, and supporting counter-insurgency operations.

- **Key Operations:**

  – Operation Blue Star (1984)
  – Kargil War (1999)
  – Surgical Strikes (2016)

Source:
https://officerspulse.com/2024/12/02/border-security-force/

Gallantry Awards

What's the Buzz?

Recently, the President of India presented Gallantry Awards at the Defence Investiture Ceremony-2024 held at Rashtrapati Bhavan. The President awarded 10 Kirti Chakras (7 posthumously) and 26 Shaurya Chakras (7 awarded posthumously).

Background

- Gallantry Awards in India are presented to **defence personnel, paramilitary forces, and civilians** for bravery, valour, and sacrifice in the face of adversaries.

- They are announced **twice a year (Republic Day and Independence Day)**

- **Divisions:**

  – **Wartime Gallantry Awards:** Param Vir Chakra, Maha Vir Chakra, Vir Chakra.

  – **Peacetime Gallantry Awards:** Ashoka Chakra, Kirti Chakra, Shaurya Chakra.

- **Conditions for Eligibility:**

  – **Param Vir Chakra & Ashoka Chakra:** For most conspicuous

bravery or some daring or pre-eminent act of valour or self-sacrifice.

- **Maha Vir Chakra & Kirti Chakra:** For acts of conspicuous gallantry.
- **Vir Chakra & Shaurya Chakra:** Acts of gallantry.

- **The Param Vir Chakra (PVC), Ashoka Chakra, and the PM Rashtriya Bal Puraskar** are given on Republic Day, while other gallantry awards are presented at the Defence Investiture Ceremony.

Village Defence Committees & Village Defence Guards

What's the Buzz?

The new scheme to set up VDGs in vulnerable areas of J&K was approved by the Union Ministry of Home Affairs in March 2022.

Background

- The **Village Defence Committees (VDCs)** were first formed in the erstwhile Doda district in the mid-1990s as a force multiplier against militant attacks.
- The Union Ministry of Home Affairs renamed them as **Village Defence Guards (VDG)** in 2020.
- They are armed and trained by the Indian Government.
- The VDGs function under the supervision of the **district superintendent of police (SP)/Senior superintendent of police (SSP)**
- **Significance:**

- The VDGs play a crucial role in maintaining security in rural areas of Jammu and Kashmir.
- They provide intelligence to security forces and assist in counter-insurgency operations.

- **Aim:** To organize a small group of volunteer armed civilians in identified villages along the borders and in-depth areas of the Jammu division to ensure self-protection and village safety.

Project 17-A

What's the Buzz?

India's first P17A Nilgiri-class frigate started sea trials. The seven ship class, de- veloped under Project 17A

Background

- **Project 17A** is an initiative by the Indian Navy to construct a series of **advanced stealth guided-missile frigates**, known as the **Nilgiri-class** This project is an enhancement of the earlier **Project 17 (Shivalik-class)**

Recent Developments

- **INS Nilgiri:** Commissioned on January 15, 2025, INS Nilgiri is the lead ship of the Project 17A class.
- **INS Surat & INS Vaghsheer:** INS Surat is the fourth and final ship of the Project 15B class destroyers, while INS Vaghsheer is the sixth and final submarine of the Scorpene-class project.
- **INS Himagiri & INS Udaygiri:** These latest additions to the Project 17A fleet are set to enhance the Indian Navy's

warfare capabilities with cutting-edge stealth and combat systems.

- The induction of these warships comes after the Talwar-class frigate **INS Tushil** was commissioned into the In- dian Navy on December 9, 2024, at Yantar Shipyard in Russia.

Integrated Theatre Command

What's the Buzz?

India advances toward implementing Integrated Theatre Commands (ITCs), a major military reform aimed at enhancing joint operations among the Army, Navy, and Air Force.

Background

- **Integrated Theatre Command (ITC):** A military structure that integrates the capabilities of the three ser- vices— **Army, Navy, and Air Force**—to optimally utilize resources for wars and operations.

