

# SROTHAS

*A Monthly Magazine for UPSC Civil Service Examination*

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# POLITY & GOVERNANCE

## Sukanya Samridhi Yojana

- Sukanya Samridhi Yojana is a savings scheme launched in 2015 under the Government of India's Beti Bachao Beti Padhao campaign, which aimed to promote the education of girl children.
- SSY is a small-deposit scheme tailored specifically for the girl child.
- This scheme enables guardians to open a savings account for their girl child with an authorized commercial bank or India Post branch.
- Eligibility:
  - The girl must be an Indian resident.
  - The account can be initiated by the parent or legal guardian of the girl child.
  - The girl child must be below the age of 10 at the time of opening the account.
  - Only one SSY account is allowed per girl child.
  - A family is limited to opening a maximum of two SSY scheme accounts.
  - NRIs are not eligible to open these accounts.
- The girl must operate the account once she attains the age of 18 years.
- The minimum and maximum deposits that can be made in an account in a financial year are 250 and Rs.1.5 lakh, respectively.
- The deposits can be made in multiples of 100.
- Deposits towards the scheme should be made for a period of 15 years.
- However, the scheme matures after 21 years.
- No interest will be payable once the account completes twenty-one years from the date of opening.

## Indian Olympic Association (IOA)

- Indian Olympic Association (IOA) is the governing body for the Olympic Movement and the Commonwealth Games in India.
- As an affiliated member of the International Olympic Committee (IOC), Commonwealth Games Federation (CGF), Olympic Council of Asia (OCA), and Association of National Olympic Committees (ANOC), the IOA administers various aspects of sports governance and athletes' welfare in the country.

- IOA oversees the representation of athletes or teams participating in the Olympic Games, Commonwealth Games, Asian Games, and other international multi-sport competitions of the IOC, CGF, OCA, and ANOC.
- Beyond participation in the Games, the IOA has also established various initiatives with different stakeholders for the development of sports education and Olympic studies.
- IOA is recognised by the Ministry of Youth Affairs and Sports.
- The members of the IOA include National Sports Federations (NSFs), State Olympic Associations, IOC Members, and other select multi-sport organisations.
- In accordance with the Olympic Charter, the membership NSFs mostly include NSFs that govern sports featured in the sports programme of the Summer Olympic Games, Winter Olympic Games, Asian Games, and Commonwealth Games.



## Know India Programme (KIP)

- KIP is a flagship programme of the Ministry of External Affairs for engagement with Indian origin youth (between 18 and 30 years old).
- It is a three-week orientation programme for diaspora youth conducted with a view to promoting awareness of different facets of life in contemporary India.
- The programme has been in existence since 2003.
- As a part of the programme, the applicants finalized through the selection process visit India for a 21-day schedule.
- 90% of the cost of international airfare for KIP participants visiting India is borne by the Ministry, while the remaining 10% is borne by the applicants themselves.
- During the period of their stay in India, the Ministry provides for their accommodation, meals, and domestic transportation by road/air.

- During the period of their stay in India, the KIP participants are given insights into their understanding of India's political system, economy, society, and developments in various key sectors.
- Further, they are also provided exposure to India's history and heritage by visiting places of historical and cultural significance.
- The Ministry also facilitates their interactions with students and professionals from various fields, along with arranging for meetings and call on visits with senior officials and leadership.
- The KIP participants are also taken for a 7–10-day state visit to one or more Indian states as a part of the Programme.

### **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana**

- Ministry of Health & Family Welfare has released some statistics regarding Ayushman Bharat Pradhan Mantri — Jan Arogya Yojana (AB PM-JAY).
- Key Highlights of the AB PM-JAY Statistics:
- **Ayushman Cards:**
  - Women account for approximately 49% of the total Ayushman cards created and approximately 48% of total authorised hospital admissions.
  - As of December 2023, approximately 28.45 Crore Ayushman Cards have been created since the inception of the scheme, out of which, approximately 9.38 crore Ayushman Cards have been created during the year 2023.
- **Health Coverage:**
  - 55 crore individuals corresponding to 12 crore families are covered under the scheme and many states and union territories implementing AB PM-JAY have further expanded the beneficiary base, at their own cost.
- **Hospital Admissions:**
  - A total of 6.11 crore hospital admissions amounting to Rs 78,188 crores were authorised of which 1.7 crore hospitals admissions worth over Rs 25,000 crores were authorised during the year 2023 (Jan-Dec 2023).
- **About Ayushman Bharat-PMJAY:**
  - PM-JAY is the world's largest health insurance scheme fully financed by the government.

- Launched in 2018, it offers a sum insured of Rs.5 lakh per family for secondary care and tertiary care.
- Health Benefit Packages covers surgery, medical and day care treatments, cost of medicines and diagnostics.
- It is an entitlement-based scheme that targets the beneficiaries as identified by latest Socio-Economic Caste Census (SECC) data.
- The National Health Authority (NHA) has provided flexibility to States/UTs to use non- Socio-Economic Caste Census (SECC) beneficiary family databases with similar socio-economic profiles for tagging against the leftover (unauthenticated) SECC families.
- The funding for the scheme is shared – 60:40 for all states and UTs with their own legislature, 90:10 in Northeast states and Jammu and Kashmir, Himachal and Uttarakhand and 100% Central funding for UTs without legislature.
- Nodal Agency: The National Health Authority (NHA) has been constituted as an autonomous entity under the Society Registration Act, 1860 for effective implementation of PM-JAY in alliance with state governments.

### **e-SCR Portal**

- e-SCR portal is an initiative to provide the digital version of the apex court's judgements in the manner as they are reported in the official law report.
- The Supreme Court has developed a search engine with the help of the National Informatics Centre.
- It is comprising elastic search technique in the database of e-SCR and the search facility in e-SCR provides for free text search, search within search, case type and case year search, judge search, year and volume search and bench strength search options.
- It will provide free access to its about 34,000 judgements to lawyers, law students and the common public.
- These verdicts will be available on the apex court website, its mobile app and on the judgment portal of the National Judicial Data Grid (NJDG).

## MICE (Meetings, Incentives, Conferences and Exhibitions)

- MICE is a term used in the tourism and events industry to categorize and represent a segment related to business and corporate tourism.
- MICE tourism involves organizing and hosting events, meetings, conferences, exhibitions, and incentives for companies and groups.
- These activities aim to facilitate networking, knowledge exchange, business collaborations, and the showcasing of products and services within a professional or business context.
- The main purpose is to create a networking platform for business, industry, government and Academic Community and engage in meaningful conversations.
- Indian MICE has less than 1% share in the estimated global MICE business despite the natural & cultural advantages of India and being one of the highest growing economies.

## PRERANA Program

- PRERANA program aims to offer a meaningful, unique, and inspiring experience

Ministry of Education Launches "Prerana Program" for Experiential Learning at PM's Birthplace



to all participants, thereby empowering them with leadership qualities.

- It is driven by a strong commitment to integrate principles of the Indian education system and the philosophy of value-based education which is a cornerstone of the National Education Policy (NEP) 2020.
- It is a week-long residential program for selected students of class IX to XII.
- A batch of 20 selected students (10 boys and 10 girls) will attend the program, every week from various parts of the country.
- It will run from a Vernacular School, established in 1888, in one of the oldest living cities of India, Vadnagar, district Mehsana, Gujarat.
- The curriculum of Prerana School prepared by IIT Gandhi Nagar is rooted in nine value-based themes: Swabhiman and Vinay, Shaurya and Sahas, Parishram and Samarpan, Karuna

and Sewa, Vividhta and Ekta, Satyanishtha and Shuchita, Navachar and Jigyasa, Shraddha aur Vishwas, and Swatantrata and Kartavya.

- The day-wise program schedule will feature yoga, mindfulness, and meditation sessions, followed by experiential learning, thematic sessions, and hands-on interesting learning activities.
- Evening activities will include visits to ancient and heritage sites, inspirational film screenings, mission life creative activities, talent shows etc. ensuring a holistic learning approach.
- Apart from this, students will engage in diverse activities, embracing indigenous knowledge systems, latest State-of-Art technologies, and learning from inspirational personalities.

## Kochi-Lakshadweep Islands Submarine Optical Fiber Connection Project

- Kochi-Lakshadweep islands submarine optical fiber connection project is the submarine cable connectivity project from Mainland (Kochi) to eleven Lakshadweep



Islands namely, Kavaratti, Agatti, Amini, Kadmat, Chetlet, Kalpeni, Minicoy, Androth, Kiltan, Bangaram and Bitra has been extended.

- The project is funded by Universal Services Obligation Fund (USOF), Department of Telecommunication.
- Bharat Sanchar Nigam Limited (BSNL) was the Project Executing Agency and the work was awarded to M/s NEC Corporation India Pvt Ltd through Global Open Tendering process.
- The major activities related to the project include Marine Route Survey, Submarine Cable laying, Civil Construction of CLS stations, Installation, Testing and Commissioning of End Terminals (SLTE).
- The KLI-SOFC project will lead to an increase in internet speed unlocking new possibilities & opportunities.

## SMART 2.0

- Scope for Mainstreaming Ayurveda Research among Teaching professionals (SMART) program promotes robust clinical studies in



priority areas of Ayurveda with Ayurveda academic institutions/hospitals across the country through mutual collaboration.

- The objective of SMART 2.0 is to generate a tangible evidence to demonstrate efficacy and safety of Ayurveda interventions using interdisciplinary research methods and translating it into public health care.
- The study aims at safety, tolerability and adherence to Ayurveda formulations in the priority research areas of Bal Kasa, malnutrition, insufficient lactation, Abnormal Uterine Bleeding, Osteoporosis in post-menopausal women and Diabetes Mellitus (DM) II.
- The Central Council for Research in Ayurvedic Sciences (CCRAS) along with National Commission for Indian System of Medicine (NCISM) has launched SMART 2.0 program

### Swadesh Darshan 2.0

- Swadesh Darshan Scheme was launched in 2015 by the Ministry of Tourism, Government



of India, to develop sustainable and responsible tourism destinations in the country.

- It is 100% centrally funded scheme.
- Under the scheme, the Ministry of Tourism provides financial assistance to State governments, Union Territory Administrations or Central Agencies for development of tourism infrastructure in the country.
- Operation & Maintenance (O&M) of the projects sanctioned under Swadesh Darshan Scheme is the responsibility of the respective State Government/UT Administration.
- Swadesh Darshan 2.0 for development of sustainable and responsible tourist destinations covering tourism and allied infrastructure, tourism services, human capital development, destination management and promotion backed by policy and institutional reforms.
- The objective for the Swadesh Darshan 2.0 scheme envisage increase in private sector investment in tourism & hospitality.

- It may help in increasing Public Private Partnerships (PPP) in the field of tourism and operation and maintenance of the created assets under the scheme.

### Bharatmala Pariyojana

- Bharatmala Pariyojana is an umbrella programme launched under the Ministry of Road Transport and Highways.
- The first-phase of Bharatmala was announced in 2017 and was to be completed by 2022.
- Bharatmala focuses on enhanced effectiveness of already built infrastructure, multi-modal integration, bridging infrastructure gaps for seamless movement and integrating National and Economic Corridors.
- The move follows an over 100% increase in the estimated cost of the mega project and reflects the slowing of implementation, and financial constraints.
- There are six key features of the programme:
  - Economic Corridors: Integrating the economic corridors facilitates larger connectedness between economically important production and consumption centers.
  - Inter-corridor and Feeder routes: This would ensure first mile and last mile connectivity.
  - National Corridor Efficiency Improvement: Through this, the greater actionable goal is to undertake lane expansion and decongestion of existing National Corridors.
  - Border and International Connectivity roads: Better border road infrastructure would ensure greater maneuverability, while also boosting trade with neighboring countries.
  - Coastal and Port connectivity roads: Port-led economic development is further boosted through connectivity to coastal areas, encouraging both tourism and industrial development.
  - Green-field Expressways: Expressways have higher traffic configuration and choke points would benefit from green-field expressways.

### PRITHvi Vlgyan (PRITHVI) scheme

- PRITHVI Scheme is an initiative of the Ministry of Earth Sciences (MoES) to enhance the understanding of the Earth and its vital signs.

- This overarching initiative, with an allocation of Rs 4,797 crore for the period 2021-26, aims to significantly enhance research, modelling, and service delivery across crucial areas like weather, climate, oceans, and the polar regions.
- The Prithvi scheme integrates five existing sub-schemes:
  - Atmosphere and Climate Research-Modelling Observing Systems and Services (ACROSS)
  - Ocean Services, Modelling Application, Resources and Technology (O-SMART)
  - Polar Science and Cryosphere Research (PACER)
  - Seismology and Geosciences (SAGE)
  - Research, Education, Training, and Outreach (REACHOUT).
- These programs collectively aim to enhance our understanding of the Earth's vital signs and translate scientific knowledge into practical services that benefit society, environment and economy.
- One of the primary objectives of Prithvi is to augment and sustain long-term observations across the atmosphere, ocean, geosphere, cryosphere, and solid earth.

### **Mulya Pravah 2.0.**

- Mulya Pravah 2.0 is a guideline issued by the University Grants Commission (UGC) in India, aiming to instil human values and professional ethics in higher education institutions. It is a modified version of the 2019 Mulya Pravah guideline.
- Aim:
  - Inculcating human values and professional ethics in higher education institutions to build value-based institutions and promote constitutional values.
    - Instil deep respect for fundamental duties and constitutional values. Develop a culture of integrity, accountability, transparency, and inclusiveness in higher education institutions.
    - Decision-making should be guided solely by institutional and public interest, devoid of biases. Abolishment of discriminatory privileges; emphasis on punishing the corrupt.
    - Core Values Institutions are urged to ensure integrity, trusteeship, harmony, accountability, inclusiveness, commitment, respectfulness, belongingness, sustainability,

constitutional values, and global citizenship.

- Administration should prioritize transparency, fairness, honesty, and the highest ethical standards. Refrain from misappropriation and reject gifts that may compromise impartial duties.
- The guideline emphasizes maintaining confidentiality and conflicting with the right to information. It mandates institutions to voluntarily disclose critical information for public scrutiny.
- Teacher's Role Teaching is a noble profession; teachers are expected to act as role models.
- The expectation for staff and student unions to support the administration in development activities.

### **Report Fish Disease App : NSPAAD**

- The National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) project has introduced a mobile app 'Report Fish Disease' to track and monitor fish diseases across the country.
- The mobile application intends to empower fish farmers with a convenient and efficient platform to report diseases on their farms.
- Central Institute of Fisheries Technology (CIFT) is one of the collaborative partners of the NSPAAD project of which ICAR-NBFGR is the lead institute, under which this app is developed.
- Its intuitive and user-friendly interface enables easy accessibility to fish farmers.
- The app offers an easy disease reporting format, where farmers can easily report disease outbreaks by providing essential information such as location, species affected, symptoms observed, and images.
- The app also serves as an information hub, providing farmers with valuable resources on disease prevention, treatment, and best aquaculture practices.
- It is to provide a comprehensive package to ensure diagnosis, prevention, control, and treatment of aquatic animal diseases, thereby providing solutions for encouraging the aquaculture farmers.

### **Samavesha project**

- The project aims to enhance research collaboration in India by improving accessibility to facilities and labs.
- The platform allows researchers and industries to connect with institutions that have the

required equipment, enabling them to rent it for experiments.

- The initiative aims to save capital expenditure for researchers, industries, and startups and prevent duplication of resources at the national level.
- The Indian Science, Technology, and Engineering Facilities Map (I-STEM) is a national web portal that helps researchers find the facilities they need for their R&D work.
- The portal also aims to connect resources to researchers.

