GS SCORE
An Institute for Civil Services

GS ANALYST
MONTHLY CURRENT AFFAIRS MAGAZINE

- ☑ **Coverage of Monthly topics for GS Paper 1,2 , 3 & 4**
- ☑ **Key Concepts & Prelims Specific Topics**
- ☑ **Questions for Answer Writing Practice**

PRELIMS
- Pulikali festival
- Odisha's Konark Wheel
- Shivaji's historic Wagh Nakh
- Pearl millet cultivation zones in India
- India-Bangladesh consensus to save
- Sundarbans

MAINS
- 'India or Bharat' canbe interchangeably used?
- African Union as a part of G20
- The New Delhi Declaration
- Vidya Samiksha Kendras
- Self-Regulatory Organisation for fintechs
- Invasive species threaten world's diversity
- Global Biofuels Alliance (GBA)
- Aditya L1 Mission

KEY CONCEPTS
- Gramodyog Vikas Yojana (GVY)
- Toda community
- First herpetofaunal survey
- Scrub Typhus
- Scarborough Shoal
- Atlas Mountains
- Rhinos
- Morocco earthquake

CONTEMPORARY ISSUE BASED ESSAY

MINDFUL MANIFESTO IS THE CATALYST TO A TRANQUIL SELF

— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CURRENT AFFAIRS MONTHLY

CONTENTS

(SEPTEMBER, 2023))

Section A [MAINS]

- ‘India or Bharat’ can be interchangeably used?
- Live-in relationship are not Criminalized: Delhi HC
- 43rd Association of South East Asian Nations (ASEAN) Summit
- African Union as a part of G20
- India-US Bilateral Talks on Trade Settlement
- India-Middle East-Europe Economic Corridor (IMEC)
- India-Canada Diplomatic Row
- The New Delhi Declaration
- Andhra Pradesh Reorganisation Act, 2014
- Panel to explore ‘One Nation, One Election‘
- Understanding Laïcité, the French principle of secularism
- Personalised Adaptive Learning (PAL) with AI
- Vidya Samiksha Kendras
- ‘Fraternity’ as enshrined in the Constitution
- Findings of the Parliament panel on Education
- Minor Irrigation Census (MIC) report
- Unemployment measurement varies for economies
- Centre seeks to relax angel tax
- Viability gap funding to promote battery energy storage system
- Self-Regulatory Organisation for fintechs
- Gresham’s law
- Invasive species threaten world’s diversity
- Rising Heat index in Iran
- Global Biofuels Alliance (GBA)
- U.N.’s Climate Ambition Summit (CAS)
- Aditya L1 Mission
- Genetic engineering gives mosquito control an upgrade
- IISc develops new nanoparticle for cancer treatment

'INDIA OR BHARAT' CAN BE INTERCHANGEABLY USED?

Context: An official invitation from President Droupadi Murmu to G-20 guests where Indian President was described as the "President of Bharat" has triggered speculation that the central government could officially change the name of "India" to "Bharat".

Background:

◈ The Constituent Assembly formed in 1949 debated on how India will be mentioned in **Article 1** at the time the Constitution was being drafted.

◈ Before the Constitutional Assembly, the country was known as **Bharat, India, and Hindustan.**

◈ The committee was divided into **two groups**, one portion preferred 'Bharat', and the other favoured 'India'.

◈ The Constituent Assembly then decided to use both the terms in the statement.

About:

◈ **Article 1** of the constitution mentions **India, that is Bharat**, shall be a **Union of States**.

◈ The article serves as a foundational statement that establishes India as a Union comprising individual state.

◈ It clarifies the name of the country in **both English (India) and Hindi (Bharat)** and sets the tone for the federal structure of the Indian state, where power is divided between the **central government** and the states.

Debate around 'Bharat' or 'India':

◈ The first debate on Article 1 was to begin on **November 17, 1948**. However, on the suggestion of **Govind Ballabh Pant**, the discussion on the name was postponed to a later date.

◈ On **September 17, 1949** Dr. B R Ambedkar presented to the House the final version of the provision, which included both 'Bharat' and 'India'.

◈ Several members expressed themselves against the use of 'India', which they saw as a reminder of the colonial past.