- **CDS Gen. Anil Chauhan** delivered a talk titled 'Jointmanship: The Way Ahead' at the 22nd Major General Samir Sinha Memorial Lecture.

Current Structure of Indian Armed Forces Commands

- India's armed forces currently operate with a total of 17 commands:
    - The Army and the Air Force each have 7 commands.
    - The Navy has 3 commands.

- Each command is led by a 4-star rank officer, reflecting their high-level authority.

- Additionally, there are two notable tri-service commands integrating the Army, Navy, and Air Force:
    - **Andaman and Nicobar Command (ANC):** Established in 2001, India's first joint theatre command located at Port Blair. It pro- tects India's strategic interests in

Southeast Asia and the Strait of Malacca, enabling swift deploy- ment of military resources.

- **Strategic Forces Command (SFC):** A tri-service unit that oversees the management and deployment of India's nuclear assets, ensuring operational con- trol over the country's nuclear capabilities.

UPSC Relevance

Questions related to **Ranks in different services in Military** have been asked in UPSC prelims previously.

Pinaka Rocket System

What's the Buzz?

DRDO has successfully completed the Flight Tests of Guided Pinaka Weapon Sys- tem as part of Provisional Staff Qualitative Requirements (PSQR) Validation Trials.

Background

- The Pinaka Multiple Launch Rocket System is a **fully indigenous weapon system**, designed and developed by the **Armament Research and Development Establishment** in collaboration with the Research Centre Imarat and the Defence Research and Development Laboratory

- It is a **All-weather, indirect area fire Artillery Weapon System** designed to deliver a large volume of fire within a very short time against critical and

- sensitive area targets

- The system demonstated a range of 75 km and can accurately strike within 10 meters of its target

Source: *https://www.tataadvancedsystems. com/pinaka-multi-barrel-rocket-launcher*

Antariksha Abhyas

What's the Buzz?

Defence Space Agency conducts maiden tabletop exercise to enhance India's space warfare readiness and capabilities

Background

- **Antariksha Abhyas – 2024** is first-of-its-kind three-day exercise designed to **simulate and strategize against the growing threats to and from space-based assets and services**

- It is conducted by the Defence Space Agency

- The exercise is designed to enhance the security of national strategic objectives in space and integrate India's space capabilities into military operations

- It seeks to deepen the understanding of space-based assets and services while fostering awareness of operational dependencies on space segments among stakeholders

Defence Space Agency:

- The Defence Space Agency (DSA), formed in 2018, is a **tri-services organization of the Indian Armed Forces**

- It is headquatered in Bengaluru

- DSA's objective is to manage India's spacewarfare and satellite intelligence assets

Source:
https://www.theweek.in/news/defence/2024/ 11/12/indias-first-war-game-for-space-defence-begins-antariksha-abhyas-seeks-to-protect-space-assets-amid-growing-threats.html
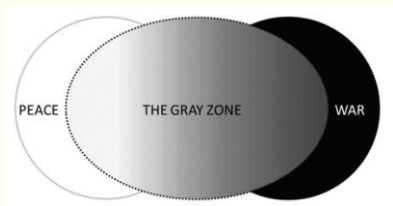
Terms in News

Fancy bear

Fancy Bear a.k.a APT28 or Sofacy is a **Russian cyber espionage group**

Grey Zone

Grey-zone describes the **space in between peace and war** in which state and non- state actors engage in competition

Kafala System

- The kafala (sponsorship) system establishes the **legal framework** governing the relationship between **foreign workers and their local sponsor, or kafeel**, who is typically their employer

- It has been used in **Gulf Cooperation Council (GCC)** countries as well as Jordan and Lebanon

Operation Nanhe Farishtey

The **Railway Protection Force (RPF)** spearheads 'Nanhe Farishtey,' a mission focused on **rescuing and safeguarding children** in need across different Indian Railway Zones

Restorative Justice

Restorative justice is a criminal justice approach that **prioritizes repairing the harm caused to the victim by the offender**