#### **One Vehicle One FASTag Initiative**

- The National Highways Authority of India (NHAI) has launched the One Vehicle, One FASTag initiative.
- The National Highways Authority of India suggested tagging users to complete the Know Your Customer (KYC) process by the end of January 31 to avoid deactivation.
- The move aims to enhance the efficiency of the Electronic Toll Collection system and provide seamless movement at the Toll Plazas.
- The new arrangement Of 'One Vehicle, One FASTag' has also been introduced to discourage user behaviour of using single FASTag for multiple vehicles or linking multiple FASTags to a particular vehicle.

- The initiative had been taken after the recent reports of multiple FASTags being issued for a particular vehicle and FASTags being issued without KYC in violation of RBI's mandate.

#### **Universal Service Obligation Fund**

- **Universal Service Obligation Fund (USOF)** was set up by an Act of Parliament in December 2003 by amending the Indian Telegraph Act, 1885.
- The objective of the USOF is to provide access to telecom services in a non-discriminatory manner to people in rural and remote areas at affordable and reasonable prices, thereby bridging the rural-urban digital divide.
- For commercially non-viable rural and remote areas, USOF provides subsidy support in the form of Net Cost or Viability Gap Funding (VGF) to incentivize telecom service providers for the expansion of telecommunications and broadband services in those areas.
- USOF is headed by the Administrator, USO Fund who is appointed by the Central Government, for the administration of the fund.
- It is an attached office of the Department of Telecommunications (DoT), Ministry of Communications

# ECONOMY

## Dividend Payout Ratio For Healthy Banks

- The Reserve Bank of India has released draft norms allowing banks with strong financial metrics to increase dividend payouts to shareholders up to 50% of profits, from the earlier 40% ceiling.
- The RBI emphasized it won't entertain discretionary dispensations for dividends, mandating strict eligibility compliance.
- This ensures only fundamentally strong banks pay higher returns based on real performance.
- **Key Highlights:**
  - Banks must have net non-performing asset ratio below 6% for past 3 years
  - Minimum required capital adequacy levels should also be met
  - 50% payout ratio applicable for zero net NPA banks
  - Ceiling reduces on higher bad loans – just 15% if over 4% NPA
  - One-time gain items excluded from dividend calculations
  - Eased repatriation for foreign bank branches meeting criteria

## Production Linked Incentive Scheme

- The Ministry of Heavy Industries has recently extended the tenure of the Production Linked



Incentive (PLI) Scheme for Automobile and Auto Components by one year, with incentives now applicable for five consecutive financial years starting from 2023-24.

- This decision has been made after receiving the approval of the Empowered Group of Secretaries (EGoS).
- Companies failing to meet the first year's sales increase threshold will not receive incentives for that year.
- However, they remain eligible for future benefits by achieving a 10% year-on-year growth over the first year's threshold.
- Production Linked Incentive Scheme is a government initiative in India that offers

financial incentives to companies based on their incremental sales of products manufactured in India.

- The scheme aims to drive domestic manufacturing, spur job creation, bolster exports, facilitate technology transfer, and diminish import reliance.
- The scheme is currently active in 14 key sectors: mobile manufacturing, manufacturing of medical devices, automobiles and auto components, pharmaceuticals, drugs, specialty steel, telecom & networking products, electronic products, white goods (ACs and LEDs), food products, textile products, solar PV modules, advanced chemistry cell (ACC) battery, and drones and drone components.
- The incentive rate varies depending on the sector and product category, but can range from 4% to 6% of incremental sales.

## Norms For Politically-Exposed Persons : RBI

- The Reserve Bank of India (RBI) recently updated Know Your Customer (KYC) norms for politically exposed persons (PEPs) who transact with regulated entities (REs), seeking to comply with the recommendations of the Financial Action Task Force (FATF).
- In the amended KYC master direction, the central bank defines PEPs as individuals who are or have been entrusted with prominent public functions by a foreign country, including the heads of states/governments, senior politicians, senior government or judicial or military officers, senior executives of state-owned corporations, and important political party officials.
- REs have the option of establishing a relationship with PEPs (whether as customers or beneficial owners).
- REs have to perform regular customer due diligence and also follow additional conditions prescribed by the RBI to transact with PEPs.
- Some additional conditions include establishing an appropriate risk management system to determine whether the customer or the beneficial owner is a PEP.
- REs have to take reasonable measures to establish the source of funds/ wealth.
- They also need to get approval from senior management to open an account for a PEP.

## Dynamic Asset Allocation

- Asset management company (AMC) PPFAS Mutual Fund recently filed for an open-ended

dynamic asset allocation scheme with the capital market regulator, the Securities and Exchange Board of India (SEBI).

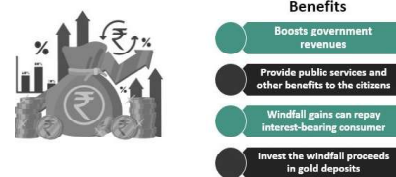
- DAA is an investment strategy that involves the frequent adjustment of the weights in a portfolio based on the overall market performance or the performance of certain securities.
- Most of the funds in this category are invested and spread across various sectors, including equity funds, real estate, stocks, and bonds.
- Under the dynamic allocation strategy, a portfolio manager assesses the current market conditions and the performance of each asset class.
- He uses the results of the assessment to reduce the weights of assets with bad performance and increase the weights of assets with strong performance.
- Generally, a dynamic strategy is used in reaction to existing risks and market downturns.
- Unlike the strategic asset allocation strategy, dynamic asset allocation does not involve a target mix of assets.
- Thus, portfolio managers enjoy a high degree of flexibility in their choice of investments.
- Dynamic allocation requires active portfolio management. Therefore, the success of the strategy depends not only on the market conditions but also on the portfolio manager's ability to make good investment decisions and to adequately respond to changes in the market.
- The frequent adjustments in the mix of assets can possibly provide higher returns on the investment portfolio.
- Unlike static asset allocation, dynamic allocation is highly flexible.
- The strategy can quickly respond to market changes and market risks.

### Windfall Tax

- India cut its windfall tax on petroleum crude to 1,700 rupees (\$20.53) a tonne from 2,300 rupees a tonne, according to a recent government notification.
- Windfall Tax levied by governments against certain industries when economic conditions allow those industries to experience significantly above-average profits.
- The term "windfall" refers to an unexpected rise in profits, and the tax on windfall gains is known as the windfall tax.

- When the government notices a sudden increase in an industry's revenue, they impose this tax.
- The most common industries that fall target to windfall gains tax include oil, gas, and mining.
- Purpose:

### Windfall Tax



- Redistribution of unexpected gains when high prices benefit producers at the expense of consumers;
- To fund social welfare schemes;
- As a supplementary revenue stream for the government;
- As a way for the Government to narrow the country's widening trade deficit.

### Yen Green Bond

- REC Limited issued the first Japanese Yen green bonds worth JPY 61.1 billion.
- REC Limited, a Maharatna Central Public Sector Enterprise (CPSE) under the Ministry of Power, has achieved a significant milestone by issuing its inaugural Japanese Yen (JPY) 61.1 billion (approximately Rs 3,500 crore) green bonds.
- Yen green bonds is REC Limited's eleventh venture into the international bond market and inaugural Yen Bond issuance, which is also the first Yen Green Bond issuance by any Indian PSU.
- These bonds, part of the \$ 10 billion global medium-term notes programme, span 5-year, 5.25-year, and 10-year tenures.
- Proceeds from the bond issuance will be dedicated to financing eligible green projects, adhering to REC Limited's green finance framework, Reserve Bank of India's (RBI) external commercial borrowings guidelines, and relevant approvals.
- It is the first Yen Green Bond issuance by any Indian PSU.
- It is the largest ever Euro-Yen issuance in South and South East Asia.
- It is the largest Yen-denominated issuance from India.
- It is the largest non-sovereign Yen-denominated issuance ever from South and South East Asia.

- Green bonds are financial instruments designed to raise capital specifically for projects that have positive environmental and/or climate benefits.
- Green bonds function similarly to regular bonds, offering fixed or variable interest rates to investors.
- However, the key difference lies in the use of proceeds

### National Monetization Pipeline

- The Centre has decided to conduct an Asset Recycling Drive under the National Monetization Pipeline (NMP), aiming to generate resources for new investments in infrastructure.
- The Centre's asset recycling drive is expected to generate around Rs 1.5 trillion in the fiscal year 2024-25.
- Transactions with monetisation values of around Rs 0.97 trillion were completed in 2021-22, and Rs 1.32 trillion in 2022-23.
- National Monetisation Pipeline (NMP) envisages an aggregate monetisation potential of Rs 6-lakh crore through the leasing of core assets of the Central government in sectors such as roads, railways, power, oil and gas pipelines, telecom, civil aviation etc, over a four-year period (FY 2022-25).
- The Monetization through NMP only includes core assets, excluding monetization through disinvestment of non-core assets.



- Currently, only assets of central government line ministries and CPSEs in infrastructure sectors have been included.
- The government is currently in the process of coordinating and collating asset pipelines from states to expand the scope of the NMP,

incorporating assets at both the central and state levels in due course.

- To streamline the process, the monetization of non-core assets, including land, real estate, and infrastructure, is being transferred from the Department of Investment and Public Asset Management (DIPAM) to the Department of Public Enterprises (DPE) within the Ministry of Finance.
- This pipeline is intended to support investments under the National Infrastructure Pipeline (NIP) worth Rs 111 trillion in six years through FY25.
- The timeline for the NMP has been strategically set to be co-terminus with the remaining period under the National Infrastructure Pipeline (NIP).

### Market Access Initiative (MAI)

- Market Access Initiative (MAI) Scheme is an export promotion scheme envisaged to act as a catalyst to promote India's exports on a sustained basis.
- The scheme is formulated on focus product-focus country approach to evolve specific markets and specific products through market studies and surveys.
- Assistance would be provided to Export Promotion Organizations/Trade Promotion Organizations/National Level Institutions/Research Institutions/Universities/Laboratories, Exporters etc., for the enhancement of exports through accessing new markets or through increasing their share in the existing markets.
- Under the Scheme, the level of assistance for each eligible activities has been fixed.
- The funding for each project will be on cost-sharing basis with the sharing pattern ranging from 65% to 50% at the minimum.
- It is administered by the Ministry of Commerce and Industry, Government of India, through the Directorate General of Foreign Trade (DGFT).

# INTERNATIONAL RELATIONS

## United Nations Relief And Works Agency For Palestinian Refugees In The Near East:

- United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA) is a UN agency that supports the relief and human development of Palestinian refugees.
- Following the 1948 Arab-Israeli war, UNRWA was established by United Nations General Assembly (UNGA) Resolution 302 (IV) of 8 December, 1949, to carry out direct relief and work programmes for Palestine refugees.
- The agency began operations on 1 May, 1950.
- In the absence of a solution to the Palestine refugee problem, the UNGA Assembly has repeatedly renewed UNRWA's mandate, most recently extending it until 30 June, 2023.
- It is one of the largest United Nations programmes, with a population of approximately 5 million registered Palestine refugees under its mandate and over 30,000 staff.
- It provides services in its five fields of operations: Jordan, Lebanon, Syria, the Gaza Strip and the West Bank, including the East of Jerusalem.
- UNRWA is unique in that it delivers services directly to its beneficiaries.
- It encompasses education, health care, relief and social services, camp infrastructure and improvement, microfinance, and emergency assistance, including in times of armed conflict.
- It is funded almost entirely by voluntary contributions from UN Member States.
- It also receives some funding from the Regular Budget of the United Nations, which is used mostly for international staffing costs.
- It reports only to the UN General Assembly.
- It was originally headquartered in Beirut, Lebanon, but was moved to Vienna, Austria, in 1978. In 1996, the General Assembly moved the agency to the Gaza Strip to demonstrate the Assembly's commitment to the Arab-Israeli peace process.
- India recently announced that it has provided US \$ 2.5 million to the United Nations Relief and Works Agency for Palestine Refugees in the Near East or the UNRWA for the welfare of Palestinian refugees.

## Argentina Rejects BRICS Membership

- Argentina has formally rejected the invitation to join the BRICS (Brazil, Russia, India, China, South Africa) group of major emerging economies.
- New Argentinian President Milei, during his election campaign, Milei had expressed a geopolitical alignment with the United States and Israel, emphasizing a reluctance to ally with communists.
- The decision aligns with his campaign promises and reflects a shift in foreign policy from the previous administration.
- The membership of Argentina, Ethiopia, Iran, Saudi Arabia, Egypt and the United Arab Emirates was due to take effect from January 1, 2024.

## Desert Cyclone 2024

- Exercise Desert Cyclone is the joint military exercise between India and the United Arab Emirates (UAE).
- The exercise aims to enhance interoperability by learning & sharing best practices in Urban Operations.
- This exercise is marking a significant milestone in the strategic partnership.
- The first-ever India-UAE Joint Air Forces exercise took place in September 2008 at the Al-Dhafra base in Abu Dhabi.
- India has also been a regular participant at the biennial International Defence Exhibition (IDEX) in Abu Dhabi.
- Earlier this year, two ships of the Indian Navy, INS Visakhapatnam, and INS Trikand participated in bilateral exercise Zayed Talwar with the UAE to enhance interoperability and synergy between the two navies



EX DESERT CYCLONE 2024

## Agreement On The Prohibition Of Attack Against Nuclear Installations And Facilities

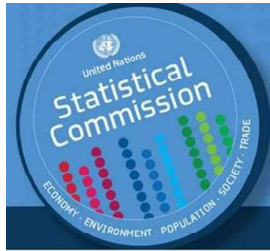
- India and Pakistan exchanged the list of nuclear installations and facilities through diplomatic channels recently under the agreement on the Prohibition of Attack against Nuclear installations and facilities.
- Agreement on the Prohibition of Attack against Nuclear Installations and Facilities was

signed on December 31, 1988, by the then Pakistani Prime Minister Benazir Bhutto and Indian PM Rajiv Gandhi.

- The treaty came into force on January 27, 1991, and has two copies each in Urdu and Hindi.
- The agreement mandates both countries to inform each other about any nuclear installations and facilities to be covered under the agreement on the first of January of every calendar year, providing a confidence-building security measure environment.
- The term nuclear installation or facility includes nuclear power and research reactors, fuel fabrication, uranium enrichment, isotopes separation, and reprocessing facilities, as well as any other installations with fresh or irradiated nuclear fuel and materials in any form and establishments storing significant quantities of radioactive materials.

### UN Statistical Commission

- UN Statistical Commission was established in 1947 and is the highest body of the global statistical system.
- It brings together the Chief Statisticians from member states from around the world.
- It is the highest decision-making body for international statistical activities, responsible for setting statistical standards and the development of concepts and methods, including their implementation at the national and international levels.
- The Statistical Commission oversees the work of the United Nations Statistics Division (UNSD), and it is a Functional Commission of the UN Economic and Social Council.
- The Commission consists of 24 member countries of the United Nations elected by the United Nations Economic and Social Council based on an equitable geographical distribution
- The term of office of members is four years.
- India was a member of the Statistical Commission last in 2004 and the country is returning to the UN agency after a gap of two decades.



### Breach Of Genocide Convention 1948

- The term genocide is often loosely used when speaking of attacks against various communities across the world.

- It has been defined using set criteria in the UN's Convention on the Prevention and Punishment of the Crime of Genocide, moved in the General Assembly in 1948.
- It says, In the present Convention, genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:
  - Killing members of the group
  - Causing serious bodily or mental harm to members of the group
  - Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part
  - Imposing measures intended to prevent births within the group
  - Forcibly transferring children of the group to another group
- As per this convention the genocide is a crime whether committed during wartime or peacetime.
- India ratified the convention in 1959; there is no legislation on the subject.
- South Africa moved the International Court of Justice (ICJ), for an urgent order declaring that Israel was in breach of its obligations under the 1948 Genocide Convention.