◈ "Bharat" is a term that resonates with many **Indian languages** and is viewed as more inclusive than "India," which is of **foreign origin.**

History of names denoting today's India:

● The roots of "**Bharat", "Bharata", or "Bharatvarsha**" are traced back to **Puranic literature**, and to the **epic Mahabharata.**

● The Puranas describe **Bharata** as the land between the "**sea in the south and the abode of snow in the north".**

● Bharata is also the name of the **ancient king of legend** who was the ancestor of the **Rig Vedic tribe** of the Bharatas, and by extension, the progenitor of all peoples of the subcontinent.

● The name **Hindustan** is thought to have derived from 'Hindu', the Persian cognate form of the Sanskrit '**Sindhu' (Indus),** which came into light with the **Achaemenid Persian** conquest of the Indus valley (northwestern parts of the subcontinent).

● By the time of the **early Mughals (16th century),** the name 'Hindustan' was used to describe the **entire Indo-Gangetic plain.**

● From the late **18th century** onwards, British maps increasingly began to use the name **'India', and 'Hindustan'.**

Arguments in favour of Bharat:

◈ "Bharat" emphasizes a sense of national pride and identity, distinguishing India from its colonial past when it was referred to as "India."

◈ Proponents of using "Bharat" argue that it has deep **historical and cultural significance**, tracing back to ancient Indian civilization. It is seen as a way to connect with **India's rich heritage and traditions.**

Arguments against the use of term 'Bharat':

◈ **Article 348(1) of the Constitution** states that all proceedings in the **Supreme Court and in every High Court** shall be in English language until **Parliament passes a law.**

◈ Any change of name of a country would require a constitutional amendment under **Article 368.**

◈ Former Chairman of the Parliamentary Standing Committee on Law and Justice mentioned that, an amendment would be required **only if the government insisted** on the use of any **one term or wanted to remove a particular term.**

◈ Critics of using "Bharat" contend that it may not be as recognizable internationally as "India."

  ➤ They argue that maintaining the name "India" **simplifies international communication and relations.**

◈ The use of "Bharat" may symbolize a more federal and **state-centric approach**, while "India" emphasizes the **unity of the nation**.

Do they can be used interchangeably?

◈ India, that is Bharat' written in Article 1 of the Constitution is **only descriptive** and the two cannot be used interchangeably. It will require amendments in the Constitution.

Who has the powers to change the names?

◈ India is our official name, and changing that will require a **Constitutional amendment**, requiring two-third majority votes from **both the Houses of Parliament**.

◈ Also changing of names does not touch upon the basic structure doctrine.

LIVE–IN RELATIONSHIP ARE NOT CRIMINALIZED: DELHI HC

Context: In a significant move, the Delhi High Court has noted that although live-in relationships are not legally recognized, they are not considered criminal, and therefore, courts cannot impose their moral judgments on consenting adults in such relationships.

Key-points from the Court's observation:

◈ Live-in relationship between **two consenting married adults**, who are married to different partners, has not been made criminal or legislated against.

◈ **Live-in relationships are not recognized as a legal union under any law in India**

◈ The parties herein have the right to determine their **own choices, life, and actions**, but at the same time, should remain **conscious of the repercussion** it invites from their partners and its effect on their marriage.

◈ Any court of law cannot impose their own perception of morality on individuals who are adults and make free adult choices if such choices are not illegal or an offence under the present framework of law.

Supreme Court's view:

◈ **Live-in Relationship as a Fundamental Right:** The Supreme Court has ruled that any couple living together for a long time will be presumed as legally married unless proved otherwise.

➤ So it is gradually being accepted especially amongst the young generation. As per the law,

'living together is not a crime, but it is part of the right to life'.

Why there is a need for regulations?

◈ The Court made its observation in a recent case where a woman made allegations pertaining to rape and sexual harassment against her live-in partner with whom she has been cohabiting for last five years.

➤ The case *prima facie* looks to be of a relationship gone sour.

◈ However, it also shows the vulnerable position of both the partners in case any of them demands justice where both the law and society are not very receptive of the live-in relationships.

Stakeholders involved:
- Male live-in-partner
- Female live-in-partner
- Police officials
- State Women Commission
- Society at large

Societal Dilemmas:

◈ Generally, live-in relationships are not favored in the Indian society.