BSOD (Blue Screen of Death)
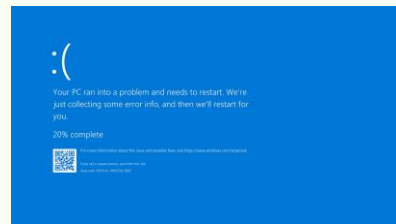
The blue screen of death (BSOD) also known as a **stop error screen, blue screen error, fatal error or bugcheck** is a critical error screen displayed by **Microsoft Win- dows operating systems**

Green Line/1949 Armistice border

- The Green Line is the **demarcation line** set out in the **1949 Armistice Agreements** between **Israel and its neighbours (Egypt, Jordan, Lebanon and Syria)** after the **1948 Arab-Israeli War**

- The Green Line was intended as a demarcation line rather than a permanent border

GALLANT IAS OPP ANADIYIL HOSPITAL,THEKKUMOODU JUNCTION,PATTOM POST ,TRIVANDRUM 695004 PH 9746035110

Blue Line

The Blue Line is a demarcation line divid- ing **Lebanon from Israel and the Golan Heights**

Axis of Resistance
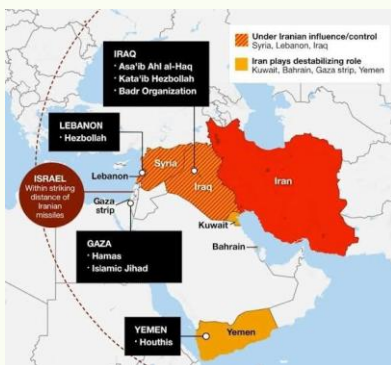
- It is a coalition of **Iranian-backed groups**

- The "axis of resistance" is an **in- formal, loose-knit alliance that in- cludes both Sunni and Shia Muslim groups and governments in Yemen, Syria, Lebanon, Gaza and Iraq**, with differences and varying levels of prox- imity to one another and to Tehran

Red Teaming

- Red teaming tests **cybersecurity by simulating real cyberattacks**

- Ethical hackers conduct controlled, non-destructive attacks

- Helps organizations find vulnerabilities and improve security

Zoopharmacognosy

- Zoopharmacognosy is the **study of how animals self-medicate using natural substances**

- This behavior has been observed in various species, including primates, lemurs, elephants, and dogs, who uti- lize plants, soil, and insects for infec- tion treatment, reproductive support, and overall health maintenance

- E.g: **Sumatran orangutan** was ob- served using the plant Fibraurea tinc- toria, known for its anti-inflammatory properties, to treat a facial wound

Storm-2035

OpenAI has identified Storm-2035, a **covert Iranian influence operation**, in which four websites masquerading as news organizations aimed to **influence U.S. vot- ers**

Jumping genes/ Transposons
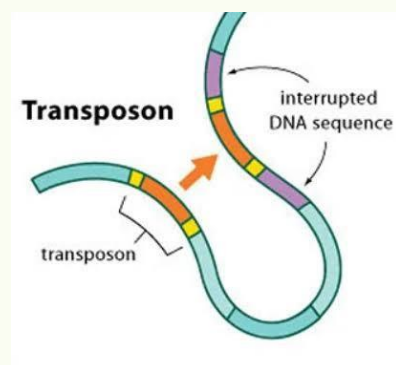
Transposons, often referred to as "jumping genes" are DNA sequences capable of **mov- ing from one location to another within the genome**

Parochialism

Parochialism is a narrow focus on local interests while ignoring broader perspectives

Chillai Kalan

Chillai Kalan is the 40-day period of the **harshest winter in Kashmir**

Algo-trading

- **Algorithmic Trading** (also called automated trading, black-box trading, or algo-trading) uses computers to buy and sell stocks

- It follows a predefined algorithm to execute trades automatically

- Helps in fast, efficient, and data-driven decision-making

Force Majeure

- A Force Majeure (FM) means extraordinary events or circumstances beyond human control such as an event described as an Act of God (like a natural calamity)

- Force majeure is a French term that literally means "greater force."