### Non-Aligned Movement (NAM) Summit

- The NAM is a forum of 120 developing countries that are not formally aligned with or against any major power bloc.
- It aims to represent the political, economic, and cultural interests of the developing world.
- The grouping has 53 members from Africa, 40 from Asia, 26 from Latin America and the Caribbean, and Belarus from Europe.
- There are also 18 observer countries and 10 observer organizations.
- The summit is expected to discuss issues like global cooperation, solidarity, and advancing common goals of developing countries related to politics, economics, and culture.
- As the incoming chair of NAM for 2024-2027, Uganda set the agenda and priorities for the grouping over the next few years.





### EB-5 Immigrant Investor Program

- The EB-5 (employment-based, 5th preference), or US golden visa, provides a special road for overseas investors and their families to seek permanent residency and Green Cards in the United States.
- It is administered by the United States Citizenship and Immigration Services (USCIS).
- It was created in 1990 to stimulate the U.S. economy through job creation and capital investment by foreign investors.
- Under this program, investors (and their spouses and unmarried children under 21) are eligible to apply for lawful permanent residence (become a Green Card holder) if they:
- Make the necessary investment in a commercial enterprise in the United States, and
- Plan to create or preserve 10 permanent full-time jobs for qualified U.S. workers.

### World Heritage Committee

- World Heritage Committee is a committee of the United Nations Educational, Scientific, and Cultural Organization (UNESCO).
- The Committee is responsible for the implementation of the World Heritage Convention, defines the use of the World Heritage Fund, and allocates financial assistance upon requests from States Parties.
- It has the final say on whether a property is inscribed on the World Heritage List.
- It examines reports on the state of conservation of inscribed properties and asks States Parties to take action when properties are not being properly managed.
- It also decides on the inscription or deletion of properties on the List of World Heritage in Danger.
- It consists of representatives from 21 of the States Parties to the Convention elected by their General Assembly.
- A Committee member's term of office is six years, but most state parties choose voluntarily to be members of the committee for only four years in order to give other states parties an opportunity to be on the committee.



### Free Movement Regime : India-Myanmar

- The Government of India is planning to end the Free Movement Regime along the international border with Myanmar and initiate a comprehensive smart fencing system throughout the entire stretch.

- The Free Movement Regime (FMR), implemented in 2018, allows people residing on either side of the India-Myanmar border to venture 16 km into each other's territory without visa.
- They can cross over, on production of a border pass with one-year validity and can stay up to two weeks.
- The border between India and Myanmar runs for 1,643 km in the 4 states of Mizoram, Manipur, Nagaland, and Arunachal Pradesh.

### Exercise Sea Dragon – 24

- Exercise Sea Dragon-24 is an elite multinational maritime exercise that encourages professional exchanges and teamwork among participating navies.
- Participating countries: India, Japan, South Korea, Australia, and the US.
- The exercise seeks to improve skills in a variety of maritime combat domains through a number of aerial and ground-based tasks, including:
  - Anti-submarine warfare (ASW): Locating and neutralising enemy submarines hiding beneath the seas.
  - Surface warfare: Coordinated attacks on hostile surface vessels using superior weaponry and tactics.
  - Air defence: Putting up an impenetrable air barrier to keep friendly forces safe from aerial threats.
  - Search and rescue (SAR): Tracking down and saving maritime personnel in need.
  - Communication and coordination: Synchronising activities across several platforms and exchanging information in a seamless manner.



### Green Fuels Alliance India

- Denmark has introduced the Green Fuels Alliance India (GFAI) to enhance collaboration with India in the sustainable energy sector, aligning with both nations' goals of achieving carbon neutrality.
- It aims to advance the green fuels sector, including green hydrogen, through innovation and partnerships.
- GFAI's objective is to foster an ecosystem promoting sustainable energy growth in India, involving businesses, government entities, and research institutions.
- The initiative is part of the Green Strategic Partnership signed in 2020 between India and Denmark.
- The announcement coincides with India's push for carbon neutrality by 2070 and Denmark's top ranking in the 2024 Climate Performance Ranking

# SCIENCE AND TECH

## Square Kilometre Array Observatory (SKAO)

- SKAO is an intergovernmental organization with participation from ten countries: Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, the Netherlands, and the UK.
- The headquarters of SKAO is located in the United Kingdom.
- SKAO's primary goal is to build and operate cutting-edge radio telescopes to transform the understanding of the Universe.
- The observatory aims to explore the formation and evolution of galaxies, delve into fundamental physics in extreme environments, and investigate the origins of life.
- The observatory consists of two telescopes situated at radio-quiet sites in South Africa and Australia.
- Associated facilities are established to support the operations of these telescopes.
- These will interconnect as a single giant telescope array.
- It will enable astronomers to probe celestial phenomena out to extreme distances, advancing cosmic understanding.
- Joining SKAO allows India a front-row seat in decoding mysteries of the universe through ultra-sensitive technology.
- Findings can enrich knowledge regarding galaxy evolution, stars, black holes and more while opening up new research directions.



## X-ray Polarimeter Satellite : Launched

- Indian Space Research Organisation (ISRO) has launched its first X-ray Polarimeter Satellite (XpoSat) to study X-ray polarisation and its cosmic sources, like Black holes, Neutron stars, and Magnetars.
- The mission is propelled by the PSLV-C58 rocket in Low Earth Orbit.
- X-ray Polarimeter Satellite (XpoSat) is designed to study X-ray polarization in the medium X-ray band, offering insights into celestial sources' radiation mechanisms and geometry.



- This study is crucial for understanding the physics behind these celestial bodies.
- The satellite carries two main payloads, POLIX (Polarimeter Instrument in X-rays) and XSPECT (X-ray Spectroscopy and Timing).
- POLIX will observe about 40 bright astronomical sources, while XSPECT will study the electromagnetic spectrum generated by different matter.
- Entirely built by two Bengaluru-based institutes—ISRO's UR Rao Satellite Centre and Raman Research Institute—XPoSat's development began in 2008, with a formal agreement signed with ISRO in 2015.
- XPoSat is only the world's second mission dedicated to X-ray polarization in the medium X-ray band. NASA's Imaging X-ray Polarimetry Explorer (IXPE), launched in 2021, was the first such mission by a space agency.
- XPoSat will be India's third space-based observatory, following the recently launched solar mission Aditya-L1 and AstroSat, which was launched in 2015. Its launch is seen as a significant stride for Indian astronomy and space research.

## Pegasus Spyware

- Recent reports by Amnesty International point to its utilization in targeting the phones of two prominent Indian journalists, prompting inquiries into potential government involvement.
- Amnesty International is a global movement of more than 10 million people who are committed to creating a future where human rights are enjoyed by everyone.
- Pegasus spyware is a highly invasive mobile surveillance tool that can secretly infiltrate and monitor smartphones, collecting data and information from various apps and sources.
- It was developed by the Israeli cyber-intelligence firm NSO Group, which claims to sell it only to government agencies for fighting crime and terrorism.
- Pegasus uses zero-click methods to infect devices; it is a malicious software that allows spyware to be installed on a device without the device owner's consent.
- The spyware doesn't necessitate any user actions for installation, distinguishing it from regular apps that require explicit user confirmation.


- It can exploit vulnerabilities in apps such as WhatsApp, iMessage, or FaceTime, and send a message or a call that triggers the installation of the spyware, even if the user does not open or answer it
- Pegasus is a spyware that can exploit zero-day vulnerabilities to deploy spyware on Apple products.
- A zero-day vulnerability is an undiscovered flaw or bug in an operating system that the mobile phone's manufacturer does not yet know about and so has not been able to fix.
- Several investigations and reports have revealed that Pegasus spyware has been used to spy on journalists, human rights activists, lawyers, opposition leaders, and heads of state.
- Some of the countries that have been accused of using Pegasus spyware to target their critics and enemies include Saudi Arabia, Mexico, India, Morocco, Hungary, Azerbaijan, and Rwanda.

### Bubble Baby Syndrome

- Bubble baby syndrome, known medically as Severe Combined Immunodeficiency (SCID) is very rare genetic disorder that causes life-threatening problems with the immune system.
- It is a type of primary immune deficiency.
- The disease is known as living in the bubble syndrome because living in a normal environment can be fatal to a child who has it.
- Severe Combined Immunodeficiency
  - In a developing baby, the immune system starts in the bone marrow. Stem cells can become any of three different types of blood cells.
  - SCID is a combined immunodeficiency because it affects both of these infection-fighting white blood cells.
  - In SCID, the child's body has too few lymphocytes or lymphocytes that don't work properly.
  - Because the immune system doesn't work as it should, it can be difficult or impossible for it to battle the germs—viruses, bacteria, and fungi—that cause infections.
- Causes
  - Inherited mutations in more than a different genes cause SCID.
  - This means one or both birth parents pass down the disease to their child.
- Symptoms

- Babies with SCID may appear healthy at birth, but problems can start soon after.
- Treatment: SCID is a pediatric emergency.
  - Without treatment, babies are not likely to survive past their first birthday.
  - The most common treatment is a stem cell transplant (also called a bone marrow transplant).

### KH-22 Missile

- KH-22 Missile is a Soviet-era long-range airborne supersonic cruise missile. 
- Armed with a nuclear or highly explosive fragmenting cumulative warhead, it was initially designed to destroy aircraft carriers and other large warships, or even groups of such carriers.
- The Kh-22 family was developed in the USSR in the 1960s and specifically designed to be launched from Tupolev-22 bombers.
- Later, both the missiles and the aircraft were modernized as part of the so-called Kh-22 special air-to-surface missile complex.
- Upgraded in the 1970s, the missile had an impressive speed of 4,000 kilometers per hour, a 1,000-kilogram warhead, and a range of 500 kilometers.
- It weighs 5,820 kilograms.
- A total of approximately 3,000 such missiles were produced in the USSR.
- After the USSR collapsed, quite a few of them remained in Ukraine. However, soon after independence in 1991, Ukraine gave up its nuclear and strategic aviation arsenal.
- In 2000, Ukraine transferred 386 Kh-22 missiles to Russia as an installment against the gas debt.
- The successor to the Kh-22 became the Kh-32, which can be carried by the new Russian Tu-22M3M bombers.
- The new missile features a conventional warhead, an improved rocket motor, and a new radar imaging terminal seeker.
- It has a longer range but a smaller warhead.

### Direct-To-Mobile (D2M) Technology Services

- D2M is similar to that of an FM radio, where a receiver within the device can tap into different radio frequencies.
- This new-age technology is a combination of broadband and broadcast that uses mobile phones to capture territorial digital TV signals.

- Using D2M, multimedia content, including live TV matches, can be streamed to phones directly without using the internet.
- D2M can ensure emergency alerts are delivered directly, reliably and without dependence on internet/cellular networks. Disaster Management audio content is delivered directly and authentically in a targeted manner.
- With D2M, governments can broadcast citizen-centric information.
- This approach benefits consumers by reducing their reliance on internet data consumption for staying informed and entertained.

### Cyber kidnapping

- Cyber kidnapping refers to an online extortion crime where scammers persuade an individual to hide somewhere while pretending to their loved ones they are captive.
- The victims also share images seeming to indicate they are bound or gagged, furthering fears of harm if ransom is not paid.
- In reality, the scammers simply monitor the individual remotely while negotiating payments from worried relatives who believe them abducted.
- While comprehensive data remains lacking, law agencies confirm cyber kidnappings are increasing worldwide, especially targeting international students.
- Experts worry advances in AI like human-mimicking voice tech could make schemes more convincing for victims and families.

### UC-POP-Au : Photocatalyst

- IISER Bhopal recently developed a new photocatalyst called UC-POP-Au, which absorbs the entire spectrum of light, making it a potent catalyst for chemical processes.
- Photocatalyst is a combination of two words: photo, related to photon, and catalyst, which is a substance altering the reaction rate in its presence.
- Photocatalysts are materials that change the rate of a chemical reaction upon exposure to light. This phenomenon is known as photocatalysis.
- The illumination of the catalyst causes the generation of free charges (electrons and holes) that can participate in chemical reactions, altering the reaction rate.
- Photocatalysis includes reactions that take place by utilising light and a semiconductor.

All the photocatalysts are basically semiconductors.

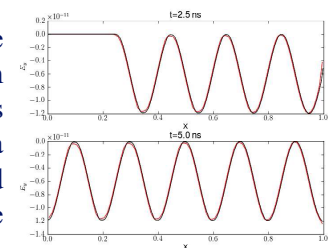
- There are various materials that show photocatalytic capability, and titanium dioxide (TiO<sub>2</sub>) is said to be the most effective.

### Aspergillus fumigatus

- It is a species of fungus that causes diseases in humans.
- It can be found throughout the environment, including in soil, plant matter, and household dust.
- The fungus can also produce airborne spores called conidia. Most people can inhale many of these spores on a daily basis.
- In a healthy individual, the immune system often clears them from the body without a problem. However, for some people, inhaling *A. fumigatus*, spores can lead to a potentially severe infection.
- *Aspergillus fumigatus* is considered an opportunistic organism.
- It has low virulence (ability to cause damage) and causes disease only in some circumstances, like:
  - A severely weakened state caused by sickness, poor nutrition, advanced age, etc.
  - Immunosuppression by diseases or medicines
  - Implants use, such as prosthetic devices
- An infection that's caused by an *Aspergillus* species of fungus is referred to as aspergillosis.
- *Aspergillus* can cause allergic reactions, chronic lung conditions, and an invasive disease that spreads to your brain, kidneys, lungs, or other organs.

### Plasma waves

- These waves are often observed in the Earth's magnetosphere, a magnetic field cavity around the Earth.
- In general, plasma waves are identified as the short-time scale fluctuations in the electric and magnetic field observations.
- These plasma waves play an important role in the energization and transport of the charged particles in the Earth's magnetosphere.



## Fuel Cell-Based Power System

- A fuel cell is a device that generates electricity by a chemical reaction.
- Fuel cells can be used in a wide range of applications, providing power for applications across multiple sectors, including transportation, industrial/commercial/residential buildings, and long-term energy storage for the grid in reversible systems.
- A fuel cell consists of two electrodes—a negative electrode (or anode) and a positive electrode (or cathode).
- Both electrodes must be immersed in and separated by an electrolyte, which may be a liquid or a solid but must, in either case, conduct ions between the electrodes in order to complete the chemistry of the system.
- A fuel, such as hydrogen, is supplied to the anode, where it is oxidised, producing hydrogen ions and electrons.
- An oxidizer, such as oxygen, is supplied to the cathode, where the hydrogen ions from the anode absorb electrons from the latter and react with the oxygen to produce water.
- The difference between the respective energy levels at the electrodes (electromotive force) is the voltage per unit cell.
- The amount of electric current available to the external circuit depends on the chemical activity and amount of the substances supplied as fuel.
- A single fuel cell generates a tiny amount of direct-current (DC) electricity. In practice, many fuel cells are usually assembled into a stack.
- Fuel cells have lower or zero emissions compared to combustion engines. Hydrogen fuel cells emit only water, addressing critical climate challenges as there are no carbon dioxide emissions.


## Supernova

- A supernova is the explosion of a star whose luminosity after an eruption suddenly increases many millions of times its normal level.
- Supernovas are the largest explosion that takes place in space.
- A star can go supernova in one of two ways:
  - Type I supernova: The star accumulates matter from a nearby neighbour until a runaway nuclear reaction ignites.

- Type II supernova: The star runs out of nuclear fuel and collapses under its own gravity.