◈ It is yet not being fully accepted in our culture and this leads to social rejection of the people involved, if the live-in relation does not work, it gets all the more difficult to re-enter into established institution of marriage, especially in the case of women because of the rejection and stigma associated with it.

Instances for safeguarding women:

◈ For the first time, the question of whether **live-in relationship** is a legal relationship came to the Supreme Court in the case of ***Badri Prasad v. Dy. Director of Consolidation***.

◈ In the present case the parties were living in a live in relationship for almost 50 years and the question before the court was whether their relationship be granted the same status which is granted to a married couple and the apex court's decision was in favour of the couple and the apex court granted legal status to their 50 year relationship.

◈ In the case of ***Indra Sarma v. VKV Sarma*** the Supreme Court held that if at any point any male who is not married lives with a women who is also not married and they also shared the same house then that will come under **section 2(f) of Domestic Violence Act** and if at any point of time domestic violence occurs then the aggrieved person can seek relief under the **chapter IV of the Domestic Violence Act.**

Related Laws:

◈ India's legal framework primarily recognizes traditional marriages governed by **personal laws**

3

and the **Special Marriage Act, 1954,** for interfaith or inter-caste marriages.

◈ However, there are some legal provisions and court judgments that indirectly impact live-in relationships.

◈ **Protection of Women from Domestic Violence Act, 2005**: This law can be used by women in live-in relationships to seek protection from physical, emotional, or economic abuse. It allows for the filing of complaints and obtaining restraining orders against the abuser.

◈ **Indian Penal Code (IPC):** Section 497 of the IPC (Adultery) was declared unconstitutional by the Supreme Court in 2018, which indirectly recognized the autonomy of married individuals in matters of relationships. It is essential to note that the IPC is a criminal law and not a law that explicitly recognizes or regulates live-in relationships.

◈ **Maintenance and Alimony**: Courts in India have occasionally ruled in favor of providing maintenance or alimony to partners in long-term live-in relationships, considering the principles of equity and justice.

◈ **Protection of Children's Rights**: In cases involving live-in couples with children, courts have ruled in favor of securing the rights and welfare of the child, including custody and financial support.

43RD ASSOCIATION OF SOUTH EAST ASIAN NATIONS (ASEAN) SUMMIT

Context: At the 43rd ASEAN Summit held recently in Jakarta, Indonesia, India emphasized a rules-based post-COVID world order, highlighting the importance of a free Indo-Pacific and Global South's voice.

About ASEAN:

◈ The **Association of Southeast Asian Nations (ASEAN)** is a regional grouping that aims to promote economic and security cooperation among its **ten members**: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

◈ **Establishment**: It was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the **founding fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore, and Thailand.**

◈ **Aim:** The motto of ASEAN is "**One Vision, One Identity, One Community".**

◈ **Secretariat:** The ASEAN Secretariat is in Jakarta, Indonesia.

◈ ASEAN countries have a total population of 662 million people and a combined gross domestic product (GDP) of $3.2 trillion as of 2022.

◈ ASEAN is considered one of the most influential groupings in the region.

◈ India including the **U.S., China, Japan, and Australia** are its **dialogue partners.**

Key points from the summit:

◈ India reaffirmed that ASEAN is the central pillar of **India's Act East Policy** and it fully supports ASEAN centrality and its outlook on **the Indo-Pacific.**

◈ India also mentioned the need for a **Code of Conduct for the South China Sea** should be effective and compliant with the **U.N. Convention on the Law of the Sea (UNCLOS).**

◈ India emphasized its **Look East policy**, as mentioned in the recent **East Asia Summit** held in July.

East Asia Summit is the premier forum in the **Asia-Pacific region** to deal with issues relating to security and defense. Since its inception in 2005, it has played a significant role in the strategic, geopolitical, and economic evolution of East Asia.

Points of discussion:

Connectivity between India and Southeast Asean nations:
- Bangladesh-China-India-Myanmar (BCIM)
- Kaladan Multi-Modal Transit Transport Project (KMMTTP)
- Mekong-India Economic Corridor (MIEC)

◈ India proposed a '**multi-modal connectivity and economic corridor'** linking Southeast Asia (SEA), India, West Asia, and Europe during the Asean-India Summit in Indonesia, as part of a **12-point plan** to enhance relations with ASEAN (Association of Southeast Asian Nations) economies.