No- Cloning Theorem

The no-cloning theorem states that it is impossible to create an independent and identical copy of an **arbitrary unknown quantum state**

Bromalites

- Bromalites are fossil traces of organisms, consisting of material from their digestive system

- The most famous bromalites are fossilized feces, also known as coprolites

Greedflation

Greedflation is when **big companies raise prices a lot because of greed, which then pushes inflation higher**

Reverse Charge Mechanism (RCM)

A GST mechanism where the recipient of goods/services pays the tax instead of the supplier.

Friendshoring

Friendshoring (also called Allyshoring) means shifting supply chains to politically stable and friendly countries

Lavender Revolution or Aroma Mission

Aroma Mission is a program by the **Union Ministry of Science & Technology** to increase the cultivation of aromatic crops in India

Silver Tsunami

It is an economic term that metaphorized a **'demographic apocalypse'** might endure in the coming decades, when the number of 'old' (retired) people living in an economy outnumber the number of young (productive) people

Miscellaneous

Directorate General of Civil Aviation

What's the Buzz?

The Directorate General of Civil Aviation (DGCA) has recently served a show cause notice to Air India.

Background

- A statutory body regulating civil aviation, focusing on safety.
- It is under the Ministry of Civil Avia- tion.
- DGCA is headquatered inNew Delhi.
- The Objectives of DCGA include overseing air transport services, enforcing civil air regulations, ensuring air safety and airworthiness, and align with International Civil Aviation Organisation (ICAO) standards.

Functions and Responsibilities

- **Safety Oversight:**
  - Ensures passenger and crew safety on all flights in India.
  - Conducts regular safety audits of airlines and aircraft.
  - Investigates aviation incidents/accidents and implements preventive measures.
- **Industry Development:**
  - Promotes growth of the aviation sector in collaboration with airlines and airport operators.
  - Enhances passenger travel experience.
    - Supports development of new airports and modernization of existing ones to meet rising demand.
- **Air Traffic Regulation:**
  - Coordinates with Airports Authority of India (AAI) for safe and efficient air traffic management.
  - Drives adoption of advanced air traffic control systems and technologies.
- **Licensing:**
  - Issues licenses/certificates to pilots, aircraft maintenance engineers, and other aviation personnel.

Source:
https://www.dgca.gov.in/digigov-portal/

FIDE

What's the Buzz?

The era of India's GM Gukesh Dommaraju as chess world champion has begun, af- ter an incredibly hard-fought 2024 FIDE World Championship in Singapore.

Background

- **International Chess Federation (FIDE):** Known as the World Chess Federation (French acronym: FIDE), it's an international body linking na- tional chess federations and governing global chess competitions.
- **Founded:** July 20, 1924, in Paris, France.
- **Headquarters:** Lausanne, Switzerland.
- **Motto:** "Gens una sumus" (Latin: "We are one family").
- **Recognition:** Acknowledged by the International Olympic Committee (IOC)

in 1999 as a Global Sporting Organization.

- **Membership:** As of December 21, 2023, includes 201 national federa- tions.

FIDE World Cup

- **Establishment:** Initiated in 2000 by FIDE.

- **Format:** Since 2005, a 128-player single-elimination tournament; 7 rounds of mini-matches (2 games each), with rapid/blitz tiebreaks; final has 4 games before tiebreaks.

- **Significance:** Key qualification event for the World Chess Championship.

Candidates Tournament

- **Origin:** Organized by FIDE since 1950.

- **Purpose:** Identifies the challenger for the World Chess Championship title; second most crucial event in the championship cycle.

- **Cycle:** Triennial until 1992; biennial since 2013.

- **Outcome:** Winner challenges the reigning world champion.

World Chess Championship

- **Objective:** Crowns the World Chess Champion.

- **Recent Event:** In 2023, Ding Liren (China) won the title, defeating Ian Nepomniachtchi; Magnus Carlsen chose not to defend his title.