- Supernovas can briefly outshine entire galaxies and radiate more energy than our sun will in its entire lifetime.
- They're also the primary source of heavy elements in the universe.
- They heat up the interstellar medium, distribute heavy elements throughout the Galaxy, and accelerate cosmic rays.

## Zosurabalpin : New Class Of Antibiotics

- Researchers have identified a new class of antibiotics, specifically zosurabalpin, with the potential to combat drug-resistant bacterium *Acinetobacter baumannii*.
- This antibiotic was found to be effective against CRAB (carbapenem-resistant *Acinetobacter baumannii*)-induced pneumonia and sepsis in mouse models.
- Zosurabalpin, a drug candidate, was developed through the optimization of a tethered macrocyclic peptide (MCP) that selectively kills *A. baumannii*.
- The antibiotic's unique mode of action involves inhibiting the transport of lipopolysaccharide (LPS), an essential process for creating the outer-membrane structure of Gram-negative bacteria.
- Zosurabalpin blocks LPS transport, leading to the abnormal build-up of LPS in the cell and the subsequent death of the bacterium.
- Gram-negative bacteria have a thin peptidoglycan layer in the cell wall, which is sandwiched between two lipid membranes, giving them a complex structure.
- This outer membrane acts as a barrier, making them more resistant to antibiotics.

## Starlink Satellites With Direct-To-Cell

- SpaceX successfully launched the first set of Starlink satellites equipped with direct-to-cell capabilities.
- Direct-to-cell refers to a technology that enables communication signals, such as text messages, voice, and data, to be transmitted directly from space-based satellites to mobile devices (cell phones) without the need for traditional ground-based infrastructure.

- In the context of SpaceX's Starlink project, direct-to-cell capabilities allow the delivery of wireless services, including network access and communication services, to mobile users in specific geographical areas using satellite connectivity.
- This technology is particularly useful in remote or underserved regions where establishing traditional terrestrial networks may be challenging or economically unfeasible

### Lunar Gateway Station

- Lunar Gateway Station is a primary component of NASA's Artemis program.
- Artemis intends to establish a long-term base on the Moon (Artemis base), and the Lunar Gateway will serve as a multi-purpose outpost that orbits the Moon.
- The Gateway is a multinational project involving four of the International Space Station partner agencies: NASA, the European Space Agency (ESA), Japan's Aerospace Exploration Agency (JAXA), and the Canadian Space Agency (CSA).
- The Gateway Station is similar to the International Space Station currently in low Earth orbit, but the Gateway will orbit the Moon.
- Incidentally, the Gateway will be the first space station ever to exist outside of low Earth orbit, or LEO.
- From the Gateway, NASA and international partners can provide essential support for long-term human presence on the lunar surface, as well as launch additional missions for deep space exploration.
- Its flight path is a highly elliptical orbit, bringing it both relatively close to the Moon's surface and also far away, making it easier to pick up astronauts and supplies from Earth, around a five-day trip.
- It will also offer a place to relay communications and act as a base for scientific research.
- The Gateway will weigh around 40 tonnes and consist of a service module, a communications module, a connecting module, an airlock for spacewalks, a place for the astronauts to live,



and an operations station to command the Gateway's robotic arm or rovers on the Moon.

- Astronauts will be able to occupy it for up to 90 days at a time, occasionally travelling to the lunar surface to conduct science and test new technologies.

### Taurus Missile

- Taurus KEPD 350, known as the bunker buster, is a Swedish-German long-range air-to-surface cruise missile.
- The high-precision stand-off guided missile system can penetrate through dense air defence systems and destroy hard and deeply buried stationary and semi-stationary military targets on the ground.
- The missile attacks target bridges, ships in ports, runways, command, control and control centres, bunkers, port facilities, and air base buildings.
- It is in service with the German (Luftwaffe) and Spanish Air Forces.

### Peregrine Lunar Lander

- Peregrine Lander is designed to carry scientific instruments and other payloads to the Moon's surface, specifically targeting the Sinus Viscositatis region.
- This area, also known as the Bay of Stickiness, lies adjacent to the Gruithuisen Domes near the Oceanus Procellarum, or Ocean of Storms.
- Aim to locate water molecules on the moon, measure radiation and gases around the lander, and evaluate the lunar exosphere (the thin layer of gases on the moon's surface)"
- The mission's scientific goals are ambitious is to analyse the lunar exosphere, assess the thermal properties and hydrogen content of the lunar regolith, study magnetic fields, examine the radiation environment, and test advanced solar arrays.
- Peregrine Mission 1 will transport approximately ten payloads, with a total mass capacity of 90 kilograms.
- The scientific payload features cutting-edge instruments such as the Laser Retro-Reflector Array (LRA), Linear Energy Transfer Spectrometer (LETS), Near-Infrared Volatile Spectrometer System (NIRVSS), PROSPECT Ion-Trap Mass Spectrometer (PITMS), and Neutron Spectrometer System (NSS).
- The Peregrine Lunar Lander was launched aboard the United Launch Alliance's Vulcan rocket to embark on its pioneering journey to explore the Moon.

## Sky Dew

- Israel recently deployed Sky Dew along the



Lebanese border as tensions with Hezbollah escalated.

- Sky Dew is a massive balloon-like structure in the shape of a puffed aircraft.
- The high-altitude observation balloon acts as a detection radar blip for small unmanned aircraft and cruise missiles.
- It is one of the largest aerial threat warning systems in the world.
- The technology has been jointly developed by Israel Defence and US company The project was entirely funded by the U.S. Department of Defence.
- The Israel Air Force was handed over the Sky Dew in 2022.
- The system comprises a blimp capable of flying at high altitudes with radar and detection systems to scan a wide range in any direction.
- The radar on the balloon is capable of observing at 250 km and tracking multiple targets, including low-altitude ones and those in valleys.
- It can carry 7,000 pounds and has an operational altitude of 10,000 feet.
- It offers a significant advantage in its ability to remain in surveillance for extended periods without needing fuel or crew replacement.

## AI Odyssey

- Microsoft has unveiled an ambitious new initiative called AI Odyssey that aims to provide advanced skills training in artificial intelligence (AI) tools and technologies to 100,000 software developers across India.
- The free online program allows anyone passionate about AI to register and access learning content tailored to help them build expertise in applying Microsoft Azure cloud services for creating AI solutions.
- Microsoft AI Odyssey represents a major investment in empowering India's technology talent to lead innovation in one of the most pivotal emerging fields of computer science.

- The country is well positioned to become an AI powerhouse given its broad base of skilled developers and abundance of potential applications from healthcare to agriculture.
- Providing targeted guidance on mastering AI can accelerate this transformation.

## INS Kabra

- INS Kabra is a naval vessel named after an island of the Andaman and Nicobar archipelago.
- It belongs to the Car Nicobar class of high-speed offshore patrol vessels built by Garden Reach Shipbuilders and Engineers (GRSE) for the Indian Navy.
- It was the eighth in a series of 10 Fast Attack Crafts.
- The vessels are designed as a cost-effective platform for patrol, anti-piracy and rescue operations in India's Exclusive Economic Zone.
- The class and its vessels are named after Indian islands.
- They are the first water jet propelled vessels of the Indian Navy.
- With a top speed of over 35 knots, and excellent manoeuvrability offered by her water-jet propulsion, the ship is ideally suited for high-speed,



## Ugram

- Ugram is a state-of-the-art indigenous assault rifle.
- It has been developed by the Armament Research and Development Establishment (ARDE), a unit of DRDO, in collaboration with a private industry partner.
- It was developed in less than 100 days.
- It has been developed as per the General Staff Qualitative Requirements (GSQR) of the army into consideration.
- The rifle will deploy rounds of 7.62 mm calibre, making it more ferocious than rifles that use 5.62 mm calibre rounds, like the INSAS rifle, which is popularly used by the armed forces in India, including paramilitary forces.
- It has an effective range of 500 metres.
- It weighs less than four kilograms.
- The rifle has a 20-round magazine that fires robustly and in full auto mode.

### Starliner Unmanned Aerial Vehicle (UAV)

- Drishti 10 Starliner is an indigenously manufactured Unmanned Aerial Vehicle (UAV).
- It was developed by Adani Defence and Aerospace.
- It is an advanced intelligence, surveillance, and reconnaissance (ISR) platform with 36 hours endurance and a 450 kg payload capacity.
- It is an all-weather military platform which has clearance to fly in both segregated and unsegregated airspace.
- It is designed to possess high endurance, combat-proven capabilities, and advanced features, providing a significant boost to India's naval capabilities.
- The UAV's autonomous nature, coupled with its mission effectiveness and payload configuration options, makes it an invaluable asset for strategic operations.
- One of the distinguishing features of the Drishti 10 'Starliner' is its minimal maintenance requirements, making it cost-effective and operationally efficient.
- This characteristic ensures increased operational readiness, reducing downtime, and maximising deployment opportunities.
- It is equipped with advanced communication systems, including satellite communication and Line-of-Sight (LOS) data links, ensuring reliable and secure data transmission.

### Einstein Probe (EP)

- Einstein Probe (EP) is a mission of the Chinese Academy of Sciences (CAS) dedicated to time-domain high-energy astrophysics.
- The primary scientific goal of the EP is to explore the transient and variable X-ray sky, capturing powerful bursts of high-energy light emanating from objects such as merging neutron stars and black holes.
- It was successfully launched on January 9, 2024, from the Xichang Satellite Launch Centre in China with a Long March-2C rocket.
- It is equipped with state-of-the-art X-ray mirrors and detectors.
- Unlike conventional X-ray telescopes, Einstein Probe's unique design allows it to monitor almost a tenth of the sky simultaneously, discovering new sources as they light up in X-rays and enabling in-depth studies of known and new celestial phenomena over extended periods.

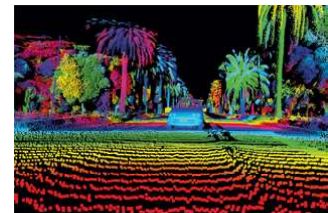
- It will also detect light from gamma-ray bursts, supernovae, flares from other stars, and events within the Solar System, such as emissions from comets.

### VIPER

- The Volatiles Investigating Polar Exploration Rover, or VIPER will get a close-up view of the location and concentration of ice and other resources at the Moon's South Pole.
- It is NASA's first mobile robotic mission to the Moon.
- It will directly analyse ice on the surface and subsurface of the Moon at varying depths and temperature conditions within four main soil environments.
- The data VIPER transmits back to Earth will be used to create resource maps, helping scientists determine the location and concentration of ice on the Moon and the forms it's in, such as ice crystals or molecules chemically bound to other materials.
- It navigates across the rugged terrain of the lunar South Pole and gathers valuable data that will help us better understand the history of the Moon and the environment where NASA is planning to send Artemis astronauts.
- Mission duration: 100 Earth days, covering 3 cycles of lunar day and night.
- It will land at the South Pole of the Moon in late 2024.

### Lidar

- Lidar, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.
- These light pulses—combined with other data recorded by the airborne system—generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
- A lidar instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.
- Lidar systems allow scientists and mapping professionals to examine both natural and man-made environments with accuracy, precision, and flexibility.

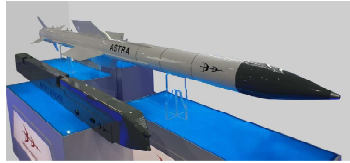




- It is used in a wide range of land management and planning efforts, including hazard assessment (including lava flows, landslides, tsunamis, and floods), forestry, agriculture, geologic mapping, and watershed and river surveys.

### Astra

- Astra is a beyond-visual-range (BVR) air-to-air missile designed to be on fighter aircraft.
- It is indigenously developed by the Defence Research and Development Organisation (DRDO) and manufactured by Bharat Dynamics Ltd. (BDL) for the Indian Air Force (IAF).
- The missile is designed to engage and destroy highly manoeuvring supersonic mounted aircraft.
- It is the best in its class of weapon systems in the world in the category of air-to-air missiles.
- The missile is being developed in multiple variants to meet specific requirements.



- The ASTRA Mk-I Weapon System, integrated with SU-30 Mk-I aircraft, is being inducted into the Indian Air Force (IAF).

### Soil-Powered Fuel Cell

- A team from Northwestern University has developed a soil-powered fuel cell that harvests energy from microbes in the soil.
- This small fuel cell, about the size of a book, could be used to power underground sensors in applications like green infrastructure and precision agriculture.
- The researchers tested the fuel cell by using it to power sensors detecting touch and measuring soil moisture.
- The new fuel cell's design, with a perpendicular configuration of anode and cathode, performs better in dry conditions, making it more suitable for low-moisture environments.
- The researchers claim it can generate power indefinitely as long as there are microbes and carbon in the soil



# ENVIRONMENT

## National Transit Pass System (NTPS)

- National Transit Pass System is to facilitate the seamless transit of timber, bamboo, and other forest produce across the country.
- The transit permits are issued for transport of timber and forest produce based on state specific transit rules.
- The NTPS is envisioned as a One Nation-One Pass regime, which will enable seamless transit across the country.
- This initiative will streamline the issuance of timber transit permits by providing a unified, online mode for tree growers and farmers involved in agroforestry across the country, contributing to the ease of doing business.
- It offers seamless transit permits, managing records for both inter-state and intra-state transportation of timber, bamboo and other forest produce obtained from various sources like private lands, government owned forest and private depots.
- The QR coded transit permits generated under NTPS will allow check gates across various states to verify the validity of the permits and allow seamless transit.
- It is designed for user convenience, featuring desktop and mobile applications for easy registration and permit applications.
- Transit permits will be issued for tree species which are regulated, while the users can self-generate No Objection Certificates for exempted species.
- Presently, 25 States and Union Territories have embraced the unified permit system, streamlining interstate business operations for producers, farmers, and transporters.
- Nodal Ministry: Ministry of Environment, Forest and Climate Change.

## Indian Pangolin Conservation Project

- The pangolin conservation project launched to protect pangolins has succeeded at Pench Tiger Reserve and Satpura Tiger Reserve, as the mammals have started to breed there
- Pangolins, also known as scaly anteaters, are the only known mammals with large keratin scales covering their skin.
- Of the eight species found worldwide (four each in Asia and Africa), two are found in India: the Indian Pangolin (*Manis crassicaudata*) and the Chinese Pangolin (*Manis pentadactyla*).

- Indian Pangolin also called the thick-tailed pangolin, is native to the Indian subcontinent.
- They are one of the most trafficked mammals in the world, despite an international ban on their trade.
- It lives in India (south of the Himalayas), Bangladesh, Southern Nepal, Sri Lanka, and small parts of Pakistan.
- **Conservation status**
  - IUCN Red List: Endangered
  - Wildlife (Protection) Act, 1972: Schedule I
  - CITES: Appendix I



## River Devika Project

- River Devika Project built on the lines of Namami Ganga, the project was launched in February 2019.
- It is north India's first river rejuvenation project.
- The project is implemented along the Devika River in Jammu and Kashmir.
- It has been included in the Government of India's National River Conservation Project (NRCP).
- Under the project, bathing ghats (places) on the banks of the Devika River will be developed, encroachments will be removed, natural water bodies will be restored, and catchment areas to be developed along with cremation ground.
- It offer a unique destination both for pilgrim tourists as well as recreation tourists, in addition to being a state-of-the-art cremation centre

## Indrayani River

- Indrayani River is a tributary of the Bhima River, which again is a tributary of the Krishna River.
- It originates in Kurvande village near Lonavla, a hill station in the Sahyadri mountains of Maharashtra.
- It flows east from there to meet the Bhima River.