◈ It also announced the opening of the embassy of India in **Timor-Leste** has also been announced by India.

  ▸ Timor-Leste is an observer in the ASEAN.

◈ India made comprehensive discussions, including in areas such as **connectivity, maritime cooperation, digital transformation, trade and the economy, environment, health, and traditional medicine.**

◈ In the food security minute, millets, and agenda of food security as well as the environment were made to focus.

◈ The two sides agreed to deepen their comprehensive strategic partnership with concrete actions through

practical implementation of the 'Plan of Action' to implement the ASEAN-India partnership for peace, progress and shared prosperity.

Significance of ASEAN for India:

❖ ASEAN-India dialogue relations started with the establishment of a sectoral partnership in 1992. This graduated to a full dialogue partnership in December 1995 and a summit-level partnership in 2002. The ties were elevated to a strategic partnership in 2012.

❖ **Trade relations**: The European Union (EU) is India's third largest trading partner, while India-ASEAN bilateral trade stood at 131.5 billion dollars in 2022-23.

❖ **India-Myanmar-Thailand Trilateral Highway**: Towards its east, India is part of a push to develop a **highway connecting the country to Myanmar and Thailand.**

  ➢ The **1,400-km highway,** first proposed in 2002, is expected to link India to the two SEA nations by land.

❖ **Potential market**: ASEAN constitutes the 3rd largest market in the world. This can help India utilize its export potential.

❖ **Convergence with Indo-Pacific strategy**: ASEAN is a crucial component of India's "Act East" policy and its "Indo-Pacific" strategy, reflecting the convergence of interests in the region.

❖ **Countering China's influence**: Strengthening relations with ASEAN countries can serve as a counterbalance to China's influence in the region.

❖ **Connectivity with North East**: Connectivity initiatives with ASEAN can boost economic development in India's northeastern states by positioning them as a hub for regional trade and commerce.

❖ **Important for rule-based order:** ASEAN plays a central role in promoting a rules-based security architecture in the Indo-Pacific region, which is essential for the region's stability and prosperity.

AFRICAN UNION AS A PART OF G20

Context: **With the negotiations among Sherpas' held recently, the African Union (AU) is set to join the G-20. Now, the 55-member AU will join the European Union as the only two regional bodies in the G-20.**

Background:

❖ India had written a letter to the G20 nations in

which he proposed that the African Union be given full, **permanent membership** of the bloc at the upcoming summit in New Delhi.

❖ Countries like **Germany, Brazil, and Canada** have also expressed their support for African Union membership to the G20.

❖ The G20 this year has also invited **nine non-member countries**, including B**angladesh, Singapore, Spain, and Nigeria,** and international organizations such as the **United Nations, World Health Organization, the World Bank, and the IMF** on the 9 and 10 September Summit.

About the African Union (AU):

❖ The African Union (AU) is a **continental body** consisting of the **55 member states** that make up the countries of the African Continent.

❖ In 1963, the **Organization of African Unity** was founded by the independent states of Africa.

❖ The organization aimed to promote cooperation between African states.

❖ The **1980 Lagos Plan of Action** was adopted by the Organization of African Unity. The plan suggested that Africa should minimize reliance upon the West by promoting intra-African trade.

❖ In 2002, the **Organization of African Unity** was succeeded by the African Union, which had as one of its goals to accelerate the "economic integration of the continent".

G20 Summit 2023:

● **Theme:** India's G20 theme is derived from the Sanskrit phrase "**Vasudhaiva Kutumbakam**" which translates to **"The World is One Family**".

● **Agendas:** Under India's presidency, the bloc has centered discussions around **more loans to developing nations from multilateral institutions, reforming international debt architecture, regulations on cryptocurrency and the impact of geopolitical uncertainties on food and energy security.**

India-Africa Relations:

❖ **Social Infrastructure**: The India-Africa social infrastructure (education, health, skills) cooperation is multidimensional, comprehensive, and involves national, state, and subnational actors working toward augmenting African institutional and individual capacities.