Source: *https://www.fide.com/*

Pancharatna Mission, Rajeevika

What's the Buzz?

Women's Self-Help Group (SHG) model from Dholpur, Rajasthan, aiding approx. 12,500 women in Mali and Senegal.

Background

- **Agency:** Rajasthan Grameen Ajeevika Vikas Parishad (Rajeevika).

- **Outcomes:** Livelihood generation, environmental conservation, and cooperative federations for farming, biogas, poultry, and goat rearing.

Training Exchange

- Dholpur SHG women trained Mali and Senegal in rural income activities.

- Leaders from 9 cooperatives in Mali and Senegal visited Rajasthan (Dholpur, Bharatpur, Ajmer, Jaipur, Udaipur) for skill enhancement.

subsectioncolor Rajeevika SHG Model

- **Five Principles:** Weekly meetings, savings, internal lending, loan repayment, record-keeping.

- **Pancharatna Mission:** Boosted market reach of SHG products.

- **Strength:** Rural women's expertise in agricultural technology.

Impact in Mali & Senegal

- **Financial Empowerment:** Annual savings of Rs.17 crore used for inter-loaning and emergency support.

- **Community Benefits:** Promotes economic growth and self-governance through collective action.

Lessons Adopted

- **Fatouma Diallo Sero (Mali):** Inspired by Rajasthan's federation election process; aims to replicate it and promote entrepreneurship.

- **Niama Ivonne Sacko (Mali):** Plans to apply Rajeevika's principles for institution-building and introduce water harvesting for farming.

Source: *https://www.thehindu.com/news/ national/rajasthan/rajasthans-shg-model-helps-african-women-to-farm-and-flourish/article68293170.ece*

Bhu-Aadhaar

What's the Buzz?

Bhu-Aadhaar and digitisation of land records.

Background

- **Full Form:** Unique Land Parcel Identification Number (ULPIN), also called Bhu-Aadhaar.

- **Launch:** Introduced in 2021 under the Digital India Land Records Modernisation Programme (DILRMP) by the Central Government.

- **Objective:** Standardize and simplify the assignment of unique IDs to land parcels across states.

Key Features

- **Basis:** Assigned using longitude and latitude coordinates, relying on detailed surveys and geo-referenced cadastral maps.

- **Structure:** 14-digit alpha-numeric ID comprising:
    - State code
    - District code
    - Sub-district code
    - Village code
    - Unique plot ID number

- **Permanence:** Once generated, ULPIN remains fixed to the land's geographic boundary, unaffected by ownership changes, subdivisions, or modifications.

- **Documentation:** Stamped on the physical land record held by the owner.

Significance

- **Uniformity:** Brings consistency to land identification processes across India.

- **Digital Integration:** Enhances land record modernization and accessibility.

- **Land Management:** Facilitates tracking, reduces disputes, and aids in planning.

Objective	Description
Unique ID Assignment	Provide a unique ID for easy tracking and retrieval
Accurate Digital Records	Record ownership, boundaries, area, and usage
Linkage with Registration	Integrate land records with property registration
Online Service Delivery	Facilitate digital access to land record services
Aid Government Planning	Support planning with current land data

Source: *https://dolr.gov.in/ulpin/*

Rashtriya Vigyan Puraskar

What's the Buzz?

Indian government announced the first- ever Rashtriya Vigyan Puraskar (RVP) awardees 2024.

Background

- **Launched by:** Government of India to honor excellence in Science, Technology, and Innovation.

- **Purpose:** Recognize outstanding contributions by researchers, technologists, and innovators.

Award Categories

- **Vigyan Ratna (VR):** Max: 3 awards. For lifetime achievements in Science &

Technology.

- **Vigyan Shri (VS):** Max: 25 awards. For distinguished contributions in a specific field.

- **Vigyan Yuva: Shanti Swarup Bhatnagar (VY-SSB):** Max: 25 awards. For young scientists with exceptional contributions.