- It follows a course mostly north of the city of Pune.
- The river has great religious importance, and the two sacred towns of Alandi and Dehu are situated on its banks.
- Dehu is known to be a sacred place for being the hometown of the poet Saint Tukaram, who was a popular saint of Maharashtra, and Alandi holds the samadhi of the poet Dnyaneshwar.
- Valvan Dam at Kamshet, situated on the Indrayani River, is a hydroelectric generating station.

### **Impact Of Logging And Climate Change On Biodiversity : IISc Research**

- An IISc research investigating impacts of logging and climate change on biodiversity-rich tropical mountain forests has revealed intriguing ecological shifts.
- Analysis of insect-eating tropical bird data collected over 10 years showed logging is pushing smaller species to higher cooler elevations due to hotter temperatures while larger birds declined in logged forests.
- Large birds need more energy and are suffering disproportionate declines in degraded forests unable to meet their ecological needs, unlike smaller adaptable species better colonizing such emerging niches.
- The findings thus underscore the critical importance of preserving intact old-growth forests to mitigate biodiversity threats from logging and provide climate migration pathways to species forced to shift habitats due to rising heat.
- Experts suggest that to aid climate adaptation, wildlife managers should prioritize conserving old-growth forests across extensive elevation gradients.
- This allows temperature-sensitive fauna to keep shifting upwards as lowlands get hotter.

### **African Raptors : Population Declines**

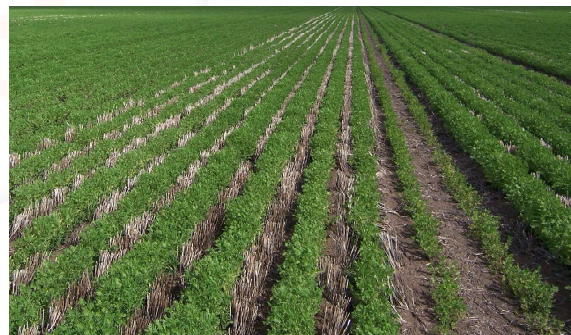
- A new study has revealed that 37 out of 42 African raptor species analyzed have

experienced significant population declines of around 88% in the past 40 years.

- Out of these, 29 species constituting 69% have seen drops over 3 generation lengths that qualify them as globally threatened under IUCN criteria of endangerment.
- The analysis found 6 raptor species endemic or near-endemic to Africa already overshot the minimum threshold of loss of habitat and numbers that signals heightened extinction risk.
- There is pressing need to reassess the status of over 10 declining yet currently least-concern species which might be more endangered than categorized.
- Habitat destruction, loss of nesting sites and prey base along with poisoning and hunting have accelerated declines, especially in West Africa's high poverty, corruption and misgovernance contexts.

### **Lentil Production**

- India is set to become the world's largest producer of lentil (masoor) during the 2023-24 crop years on account of higher acreage.



- In India, it's mostly consumed as 'Dal' by removal of outer skin and separation of cotyledons.
- Lentil is also called as Masur and Malka (bold seeded).rld's largest producer of lentil (masoor) during the 2023-24 crop years on account of higher acreage.
- It is widely cultivated throughout Europe, Asia, and North Africa.
- The Lentil growing states in India are Madhya Pradesh, Uttar Pradesh, Bihar, Chattisgarh, Haryana, Punjab, Maharashtra, Rajasthan, etc
- It is easy to cook and easily digestible with high biological value. Dry leaves, stems, empty and broken pods are used as valuable cattle feed.
- According to Food and Agriculture Organization (FAO), the world top lentil growers in 2022 were Canada, India, Australia, Turkey and Russia.

- Despite being the second largest producer of lentil, India has so far been importing mainly from Australia, Canada, Russia, Singapore, and Turkey.
- During the current year, it also imported some quantities of lentil from UAE, USA, Sri Lanka and Nepal.

### **Pench Tiger Reserve (PTR)**

- The Reserve is located in the southern reaches of the Satpura hills in the Seoni and Chhindwara districts in Madhya Pradesh and



continues in Nagpur district in Maharashtra as a separate Sanctuary.

- It is named after the Pench River, which flows from north to south through the Reserve.
- The Pench Tiger Reserve (PTR) in Maharashtra is India's first Dark Sky Park within a tiger reserve for earmarking areas around the park that restrict light pollution for stargazers to access pristine dark skies.
- Dark Sky Place certification focuses on lighting policy, dark sky-friendly retrofits, outreach and education, and monitoring the night sky.
- This designation positions PTR as a sanctuary where tourists can witness celestial spectacles, shielded from the intrusion of artificial light pollution.
- PTR became the fifth such park in Asia.
- The certification was given by the International Dark-Sky Association, a global dark-sky movement to promote astronomy.

### **Genetic Engineering Appraisal Committee**

- Genetic Engineering Appraisal Committee (GEAC) is the statutory committee constituted under the Environment (Protection) Act, 1986.
- It functions under the Ministry of Environment, Forest, and Climate Change (MoEF & CC).
- It is responsible for the approval of activities involving large-scale use of hazardous living microorganisms and recombinants in research

and industrial production from an environmental perspective.

- The committee is also responsible for the appraisal of proposals relating to the release of genetically engineered (GE) organisms and products into the environment, including experimental field trials.
- Clearance of GEAC is mandatory for the environmental release of GM crops

### **Mahanadi basin**

- Mahanadi River Basin is the 8th largest river basin in the country, with a total catchment area of 139681.51 sq. km, which is nearly 4.28% of the total geographical area of the country.
- The catchment area of the basin extends over major parts of Chhattisgarh and Odisha and comparatively smaller portions of Jharkhand, Maharashtra, and Madhya Pradesh.
- The basin has a maximum length and width of 587 km and 400 km, respectively.
- It is bounded by the Central India hills on the north, by the Eastern Ghats on the south and east, and by the Maikala range on the west.
- Physiographically, the basin can be divided into four regions, namely, the northern plateau, the Eastern Ghats, the coastal plain, and the erosional plains of central table land.

### **Coral Reef**

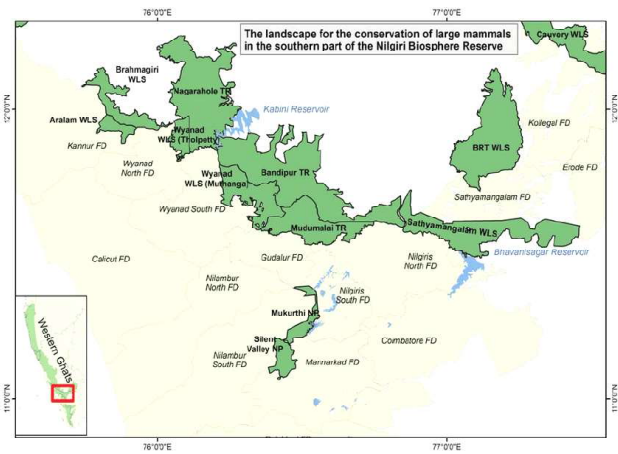
- Scientists have mapped the largest known deep-sea coral reef off the US Atlantic coast, stretching about 310 miles from Florida to South Carolina.
- Unlike tropical coral reefs, deep-sea coral must filter food particles from the water for energy.
- The newly discovered reef, which provides habitat for various marine species, has been called "breathtaking in scale" and covers nearly three times the size of Yellowstone National Park.
- A coral reef is a complex underwater ecosystem made up of colonies of coral polyps held together by calcium carbonate. Coral reefs are often called the "rainforests of the sea" and support about 25% of all known marine species
- Deep-sea corals are also called cold-water corals.
- They don't rely on photosynthesis because they're living in the dark.
- Instead, they use the tentacles on their polyps to filter food out of the surrounding waters.

## Lake Retba

- Lake Retba is also known as Lac Rose the Pink Lake.
- It is located north of the Cap Vert peninsula of Senegal, northeast of Dakar
- The lake is isolated from the sea by sand dunes.
- Its fresh water comes from the seasonal water table in the dunes, which are higher than the lake.
- Thus, the sea provides most of the lake's water and all of its salt.
- The Pink Lake is one of the main tourist destinations in the Dakar region, primarily because of the pink colour of its waters.
- The pink coloration is due to the proliferation of halophilic green algae (living in a salty environment), *Dunaliella salina*, which contain red pigments.
- The algae is associated with halophilic bacteria of the genus *Halobacterium*.

## Nilgiri Biosphere Reserve (NBR)

- Nilgiri Biosphere Reserve (NBR) is located in the Nilgiri Mountains of the Western Ghats.
- It encompasses parts of Tamil Nadu, Kerala, and Karnataka.
- It was the first biosphere reserve in India, established in 1986.



- The total area of the reserve is 5,520 sq. km. It is the largest protected forest area in India.
- The Mudumalai Wildlife Sanctuary, Wyanad Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, Mukurthi National Park, and Silent Valley are the protected areas present within this reserve.
- It harbours a wide spectrum of ecosystem types, such as tropical evergreen forests, Montane sholas and grasslands, semi-evergreen forests, moist deciduous forests, dry deciduous forests, and thorn forests.
- The annual rainfall of the reserve ranges from 500 mm to 7000 mm, with temperatures ranging from 0°C during the winter to 41°C during the summer.
- It is India's first biosphere reserve under UNESCO's Man and the Biosphere Programme.

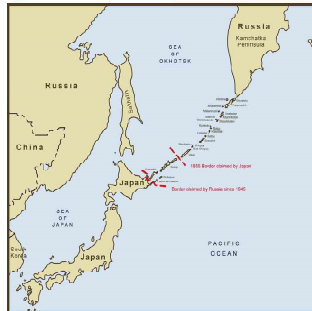
# LOCATION IN NEWS

## Salton Sea

- Salton Sea is a shallow, saline lake located in the lower Colorado Desert, southern California.
- It is a geological depression tucked between mountain ranges and lying below sea level.
- The Salton Sea is an important stopping point for migratory waterfowl and serves as a critical habitat for birds moving south to Mexico and Central America.
- The U.S. Department of Energy recently discovered the world's largest Lithium reserve beneath California's Salton Sea.

## Kuril Islands

- The Kuril Islands stretch from Japan's Hokkaido to Russia's Kamchatka Peninsula, separating the Okhotsk Sea from the North Pacific Ocean.
- They are part of the Pacific's Ring of Fire, with over 100 volcanoes, 35 active, and numerous hot springs.
- The Southern Kuril Islands are disputed between Russia and Japan.
- The islands have been under Russian administration since their 1945 invasion by the Soviet Union near the end of World War II.
- Japan claims the four southernmost islands, including two of the three largest (Iturup and Kunashir), as part of its territory, as well as Shikotan and the unpopulated Habomai islets, which has led to the ongoing Kuril Islands dispute.
- The disputed islands are known in Japan as the country's Northern Territories.



## Cabo Verde

- Cabo Verde has become the third country to acquire the status in the global health organisation's African region.
- The country has now joined Mauritius and Algeria, who were certified in 1973 and 2019, respectively.

- Cabo Verde is also known as Cape Verde which comprises a group of islands that lie off the west coast of Africa.



- It is located nearby Senegal and is the nearest point on the continent.
- This volcanic archipelago includes ten islands and five islets, divided into the windward (Barlavento) and leeward (Sotavento) groups.
- Generally moderate, the climate is characterized by stable temperatures with extreme aridity.
- The terrain of the Cabo Verde islands varies from the geologically older, flatter islands in the east and the newer, more mountainous islands in the west.
- The World Health Organization (WHO) has certified Cabo Verde (also known as Cape Verde) as a malaria-free country.

## Baltic Sea

- The Baltic Sea is an arm of the North Atlantic Ocean. It is bound by the Scandinavian Peninsula, the mainland of Northern Europe, Eastern Europe and Central Europe, and the Danish islands.
- Surrounded by countries: Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Finland and Sweden.
- It is connected to St. Petersburg by the Gulf of Finland.
- The Gulf of Riga is located between Estonia and Latvia.



## Timor-Leste

- It is situated 550 km north of Australia, it is the smallest and more eastern island of the Malay archipelago.
- Capital : Dili
- It is the only Portuguese speaking country independent nation in Asia



- North and South costs are divided by mountain ranges.
- Most elevated point is the Ramelau with 2972 m.
- Vegetation characterized by the abundance of Teak trees, sandal trees, coconuts and eucalyptus.

### Belgorod Region

- It is situated in the centre of the European part of Russia, on the southern and southeastern slopes of the Central Russian Upland.



- It is one of Russia's successfully developing industrial and agricultural regions.
- It borders on the Kursk and Voronezh regions, the Lugansk People's Republic.
- It also shares a state border with Ukraine.
- The region is crisscrossed with rivers.
- The largest rivers are the Psjol, Seversky Donets, Vorskla, Oskol, Tikhaya Sosna and Valui.
- The region has a moderate continental climate with hot summers and relatively cold winters.

### Aigai

- The city of Aigai was the ancient first capital of the Kingdom of Macedonia.
- It was discovered in the 19th century near Vergina, in northern Greece.

- The most important remains are the monumental palace, lavishly decorated with mosaics and painted stuccoes, and the burial ground.



- Alexander the Great was crowned in the ancient Palace of Aigai.
- It was built by Philip II, the father of Alexander the Great, the tombs of Philip and other Macedonian kings are nearby.
- After the assassination of his father, Alexander was crowned at the palace in 336 BC .
- The palace and the nearby tombs are listed as a World Heritage Site by UNESCO.

### Okinawa

- Okinawa Prefecture is located in the eastern part of the Asian continent
- It is the southwestern most point of the Japanese archipelago.
- It is located between Taiwan and Kyushu, the southwestern-most of Japan's four main islands.
- Okinawa remains under Japanese administration today.
- Okinawa comprises 160 islands of varied sizes and enjoys warm and pleasant temperatures throughout the year.
- The warm Kuroshio Current flows through the clear ocean waters of Okinawa, creating an environment in which coral, fish, and other sea creatures thrive.
- It is the only region in Japan that is in the subtropical zone, and is blessed with a warm climate all year round.

# SPECIES IN NEWS

## Cigaritis meghamalaiensis



- Tamil Nadu have thrown up a new species of silverline butterflies.
- Cigaritis meghamalaiensis is the new species of butterfly.
- It has become the first butterfly species to be described from the Western Ghats in 33 years.
- The researchers had first come across the distinct species belonging to the Cigaritis genus in the high elevations of Periyar in Idukki in 2018.
- Further explorations have revealed the species to be confined to the Meghamalais and the adjoining Periyar Tiger Reserve.
- There are seven species of Cigaritis in the Western Ghats, viz., C. vulcanus, C. schistacea, C. ictis, C. elima elima, C. lohita lazularia, C. lilacinus, and C. abnormis. Of these, all except C. lilacinus have been reported from the southern Western Ghats.

## Green Honeycreeper

- Ornithologists in Colombia recently photographed a wild green honeycreeper with



distinct half-green, or female, and half-blue, male, plumage.

- This distinct honeycreeper discovered had male plumage on one half of its body and female coloring on the other.
- This differs from the typical males of this species, which are bright blue with a black

head, and the females, which are grass-green all over.

- The rare phenomenon is scientifically known as bilateral gynandromorphic.
- It arises from an error during female cell division to produce an egg, followed by double-fertilization by two sperm.
- Green Honeycreeper is a small bird in the tanager family.
- Scientific Name: Chlorophanes spiza
- Conservation Status
  - IUCN Red List: Least Concern

## Polygonum Chaturbhujam

- New plant species named Polygonum Chaturbhujam has been discovered at Gol Pahadi island of PTR.



- It is an herb.
- Six plant species endemic to India have also been found in Pench.
- They are Aegineta indica, Boerhavia crispa, Habenaria gibsonii var foetida, Iphigenia pallida, Petalidium barlerioides and Barleria gibsonii.
- Pench Tiger Reserve is located in the southern reaches of the Satpura hills in the Seoni and Chhindwara districts in Madhya Pradesh and continues in Nagpur district in Maharashtra as a separate Sanctuary.

## Northeast African Cheetah

- It is found in the Horn of Africa.



- It is also known as the Sudan cheetah.
- This subspecies is more closely related to the Southern African cheetah than to Saharan cheetah populations.



- The subspecies cubs are being heavily trafficked across the Red Sea to Arab countries like Saudi Arabia, the United Arab Emirates and Yemen.
- Conservation status
  - IUCN: Vulnerable

### Pallas fish eagle

- Pallas fish eagle is also known as Pallas's sea eagle or band-tailed fish eagle, is a large, brownish sea eagle.



- It can be seen near lakes, marshes and large rivers, from lowlands to 5,000 metres of elevation.
- It feeds primarily on fish, but many other prey are part of its diet.
- It is found in east Palearctic in Kazakhstan, Russia, Tajikistan, Turkmenistan, Uzbekistan, Mongolia, China, India, Nepal, Bangladesh and Myanmar.
- It is partially migratory.
- Conservation status
  - IUCN Red List: Endangered

### Hog deer

- It is a solitary creature but sometimes spotted feeding in small groups in open fields when food there is plentiful.



- For the most part it is sedentary and does not migrate.
- Males tend to be territorial and mark their territory with glandular secretions.
- This species exhibits sexual dimorphism. The females are slightly smaller than males and lack antlers.

- It has a native geographic range throughout India, including the Himalayan foothills and Southeast Asia.
- Humans have introduced free-ranging populations of this deer in Sri Lanka, Australia and the United States, including Texas, Florida, and Hawaii.
- It appears to prefer dense forests; however, they are often observed in clearings, grasslands and occasionally wet grasslands.
- This variation is usually associated with time of year and food distribution.
- Conservation status
  - IUCN: Endangered
  - Wildlife Protection Act 1972: Scheduled I

### Eucalyptus Snout Beetle

- It is a leaf-feeding beetle that is a major defoliator of eucalypts.



- It is also known as eucalyptus weevil.
- The pest is indigenous to Australia but occurs in many countries throughout the world where eucalypts are grown.
- The beetle feeds on leaves, buds and shoots, resulting in stunted growth and deflation and causing heavy losses.
- It can cause damage over vast areas as it has a great flight capability and gets transferred with transport of forest products.
- The pest is mainly controlled with the help of micro-wasps *Anaphes* spp an expensive solution.
- This led a team of scientists to look for naturally occurring pathogenic fungi to tackle the problem.

### Himalayan Wolf

- Himalayan Wolf has been assessed for the first time in the International Union for Conservation of Nature (IUCN)'s Red List and categorised as 'Vulnerable'.



- The Himalayan Wolf (*Canis lupus chanco*), a prominent lupine predator found across the Himalayas.

- It is also called as Tibetan wolves, which live at more than 4,000 metres altitudes are genetically distinct from grey wolves.
- Living at such high altitudes, these wolves have genetically adapted themselves to live in low oxygen (hypoxic) conditions.
- In China, the Himalayan wolf lives on the Tibetan Plateau in the provinces of Gansu, Qinghai, Tibet, and western Sichuan.
- In northern India, it occurs in the Union Territory of Ladakh and in the Lahaul and Spiti region in northeastern Himachal Pradesh.
- Conservation status
  - IUCN: Vulnerable
  - CITES: Appendix I
  - Wildlife Protection Act, 1972: Schedule I

### Sinomicrurus gorei

- Researchers from Mizoram University's zoology department have discovered a new species of coral snake in Mizoram.
- New coral snake species has been named *Sinomicrurus gorei* after British Indian doctor Gore.
- The reptile is locally known as 'Rulmihna' due to its striking resemblance to a Mizo traditional amber necklace called *lihna*.
- There are a total of nine species of *Sinomicrurus* coral snakes that have been discovered worldwide, and out of these, only one species called *Sinomicrurus maclellandi* is found in Northeast India.
- It has unique patterns and different scales, hemipenis, DNA, and skull.
- Until this research, *Sinomicrurus gorei* was considered the same species as *Sinomicrurus maclellandi* due to their close resemblance.
- The new study also revealed that while *Sinomicrurus maclellandi* can lay 6-14 eggs at a time, *Sinomicrurus gorei* lays up to three eggs.
- In Mizoram, *Sinomicrurus maclellandi* is primarily found in hilly or elevated areas, while *Sinomicrurus gorei* is found in both low-lying and hilly areas.



### Tibetan brown bear

- Tibetan brown bear, also known as the Tibetan blue bear, is one of the rarest subspecies of bears in the world and is rarely sighted in the wild.
- Scientific Name: *Ursus arctos pruinosus*
- It inhabits alpine forests, meadows, and steppes, close to the tree line.
- This rare bear is very different from the more commonly found Himalayan black bear in terms of its appearance, habitat, and behaviour.
- Conservation Status:
  - IUCN Red List: Least Concern
  - CITES: Appendix I
  - Wildlife Protection Act of 1972: Schedule II



### Pulikulam Cattle breed

- Pulikulam Cattle breed is a popular draught and game breed of Tamil Nadu.
- The cattle originated from Pulikulam; a village located in Sivaganga district of Tamil Nadu.
- It is also known as Palingu maadu, Mani maadu, Jallikattu maadu, Mattu maadu and Kilakattu maadu.
- These are maintained as migratory herds, and its draught and manure capabilities play a significant role in the rural livelihood of the communities rearing them for draught and organic agricultural production.
- This breed of cattle is famous for a local game called Jallikattu where bulls are used as a bull-taming sport.
- Pulikulam / Alambadi bulls are dark grey, almost black and cows grey or white.



### Gangetic Dolphin

- Gangetic dolphin Common Name: Susu
- Scientific Name: *Platanista gangetica gangetica*.
- Habitat: Ganges river dolphins once lived in the Ganges - Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh.



- The Ganges river dolphin can only live in freshwater.
- It is essentially blind and they hunt by emitting ultrasonic sounds.
- It has a sturdy, yet flexible, body with large flippers and a low triangular dorsal fin.
- Conservation status:
  - IUCN: *Endangered*
  - *Wildlife (Protection) Act: Schedule-I*
  - CITES: *Appendix*

### Andrographis theniensis

- Andrographis theniensis is a plant, which was named 'Andrographis theniensis' after the location (Theni).



- The new plant resembles Andrographis megamalayana.
- It has glabrous leaves and stems, a nine-veined lower lip, pale yellowish sparse hair on the middle lobe of the lower lip and yellow anther.
- Andrographis is a tropical Asian genus native to Bangladesh, India, Myanmar, Nepal, Sri Lanka and the West Himalaya.
- However, a majority of Andrographis taxa are distributed in southern India and Sri Lanka, particularly in Western and Eastern Ghats.
- There are nearly 25 Andrographis species in India.

- This genus is traditionally used to treat various ailments such as cold, cough, fever, jaundice, diarrhoea, cardiovascular and hepatic diseases in both codified and non-codified medicinal system.



### Agulhas Long-Billed Lark

- Agulhas long-billed lark Scientific Name: *Certhilauda brevirostris*.
- It is a small passerine bird.
- The Agulhas long-billed lark is only found in South Africa.
- It builds nests on the ground mainly in Renosterveld fynbos, a type of vegetation filled with grasses and wild spring flowers that is critically endangered by agricultural expansion.
- It is an endemic resident breeder in the Western Cape, South Africa.
- Its restricted range is centred on the Agulhas arable farmlands, from east of the Hottentots-Holland mountain range to Mossel Bay, and occupies a maximum of 15,000 km<sup>2</sup> (5,800 sq mi).
- It is long-tailed and has a longish curved bill.
- It has a streaked buff-grey head and back, and the closed wings are grey.
- The underparts are cream-coloured with dark streaking on the breast and flanks.
- Conservation status
  - IUCN: *Near-threatened*

# MISCELLANEOUS

## Litchi Cultivation

- The National Research Centre on Litchi (NRCL), has successfully expanded litchi cultivation to 19 states in India.
- Litchi cultivation for commercial production has commenced in states such as Andhra Pradesh, Tamil Nadu, Karnataka, Uttar Pradesh, Himachal Pradesh, and others.
- Litchi (*Litchi chinensis*) is a small, oval roundish fruit that is native to Southeast Asia.
- It is a member of the soapberry family (Sapindaceae) and is also known as lychee or lichee.
- Litchi is a sensitive fruit, influenced by temperature, rainfall, humidity, and soil conditions.
- The fruit primarily grows in the foothills of the Himalayas, with Bihar alone contributing nearly 40% of India's litchi production.



## New Epaulettes For Admirals : Indian Navy

- The design features an octagon, a golden navy button top, an Indian sword, a crossed telescope, and stars denoting ranks.
- The earlier epaulettes for the same ranks did have a red backing for the national emblem, but not an octagonal one. Moreover, the button at the top of the epaulette reflected the old crest of the Navy which had a fouled anchor a colonial era vestige.
- The old epaulettes carried a baton and a sword, but new ones carry an Indian sword and a telescope.
- The stars on the new epaulettes are also designed differently than the older ones.
- The new Navy button reflects the new crest, sans the fouled anchor which was a colonial era vestige.
- As per the Navy, the red octagon reflects the eight cardinal directions indicative of an all-round long-term vision.



- It is inspired by the new naval ensign that was unveiled last year and inspired from the Rajmudra of Maratha ruler Chhatrapati Shivaji Maharaj who had built the massive Maratha Navy which has a rich maritime legacy.

## New Chief of Material of the Indian Navy

- Vice Admiral Kiran Deshmukh assumed duties as the Chief of Material of the Indian Navy
- He took over from Vice Admiral Sandeep Naithani, who retired following 39 years of praiseworthy service spearheading the Navy's maintenance efforts.
- Vice Admiral Deshmukh graduated as an Engineer Officer from Mumbai's VJTI university in 1986.
- He holds a Master's in Engineering and is an alumnus of the Defence Services Staff College.
- The Admiral has served in various technical and staff roles involving ships, dockyards, headquarters and trial commands during his extensive naval journey.
- Vice Admiral Deshmukh oversaw critical milestones like the commissioning of India's first indigenous aircraft carrier and light combat aircraft's maiden launch from it.

## Nina Singh : First Woman Chief Of Industrial Security Force

- Senior Indian Police Service officer Nina Singh took charge as Director General of the Central Industrial Security Force (CISF)
- She became the first woman to head the specialized security organization and the 30th CISF Director General.
- The CISF is a specialized Indian federal police agency under the Home Ministry.
- It is one of the Central Armed Police Forces guarding key national infrastructure.
- The CISF provides security cover to over 356 industrial units and sites across India
- Nina Singh is a high-achieving 1989-batch officer from the Rajasthan cadre.

## Surya Namaskar : Gujrat Set a Guinness World Record

- Gujarat set a Guinness World Record with over 50,000 people performing 'Surya Namaskar' simultaneously at 108 venues.
- The main event took place at Modhera Sun Temple in Mehsana

- Surya Namaskar also known as Sun Salutation, is a yogic practice that involves a series of 12 postures or asanas.
- The practice is said to pay respect to the sun.
- Regular practice of Suryanamaskar ensures proper and efficient functioning of not only the muscles and joints of the body but also stimulates the internal organs.
- Especially the stomach and other abdominal organs as it involves alternative stretching and compression at the abdominal area.

### Divya Kala Mela 2023-2024

- The Department of Empowerment of Persons with Disabilities (Divyangjan) is set to inaugurate the Divya Kala Mela 2023 in Bengaluru.



- Divya Kala Melas organized across India is part of the initiative to empower Persons with Disabilities (PwD) during the year 2023-2024.
- Around 100 Divyang artisans from 20 states/UTs will display their products in categories such as home décor, clothing, stationery, eco-friendly items, packaged food, organic products, toys, gifts, and personal accessories.
- The Mela featured cultural activities and performances by Divyangjan artists, providing a platform for marketing and showcasing their skills.

### Hattee Community

- Hattee community are a close-knit community who got their name from their tradition of selling homegrown vegetables, crops, meat and wool etc. at small markets called 'haat' in towns.
- Their homeland straddles the Himachal-Uttarakhand border in the basin of the Giri and Tons rivers, both tributaries of the Yamuna.
- This community's men generally don a distinctive white headgear during ceremonies, is cut off from Sirmaur by two rivers called Giri and Tons.



- Tons divide it from the Jaunsar Bawar area of Uttarakhand.
- The Hattees who live in the trans-Giri area and Jaunsar Bawar in Uttarakhand were once part of the royal estate of Sirmaur until Jaunsar Bawar's separation in 1815.
- They are governed by a traditional council called Khumbli.
- The two Hattee clans, in Trans-Giri and Jaunsar Bawar, have similar traditions, and inter-marriages are common.
- The Himachal Pradesh state government has issued notification to give Scheduled Tribe (ST) status to the Hattee community of Trans-Giri area of Sirmaur district.

### Indian Cities Nominated For Wetland City Tag

- India has submitted nominations for three cities – Indore, Bhopal and Udaipur – to receive the tag of International Wetland City under the Ramsar Convention.
- The wetlands near the three nominated Indian cities sustain local populations. Indore has the Sirpur Ramsar wetland site, Bhopal has the Bhoj Ramsar wetland, and Udaipur has numerous scenic lakes that attract tourists.
- Conserving these vital urban wetlands through appropriate policies and citizen participation makes the cities eligible for the Ramsar tag.
- It demonstrates their commitment to wise use of wetlands for current needs and future sustainable development.
- The wetland city accreditation also provides international recognition for conservation efforts by the municipal authorities.



### Similipal Kai Chutney

- The Similipal kai chutney made with red weaver ants by the tribal people of Odisha's Mayurbhanj district (Odisha) received the geographical identity tag.
- Similipal Kai Chutney is popular in Mayurbhanj region for its healing properties and also deemed important for nutritional security of the tribal people.
- Many indigenous people from Mayurbhanj district venture into nearby forest to collect kai pimpudi (red weaver ant).

- Around 500 tribal families have been eking out a living by collecting and selling these insects and a chutney made with them.
- The scientists analysed the red weaver ants and found it contains valuable proteins, calcium, zinc, vitamin B-12, iron, magnesium, potassium, sodium, copper, amino acids, among others. Consuming the species can help boost the immune system and prevent diseases.
- The tribal healers also prepare a medicinal oil in which they dip the ants along with pure mustard oil.
- After a month, this concoction is used as body oil for babies and to cure rheumatism, gout, ringworm and other diseases by the tribes.
- The local people also consume this to stay fit and strong.

### Fog Pass Devices

- Fog Pass Devices is a GPS based navigation device that helps the loco pilot to navigate during dense fog conditions.
- It provides on-board real-time information (Display as well as voice guidance) to Loco Pilots regarding location of fixed landmarks such as Signal, Level Crossing gate (Manned & Unmanned), Permanent Speed Restrictions, Neutral Sections etc.
- It displays approach indications of next three approaching fixed landmarks in geographical order accompanied with voice message approximately 500m on approach.
- General features of Fog Pass Device:
  - Suitable for all types of sections like single line, double line, electrified as well as non electrified sections.
  - Suitable for all types of electric and diesel locomotives, EMUs/MEMUs/ DEMUs.
  - Suitable for train speeds up to 160 KMPH.
  - It has built-in re-chargeable battery back-up for 18 hrs.