- **Vigyan Team (VT):** Max: 3 awards. For teams (3+ members) with remarkable collective contributions.

Notable Awardees

- **Vigyan Ratna: G. Padmanabhan** - Biological Sciences; lifetime work on malaria parasites; ex-director IISc; Padma Shri & Bhushan recipient.

- **Vigyan Team: Chandrayaan-3 Team** - Space Science; successful lunar landing (2023), India's first spacecraft on the Moon.

- **Vigyan Shri:**

  – **Annapurni Subramaniam** - Astrophysics; formation and evolution of star clusters and galaxies.

  – **Jayant Bhalchandra Udgaonkar** - Biology; notable contributions.

  – **Naba Kumar Mondal** - Particle Physics; significant research.

- **Vigyan Yuva:**

  – **Vivek Polshettiwar** - Environmental Science; advancements in carbon capture technologies.

  – **Urbasi Sinha** - Quantum Research; exceptional work by a young scientist.

  – **Roxy Mathew Koll** - Climate Science; impactful contributions.

Administration

- **Coordinator:** Council of Scientific and Industrial Research (CSIR), under the Ministry of Science and Technology.

- **Announcement:** National Technology Day (11th May).

- **Ceremony:** National Space Day (23rd August).

Source: *https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/aug/doc2024823379801.pdf*

ANIIDCO

What's the Buzz?

The Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO) is the project proponent for the NITI Aayog-promoted Rs.72,000 crore mega infrastructure project in Great Nicobar.

Background

- **Established:** Under the Companies Act, 1988.

- **Role:** Project proponent for the Rs. 72,000 crore Great Nicobar infrastructure project, promoted by NITI Aayog.

- **Location:** Great Nicobar, the southernmost island of the Andaman and Nicobar archipelago (910 sq km), a biodiversity hotspot, home to indigenous tribes, and tectonically active.

The Great Nicobar Project

- **International Container Transshipment Terminal (ICTT):** At Galathea Bay to boost cargo transshipment and maritime economy.

- **International Airport:** To enhance connectivity.

- **Township Development:** A "greenfield city" for maritime and tourism growth.

- **Power Plant:** 450 MVA gas and solar-based facility.

Objective Position Great Nicobar as a regional/global hub for trade and tourism. **ANIIDCO's Qualifications**

- **Purpose:** Established to develop and exploit natural resources sustainably in the Andaman and Nicobar Islands.

- **Activities:** Manages petroleum trading, liquor, milk, tourism resorts, and infrastructure for tourism/fisheries.

BharatPol

What's the Buzz?

Launch of BHARATPOL portal in New Delhi on 07th January, 2025 in Bharat Manda- pam.

Background

- **Purpose:** Streamlines international assistance requests via INTERPOL, in- cluding Red Notices and other color-coded notices.

- **Impact:** Enhances efficiency of field-level police in tackling crime and secu- rity issues.

- **Benefit:** Strengthens India's fight against transnational crimes through quicker access to global support.

- **Feature:** Enables real-time info shar- ing for Indian Law Enforcement Agen- cies (LEAs).

- **Developer:** Central Bureau of Investi- gation (CBI).

MY Bharat Platform

What's the Buzz?

MY Bharat portal to conduct awareness drive in 5,000 colleges across India.

Background

- **Vision:** A technology-driven plat- form to foster youth development and youth-led progress for a "Viksit Bharat" (Developed India).

- **Goal:** Provide equitable opportunities to empower youth (aged 15-29) to re- alize aspirations and contribute to na- tional growth.

Key Features

- **Framework:** Connects youth with pro- grams, mentors, and communities to address local issues and devise solu- tions.

- **Platform:** 'Phygital' (Physical + Digital) – blends physical engagement with dig- ital connectivity.

- **Target Group:** Youth aged 15-29 (per National Youth Policy); also includes 10-19-year-olds as beneficiaries.

Objectives

- Enhance youth understanding of local challenges.

- Enable youth contributions to con- structive solutions across government initiatives.