### India's Steel Sector : 2nd Largest Producer

- The Steel Sector has witnessed tremendous growth and India has emerged as a global force in steel production and the 2nd largest producer of steel in the world after China.
- India's steel output has been 125.32 million tonnes (MT) of crude steel and 121.29 MT of finished steel production in FY23.

- Steel is one of the widely used materials all over the world. The iron and steel industry is the bottom line producer industry.
- The steel industry plays a pivotal role in crucial sectors such as construction, infrastructure, automobile, engineering, and defense.
- Steel is a key sector for the Indian economy (responsible for 2% of the country's GDP in FY 21-22).
- India's major steel-producing states include Odisha, which leads among all steel producing states, followed by Jharkhand and Chhattisgarh. Karnataka, Maharashtra, Gujarat, and West Bengal also play crucial roles.

### Tropical Cyclone: Alvaro

- Tropical Cyclone Alvaro made landfall in southwest Madagascar on January 1st 2024, becoming the first cyclone to impact the island nation in the ongoing 2023-2024 cyclone season for the southwest Indian Ocean region spanning late October to May.
- Cyclone Alvaro has affected over 16,100 people so far with at least 5 reported dead and 8400 displaced in the southern African country known for vanilla and lemur populations.
- The actual death toll could likely be higher.
- Cyclone Alvaro has hit provinces like Atsimo-Andrefana in southwestern Madagascar which face immense flooding challenges during heavy rains, hampering evacuation and drainage towards the sea.



### Rejupave Technology

- Rejupave Technology is developed by CSIR-Central Road Research Institute (CSIR-CRRI).
- It is beneficial in constructing high-altitude bituminous roads at low and sub-zero temperature conditions.
- This technology brings down the production and rolling temperature of bituminous mixes by 30 degrees Celsius to 400 degrees Celsius with negligible heat loss in the bituminous mix during transit, despite long haulage time amid snowfall.
- This technology's asphalt modifier is a bio-oil-based product, which significantly lowers

the heating requirement of bituminous mixes besides preserving the bituminous mix temperature during transit.

- Rejupave asphalt modifier in cold climatic regions will have improved long-term durability and better resistance to thermal cracking under low-temperature conditions.
- It also brings down the greenhouse gas emissions in the pristine eco-sensitive mountainous environment of Arunachal Pradesh.

### Newly GI Tagged products from Odisha

- Kapdaganda Shawl
  - It is woven and embroidered by the women of the Dongria Kondh tribe, a particularly vulnerable tribal group (PVTG) in the Niyamgiri hills in Odisha's Rayagada and Kalahandi districts.
  - The shawl reflects the rich tribal heritage of the Dongria Kondhs.
- Lanjia Saurpa Painting
  - It is one of the oldest tribal art forms, is also known as Idital.
  - The artworks are famous for their beauty, aesthetics, ritualistic association and iconography.
  - It belongs to the Lanjia Saura community, a PVTG largely residing in the Rayagada district.
- Koraput Kala Jeera Rice
  - The black-coloured rice variety, also known as the 'Prince of Rice', is famous for its aroma, taste, texture and nutritional value.
  - As the rice grains resemble cumin seeds, it is also called Kala Jeera.
  - Its consumption helps in increasing haemoglobin levels and improves metabolism in the body.
- Nayagarh Kanteimundi Brinjal
  - It is known for its prickly thorns on the stems and the whole plant.
  - The green and round fruits contain more seeds as compared to other genotypes.
  - The plants are resistant to major insects and can be grown with minimal pesticide.

- Odisha Khajuri Guda (Jaggery)
  - It is a natural sweetener extracted from date palm trees and has its origin in the Gajapati district.
  - Traditionally, the jaggery is prepared in a trapezoidal form called 'Patali Gur' and is organic by nature. It is dark brown and has a unique taste.
- Dhenkanal Magji
  - It is a type of sweet made from cheese from buffalo milk, with distinct characteristics in terms of appearance, taste, flavour, shape, and size.

### Chandubi Festival

- Chandubi Festival is organised every year for five days starting from the first day of the New Year along the Chandubi lake, which is situated in the state of Assam.
- The main attractions of the Chandubi festival are the local folk culture, ethnic cuisine, local handloom and dresses, boating, etc.
- The major aim of the Chandubi Festival is to promote eco-tourism in this biodiversity hotspot of Assam.
- Preserving the waterbody, the water level of which has rapidly been lowering over the years, has been the motive for organising the festival every year.
- The festival has been providing an opportunity to generate livelihood to different tribes – Rabhas, Garos, Gorkhas and tea tribes – living in the area by selling different food items and homemade beverages, and traditionally woven attire.



### Camptothecin : Anti-Cancer Drug

- Researchers at the Indian Institutes of Technology Madras and Mandi have metabolically engineered *Nothapodytes nimmoniana* plant cells to increase production of anti-cancer drug camptothecin (CPT).
- Camptothecin is an important anti-cancer drug lead molecule for high-value drugs like Topotecan and Irinotecan.
- It is a potent topoisomerase I inhibitor extracted mainly from – *Camptotheca acuminata* (native to Eastern Asia) and *Nothapodytes nimmoniana* (native to India).

- It is majorly produced in the Southeast Asian region, with the plant being largely found only in China and India.
- However, the conjunction of climate change and extensive deforestation undertaken for CPT extraction has pushed these plants into the endangered species category.

### Lancet Study On Child Marriage In India

- Lancet study on child marriage in India highlighted an overall decrease in child marriage across the country.
- However, it emphasized that certain states, specifically Bihar (16.7%), West Bengal (15.2%), Uttar Pradesh (12.5%), and Maharashtra (8.2%), collectively contributed to over half of the total headcount burden of child marriages in girls.
- West Bengal region has experienced a substantial surge of 32.3% in the incidence of child marriages.
- This increase corresponds to over 500,000 additional girls getting married as children.
- As West Bengal's 105 cases under The Prohibition of Child Marriage Act (PCMA), 2006 in 2021 raise concerns.
- Because comparatively, states with smaller populations reported more cases.
- The Ministry introduced the Prohibition of Child Marriage (Amendment) Bill, 2021, proposing raising the age of marriage for women to 21, currently under Parliamentary review.
- The data suggests gaps in law enforcement and highlights the need for comprehensive strategies.

### Prasadam

- Prasadam is the country's first Healthy and Hygienic Food Street.
- It has been opened at Neelkanth Van, Mahakal Lok, in Ujjain, Madhya Pradesh.
- It will connect people in every corner of the country with pure and safe local and traditional food.
- Spread over 939 square metres with 19 shops, Prasadam offers convenient and culturally rich dining options for the 1-1.5 lakh devotees who visit the Mahakaleshwar Temple daily.



- The food street is designed to provide various facilities, including a kids' play area, drinking water facility, CCTV surveillance, parking, public conveniences, and seating spaces.

### World Employment And Social Outlook : Trends 2024

- The International Labour Organization (ILO) projects worldwide joblessness will increase through 2024 as declining economic growth combines with persistent inflation and stagnant wages to spur inequality – though some labor markets have proved resilient.
  - The ILO highlighted the sharp macroeconomic deterioration over the past year from cascading global crises.
  - Multiple major economies slowed considerably in 2023 amid lingering geopolitical tensions and aggressive central bank interest rates hikes aimed at taming inflation dampening industrial production, trade, and investment flows.
  - The global jobless rate dropped below pre-COVID levels to 5.1% with labor force participation also bouncing back close to early 2020 levels. But concerns remain over the quality of work available.
  - The ILO warned slowing economies will likely swing global unemployment back upward through 2024 even as structural weaknesses like skills gaps and inadequate social protection linger in many nations.
  - More people worldwide are also falling into working poverty subsisting on under \$2 daily as real wage growth trails behind consumer prices across most G20 economies except China and India.
  - The report found real wages in India showing “positive” improvement in 2022 versus 2021 exceeding the rate across all other G20 countries save Mexico.
  - Robust productivity expansion in the country likely helped boost wage growth compared to peers.
  - India still faces challenges ensuring broad-based social equality and labour rights.

### Global Risks Report 2024 : World Economic Forum

- The World Economic Forum (WEF) has warned that artificial intelligence (AI) driven misinformation and disinformation will pose great risks globally in 2023 and 2024.



- Highlights from the WEF Report:
  - Misinformation and disinformation are the biggest short-term risks highlighted in the report.
  - Extreme weather events and critical changes to Earth's systems like biodiversity loss are noted as the greatest long-term concerns.
  - Cost-of-living crisis and the interlinked risks of AI-enabled misinformation/disinformation and societal polarization dominate the global risks outlook for 2024.
  - With several live conflicts underway, underlying geopolitical tensions and weakening societal resilience risk creating conflict contagion, the report warns.
  - The survey for the report covered over 1400 global risk experts, industry heads and policymakers.
  - The report highlights the persisting cost-of-living crisis as a major near-term concern.
  - Rising prices, debt distress, and disparate social impact of the crisis risk fuelling political instability and unrest.
  - Policymakers need to balance measures to control inflation with targeted relief for vulnerable groups to maintain social cohesion, as per the WEF.

### Henley Passport Index 2024

- France, Germany, Italy, Japan, Singapore, and Spain hold the top spot as the world's most powerful passports, allowing visa-free entry to 194 global destinations.
- The top 10 is largely dominated by European countries.
- The average number of destinations travellers are able to access visa-free has nearly doubled, from 58 in 2006 to 111 in 2024.
- India's passport ranked 80th in the list, with citizens allowed to travel to 62 countries without a visa.
- Afghanistan occupies the bottom spot on the list, with access to just 28 countries without a visa.



- Syria, with visa-free access to only 29 destinations, holds the second-lowest position, followed by Iraq with 31 and Pakistan with 34.
- The United Arab Emirates was the fastest climber over the past decade, jumping to 11th place and offering access to 183 destinations without a visa.

### Atal Setu Nhava Sheva Sea Link

- The Prime Minister of India inaugurated the Mumbai Trans Harbour Link (MTHL) officially known as Atal Setu Nhava Sheva Sea Link, a monumental 22 km sea bridge.
- This mega-infrastructure project aims to revolutionize travel between Sewri and Chirle, promising a significant reduction in travel time.
- **Key Highlights of MTHL:**
  - Atal Setu is the longest bridge in India and also the longest sea bridge in the country.
  - The bridge is about 21.8 km long six-lane bridge having about 16.5 km length over sea and about 5.5 km on the land.
  - The bridge has been named after former prime minister Atal Bihari Vajpayee.
  - The bridge originates from Sewri in Mumbai and ends at Nhava Sheva in Uran taluka in Raigad district.
  - The project is financed by the Japan International Cooperation Agency (JICA), covering 80% of the total project cost, while the remaining portion is shared between the state and central governments.

### Thylakoid Membranes

- Researchers at the University of Liège, Belgium have identified thylakoid microstructures in fossil cells that are 1.75 billion years old.
- Thylakoids are little pouches located in the chloroplasts of plants.
- They store chlorophyll, the substance in plants that reacts to sunlight and triggers photosynthesis.
- These membranes are dense, mostly galactolipid, protein-containing bilayers in which photosynthesis occurs in photosynthetic organisms.
- They are found in ancient, light-sensitive bacteria called cyanobacteria.

- The cyanobacteria multiplied in the oceans billions of years ago, and are believed to be responsible for the vast stores of oxygen that are found in the atmosphere and thus, a precursor to life.
- It is now believed that thylakoid membranes in cyanobacteria were what made them capable of using sunlight to create energy and release oxygen.

### Gangireddu Melam

- Gangireddu Melam, a traditional folk performance associated with the Sankranti harvest festival in Andhra Pradesh.
- The bulls, adorned with colorful flowers and garments is the central motif of the dance.
- The performance also incorporates elements of local folklore and storytelling, showcasing the region's rich cultural heritage.
- The harvest festival of 'Sankranti' is celebrated in Andhra Pradesh and Telangana for three days as Bhogi, Sankranti, and Kanuma.
- Sankranti marks the first day of the sun's transit into the Makara, marking the end of the winter solstice and the start of longer days.



### Kalaram Mandir

- Kalaram temple derives its name from a black statue of the Lord Kala Ram translates literally to "Black Ram".
- It was built in 1792 with the efforts of Sardar Rangarao Odhekar.
- It is located on the banks of Godavari in the Panchavati area of Nashik, Maharashtra.
- The sanctum sanctorum has statues of Ram, Sita, and Lakshman, and a black idol of Hanuman at the main entrance.
- The main temple has 14 steps, which represent the 14 years of Ram's exile.
- It has 84 pillars, which represents the cycle of 84 lakh species that one has to complete in order to be born as a human.



### Koraput Kala Jeera Rice : GI Tag

- Koraput Kala Jeera Rice is grown in Koraput district's Tolla, Patraput, Pujariput, Baliguda, and Mohuli areas.

- It is called the Prince of Rice.
- It is an aromatic variety of rice.
- It is popular for its black colour, good aroma, taste, and texture.
- The black-coloured rice variety, is famous for its aroma, taste, texture and nutritional value.
- Tribal farmers of the Koraput region have preserved the rice variety for around 1,000 years.
- As the rice grains resemble cumin seeds, it is also called Kala Jeera.
- Consumption of the rice variety helps in increasing haemoglobin levels and improves metabolism in the body.
- This fragrant grain has antispasmodic, stomachic, carminative, antibacterial, astringent, and sedative

### Kachchhi Kharek: GI Tag

- Kachchhi Kharek, the indigenous variety of dates of Kutch, has become the second fruit of Gujarat to get a geographical indication (GI) tag from the Controller General of Patents, Designs and Trade Marks (CGPDT) of India.
- The presence of dates in Kachchh (Kutch) is believed to be around 400-500 years old.
- It is believed that date palm groves along the north-western border of India have developed from the seeds thrown by the settlers, who used to visit Middle-East countries for Haj.
- It is also probable that the Arab gardeners working in the palaces of the former rulers of Kachchh might also have contributed to the import of the date seeds and offshoots from Arab countries.
- Dates grown in Kutch are harvested at the khalal stage, the stage when fruits have matured, accumulated sucrose, and have turned red or yellow but are still crisp.
- The Kutch date season typically commences on June 15 each year, and the trees are known for their tolerance to salinity and adaptability to extreme drought and heat conditions.
- In other countries, they are allowed to ripen further till they become soft and dark brown or black in colour.
- Kachchh is the only place around the globe where fresh dates are economically cultivated, marketed, and consumed.

### Operation Amrith

- The Kerala Drug Control Department has initiated Operation Amrith (Antimicrobial Resistance Intervention For Total Health) to curb the overuse of antibiotics in the state.

- Pharmacies are required to maintain accurate records of antibiotic sales, display posters stating ‘antibiotics not sold without doctor’s prescription,’ and comply with prescription regulations.
- Operation Amrith aligns with Kerala’s Anti-Microbial Resistance Strategic Action Plan (KARSAP), reflecting a multi-sectoral approach to combat antimicrobial resistance (AMR).
- The state has implemented various initiatives, including the Antibiotic Literate Kerala Campaign, block-level AMR Committees, and the Kerala Antimicrobial Resistance Surveillance Network (KARS-NET) for surveillance.
- The move aims to raise awareness about AMR, ensure responsible antibiotic use, and prevent the spread of drug-resistant infection



### Excavation At Vadnagar

- A joint study by the Indian Institute of Technology (Kharagpur) and Archaeological Survey of India (ASI) has found evidence of cultural continuity in Vadnagar, Gujarat, even after the Harappan collapse.
- The study challenges the notion of a Dark Age by providing evidence of cultural continuity in Vadnagar even after the collapse of the Harappan civilization.
- The study reveals evidence of a human settlement in Vadnagar dating back to as old as 800 BCE.
- This places the settlement in the late-Vedic/pre-Buddhist Mahajanapadas or oligarchic republics period.
- The rise and fall of different kingdoms over a 3,000-year period, as well as recurrent invasions by Central Asian warriors, are suggested to be driven by severe changes in climate, such as variations in rainfall or droughts.
- Vadnagar is described as a multicultural and multireligious settlement that included Buddhist, Hindu, Jain, and Islamic influences.
- The excavation uncovered seven cultural stages (periods), including Mauryan, Indo-Greek, Indo-Scythian, Hindu-Solankis, Sultanate-Mughal, and Gaekwad-British colonial rule, up to the present day.

### Farsi Language : One Of The Classical Languages

- The External Affairs Minister recently announced that the Government of India has decided to include Farsi (Persian) as one of the classical languages in India under the New Education Policy.
- Farsi, also known as Persian Language, is the most widely spoken member of the Iranian branch of the Indo-Iranian languages, a subfamily of the Indo-European languages.
- It is the official language of Iran, and two varieties of Persian known as Dari and Tajik are official languages in Afghanistan and Tajikistan, respectively.
- Significant populations of Farsi speakers can be found in other Persian Gulf countries (Bahrain, Iraq, Oman, Yemen, and the United Arab Emirates), as well as large communities in the US.
- It has about 62 million native speakers, ranking it among the world’s 20 most widely spoken first languages.
- Farsi in Iran is written in a variety of the Arabic script called Perso-Arabic, which has some innovations to account for Persian phonological differences.
- This script came into use in Persia after the Islamic conquest in the seventh century.
- Its relatives are the languages of northern India and, more distantly, the major European languages including English.

### Nayagarh Kanteimundi :GI Tag

- Nayagarh Kanteimundi Brinjal is known for its prickly thorns on the stems and the whole plant.
- The green and round fruits contain more seeds as compared to other genotypes.
- It is famous for its unique taste and relatively short quick cooking time.
- The plants are resistant to major insects.
- They can be grown with minimal pesticide.
- It is being widely cultivated in Nayagarh district of the state.
- The growers are getting a yield of up to 200 quintals per hectare and selling at around Rs 60 per kg.



- Historical records also suggest that the locals got the brinjal from the hilly areas.
- They collected seeds from it and started raising seedlings nearly 100 years ago.

### **Annual Status Of Education Report (ASER) 2023**

- The 18th Annual Status of Education Report (ASER) 2023 titled 'Beyond Basics' was released by NGO Pratham, discussing the activities students are engaged in, their basic and applied reading and maths abilities and digital awareness and skills.
- **Highlights of the ASER 2023:**
  - Overall, 86.8% of 14-18-year-olds are enrolled in an educational institution.
  - However, there are notable differences visible by age, with 3.9% of 14-year-olds and 32.6% of 18-year-olds not enrolled.
  - Most students in the 14-18 age group are enrolled in the Arts/Humanities streams, with more than half (55.7%) in Class XI or higher studying in this stream.
  - There are gender differences, with fewer females (28.1%) enrolled in the Science, Technology, Engineering, and Mathematics (STEM) stream compared to males (36.3%).
  - Only 5.6% are taking vocational training or related courses. Vocational training is more prevalent among college-level students (16.2%).
  - About 25% of the youth cannot read a Class II level text fluently in their regional language.
  - While females (76%) outperform males (70.9%) in reading a Standard II level text in their regional language, males excel in arithmetic and English reading.
  - Only 57.3% can read sentences in English, and of those, almost three-quarters understand their meanings.
  - Close to 90% of all youth have a smartphone in the household, and 43.7% of males have their own smartphone compared to 19.8% of females.
  - Males generally outperform females in digital tasks, and performance on digital tasks improves with education level and basic reading proficiency.
  - Over 50% of students in the 14-18 age group face difficulties with elementary division problems, and around 45% struggle with tasks such as calculating the number of hours a child slept based on bedtime and wake-up time.
    - Inadequate foundational numeracy skills hinder youth proficiency in everyday calculations, including budget management, applying discounts, and calculating interest rates or loan repayments.
    - Almost 90% of Indian youth have access to a smartphone in their household and know how to use it. This indicates widespread digital connectivity among this demographic.
    - There is a significant gender disparity in digital literacy. Girls are reported to be less likely to know how to use a smartphone or computer compared to boys.
    - Males (43.7%) were more than twice as likely as girls (19.8%) to own their own smartphone.
    - There is a notable gender gap in smartphone ownership, with males being more than twice as likely as females to own their own smartphone.

# PRACTICE QUESTION

1. Operation Amrith recently seen in news is launched by which of the following state?  
(a) Kerala  
(b) Bihar  
(c) Karnataka  
(d) Delhi
2. Which of the following is the IUCN status of Gangetic Dolphin ?  
(a) Vulnerable  
(b) Endangered  
(c) ear threatened  
(d) Critically endangered
3. Lake Retba is located in which of the following nation?  
(a) South Africa  
(b) Coasta Rica  
(c) Senegal  
(d) Nigeria
4. Atal Setu Bridge connects which of the following?  
(a) Sewri and Pune  
(b) Pune and Chirle  
(c) Sewri and Nasik  
(d) Sewri and Chirle,
5. AI Odyssey recently seen in news is launched by  
(a) Microsoft  
(b) Google  
(c) Meta  
(d) Government of India
6. Exercise Desert Cyclone recently seen in news is the bilateral exercise between:  
(a) India and Saudi Arabia  
(b) India and UAE  
(c) India and Kuwait  
(d) India and Qatar
7. Kuril island often seen in news is the disputed region between  
(a) China and Japan  
(b) Russia and USA  
(c) Japan and Russia  
(d) Singapore and Japan
8. Drug Camptothecin is used to treat which of the following disease?  
(a) Malaria  
(b) AIDS  
(c) Tuberculosis  
(d) Cancer
9. One vehicle One FASTag initiative is launched by  
(a) National Highways Authority of India  
(b) Ministry of Road and Transport  
(c) Ministry of Industries and Commerce  
(d) Ministry of Home Affairs
10. Pench Tiger Reserve recently seen in news is located in  
(a) Bihar  
(b) Maharashtra  
(c) Madhya Pradesh  
(d) Karnataka

## ANSWER KEY

1	2	3	4	5
(a)	(b)	(c)	(d)	(a)
6	7	8	9	10
(b)	(c)	(d)	(a)	(b)

# TOPIC FOR THE MONTH

## DETAILED REVIEW ON CHILD MARRIAGES IN INDIA

*Child marriage can be described as a formal marriage or an informal union entered into by an individual before attaining the prescribed eligible age. United Nations Children's Fund (UNICEF) sees child marriage as a violation of human rights, as it compromises the development of girls and boys. Ending child marriage is therefore seen to be critical towards achieving the UN's Sustainable Development Goal (SDG) 5, which is to achieve gender equality and empower all women and girls by 2030. Specifically, SDG target 5.3 seeks to eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation. As per Indian law, the marriageable age is 21 for males and 18 for females.*

## HISTORICAL OVERVIEW

- **Ancient Period**
  - Vedic period witnessed prevalent child marriage.
  - Girls, 8-10 years old, married for daughter's security and lineage continuity.
- **Medieval Period**
  - Child marriage persisted and spread.
  - Marriage age for girls decreased to 7-8 years.
- **British Rule**
  - Officials attempted to curb it, faced cultural resistance.
  - Minimum marriage age raised to 12 via the 1929 Child Marriage Restraint Act, but was ineffective.
- **Post-Independence**
  - Legal age raised to 18 in 1976.
  - Unsuccessful due to poverty, lack of education, and cultural norms.
- **Current Scenario**
  - Legal age is 18, yet prevalent, especially in rural and tribal areas.
  - Around 25% of married women below 18, as per UNICEF.

## CHILD MARRIAGES IN INDIA

- According to National Family Health Survey-5 (NFHS-5) 2019-21, women in the age group of 20-24 years who were married before they turned 18, are 14.7% in urban and 27% in rural areas.
- Women aged 15-19 years who were already mothers or pregnant at the time of the survey were 3.8% (urban) and 7.9% (rural).
- Girl child marriages increased in six states, including Manipur, Punjab, Tripura, and West Bengal, largest absolute increase in headcount was observed in West Bengal.
- Eight states, including Chhattisgarh, Goa, Manipur, and Punjab, witnessed a rise in boy child marriages.
- Prevalence of girl child marriage decreased from 49 per cent in 1993 to 22 per cent in 2021, while that of boy child marriage came down from 7 per cent in 2006 to 2 per cent in 2021, they found.
- Child marriage numbers reduced the most between 2006 and 2016.
- According to the International Centre for Research on Women, India has the 14th highest rate of child marriage.

## **REASONS FOR CHILD MARRIAGE IN INDIA**

### **1. Patriarchal ideals**

- The primary cause of early marriage is the fervent desire to maintain a girl's virginity in order to retain the family's honour.
- A girl's prized possessions are her virginity and chastity. Because of the excessive value placed on virginity, society has developed a variety of strategies and protective measures to shield females from potential sexual abuse, including early marriage and isolating them from social activity.

### **2. Customs and Traditions**

- Traditions like dowry put a lot of stress on the family because the parents have to give a lot of money, jewellery, land etc. for their daughter to get married.
- Generally the amount of dowry rises with age of the girl, so families prefer to marry their girls young.

### **3. Poverty**

- Poor Families sell their children through marriage to pay off debts or to get out of the cycle of poverty.
- Child marriage makes families poorer because young girls who get married won't be educated or skilled enough to do well in the workforce.

### **4. Security**

- Parents often marry their daughters off young to secure a good future for them.
- Abuse, rape, and other crimes against girls, as well as extreme poverty, can make parents turn to child marriage as a way to protect their daughters.

### **5. Laxity in Implementation of Laws**

- Laws are not implemented stringently. In many cases the ages of the bride and groom aren't checked at the time of registration of marriage.
- Many child marriages aren't even registered.

## **IMPACT OF CHILD MARRIAGE**

### **1. Gender Inequality**

- Child marriage is often rooted in gender inequality, reinforcing traditional gender roles and norms.
- Boys can also be affected, as they may face pressure to assume adult responsibilities at an early age, impacting their own personal development and well-being.

### **2. Violence and Abuse**

- Lack of legal protection and social support may leave child brides trapped in abusive situations without recourse.

### **3. Reproductive Rights**

- Child brides may have limited control over their reproductive rights, including family planning and the number and spacing of their children.

### **4. Child Rights Issues**

- Children who are forced to get married young lose their rights including the right to an education, the right to be safe from physical and mental violence, injury, or abuse, among others.

### **5. Health Issues**

- According to NFHS-5, prevalence of child stunting is 35.5% in 2019-21.
- Most young brides don't know much about contraception and don't have easy access to reproductive health services leading to premature pregnancy.
- They get pregnant at a younger age and have more than one child before their mind and bodies are ready.
- Girls under 15 are five times more likely to die during childbirth or pregnancy. The leading cause of death for girls ages 15 to 19 around the world is pregnancy-related deaths.

### **6. Infant Mortality**

- Babies born to mothers younger than 20 have almost 75% higher death rates than babies born to mothers older than 20 years.
- The children who do make it are more likely to be born pre-mature and with a low birth weight.

## 7. Illiteracy

- Child brides are often taken out of school and not allowed to get further education.
- Research shows that child marriage and pregnancy are the biggest factors that keep girls from going to school.

## 8. Intergenerational Cycle of Poverty

- Child marriage negatively affects the economy and can lead to an intergenerational cycle of poverty.
- Girls and boys married as children more likely lack the skills, knowledge and job prospects needed to lift their families out of poverty.
- Early marriage leads girls to have children earlier and more children over their lifetime, increasing economic burden on the household.

### **LAWS BY GOVERNMENT TO PREVENT CHILD MARRIAGES IN INDIA**

#### 1. Child Marriage Restraint Act of 1929

- It is also known as the Sarda Act. It was a law enacted to restrain the practices of Child Marriage.
- Its main goal was to eliminate the evils placed on young girls who could not handle the stress of married life and to avoid early deaths.

#### 2. Child Marriage Restraint (Amendment) Act, 1978

- This law raised the age of marriage for girls from 14 to 15.
- However, it failed to make a significant impact on curbing child marriages.

#### 3. Child Marriage Restraint (Amendment) Act, 1984

- This law further increased the minimum age of marriage for girls to 18 years, bringing it to par with boys. However, implementation remained weak.

#### 4. Child Marriage Restraint (Amendment) Act, 2006

- This law increased the punishment for solemnizing or conducting child marriages. Offenders could now be imprisoned for up to 2 years and fined Rs.1 lakh.

#### 5. Prohibition of Child Marriage Act, 2006

- This is the current law for preventing child marriages in India.
- It defines a child as a male under 21 years and a female under 18 years.
- Key provisions of the PCMA 2006:
  - Defining child marriage and making it voidable at the option of the contracting party.
  - Imprisonment of up to 2 years and fine up to Rs.1 lakh for solemnizing a child marriage.
  - Officials are authorized to stop and prevent child marriages by issuing notices to the parties involved.
  - Child marriages can be rescinded by the contracting party within 2 years of attaining a majority.
  - However, the lack of implementation and awareness of this Act has affected its effectiveness in curbing child marriages.

### **MEASURES TAKEN BY GOVERNMENT OF INDIA TO ELIMINATE CHILD MARRIAGE**

#### 1. National Commission for Protection of Child Rights (NCPCR)

- It undertakes various activities and programmes from time to time with concerned stakeholders/ organizations such as representatives of Child Welfare Committees (CWC), Police, Women and Child Development Department on the issue of child marriages and related matters.

#### 2. Support Services and Helplines

- Government of India has introduced CHILDLINE 1098, a 24X7 telephone emergency outreach service for children in crisis, which responds with suitable interventions to calls for any form of assistance which a child requires, including for prevention of child marriages



### 3. **Beti Bachao Beti Padhao (BBBP) Scheme**

- Launched in 2015, this national initiative focuses on improving the status of girls and addressing issues such as female foeticide, child marriage, and gender-based discrimination.

### 4. **Integrated Child Development Services (ICDS)**

- The ICDS program, among other objectives, aims to improve the nutritional and health status of children, including those at risk of child marriage.
- It provides a range of services, including health check-ups, immunization, and nutrition support, to address the overall well-being of children.

### 5. **National Plan of Action for Children 2016**

- The National Plan of Action for Children outlines the government's commitment to child welfare and includes strategies to prevent child marriages.

### 6. **Sarva Shiksha Abhiyan (SSA)**

- SSA is an ongoing program aimed at providing universal access to quality elementary education.
- By promoting education for all children, including girls, the government aims to address one of the root causes of child marriage – lack of education.

### 7. **Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (SABLA)**

- SABLA targets adolescent girls (11-18 years) and aims to empower them through education, life skills training, and nutrition support.
- By focusing on the holistic development of adolescent girls, the scheme aims to prevent early marriage.

## **WAY FORWARD**

1. **Policy Reforms:** Regularly review and update policies to address evolving challenges related to child marriages.
2. **Collaboration:** Collaborate with NGOs, community leaders, and international organizations to create a comprehensive strategy.
3. **Healthcare Support:** Ensure access to healthcare services and family planning education.
4. **Research and Monitoring:** Conduct research to understand the evolving nature of child marriages and monitor the effectiveness of interventions.
5. **Community Awareness:** Conducting awareness campaigns to educate communities about the harmful effects of child marriages.
6. **Economic Empowerment:** Implementing programs that address economic factors contributing to child marriages.

## **MAINS PRACTICE**

*What are the continued challenges for women in India against time and space?*

*(PVQ 2019)*



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