❖ **Common Geo-Political Interests**: India and Africa have common interests on international issues, UN reforms, counter-terrorism, peacekeeping, cybersecurity, and energy security.

Operation Sahayata 19

- India provides Humanitarian Assistance and Disaster Relief (HADR) support to Mozambique.

Operation Vanilla

- Indian Navy on January 28 launched **'Operation Vanilla'** in support of the national disaster in flood-hit Madagascar and diverted a large amphibious ship to provide assistance.

◈ **Economic Cooperation:** India's economic engagement with Africa is substantive.

➤ In the last decade and a half, trade between India and Africa has multiplied and diversified–bilateral trade of USD63.3 billion in 2018-19 made India the third-largest trading partner for the continent.

◈ **Support in Fight against COVID-19:** Under the e-ITEC initiative, India has shared Covid-19 management strategies, and training webinars exclusively to train healthcare professionals from Africa by Indian health experts.

➤ India is also sending consignments of essential medicines, including **hydroxychloroquine (HCQ) and paracetamol**, to many African countries in addition to doctors and paramedics.

◈ **Recent Development**:

➤ India's first high-level visit in Africa for 2022 took place and the following developments took place:

➤ India announced the Phase-II upgrade of Entrepreneurship Development and Technology Centre (CEDT) in Dakar, built with Indian grant assistance.

➤ India also offered a Special ITEC English proficiency course for Senegalese public servants.

➤ India announced a Special training program for a batch of 15 Senegalese diplomats at Sushma Swaraj Institute of Foreign Services.

What is the Importance of Africa for India?

◈ The end of the Cold War presented new opportunities for India to interact with Africa. India's rapid economic growth needed new markets and access to resources. As a result, economic engagement with Africa has become central to India's new approach.

◈ This is related to India's search for energy security, in which Africa is playing an increasingly important role.

◈ Africa is a resource rich nation dominated by commodities like crude oil, gas, pulses and lentils, leather, gold and other metals, all of which India lacks in sufficient quantities.

◈ **Namibia and Niger** are among the top **ten global producers of uranium.**

◈ South Africa is the world's largest producer of platinum and chromium.

◈ India is seeking diversification of its oil supplies away from the Middle East and Africa can play an important role in India's energy matrix.

African Continental Free Trade Agreement (AFCTA):

- It was established in 2018.

- AFCFTA seeks to create a single continental market for goods and services, with free movement of business persons and investments, and thus pave the way for accelerating the establishment of the Continental Customs Union and the African Customs Union.

- The AFCFTA preliminary work is on steps such as incremental tariff reduction, elimination of non-tariff barriers, supply chains and dispute settlement.

- It is expected to boost intra-African trade by about USD35 billion by the end of 2022.

- The larger market area will likely attract investment for continental infrastructure development.

- The increased trade will create jobs, enhance Africa's global competitiveness, improve social welfare and position Africa for greater industrialisation.

INDIA–US BILATERAL TALKS ON TRADE SETTLEMENT

Context: **During the bilateral talks in New Delhi amid the US President's visit, India and the US also settled the seventh and last outstanding World Trade Organisation (WTO) dispute.**

About the update:

◈ The **six previous disputes** were resolved during PM Modi's state visit to the US.

The six disputes that have been already settled include;

- Countervailing measures on certain hot-rolled carbon steel flat products from India,

- Certain measures relating to solar cells and modules, and

- Measures relating to the renewable energy sector,

- India's export-related measures,

- Certain measures on steel and aluminum products and

- Additional duties on some products from the US.

◈ The USA too announced the **resolution of the outstanding WTO poultry dispute** with India in a separate statement.

◈ As part of the agreement, India also agreed to **reduce tariffs on certain U.S. products**, including **frozen turkey, frozen duck, fresh blueberries and cranberries, frozen blueberries and cranberries, dried blueberries and cranberries, and processed blueberries and cranberries**.

◈ These **tariff cuts** will expand economic opportunities for U.S. agricultural producers in a critical market and help bring more U.S. products to customers in India.

◈ India also agreed to reduce tariffs on certain U.S. products, including **chickpeas, lentils, almonds, walnuts, apples, boric acid, and diagnostic reagents.**

WTO and dispute resolution:

◈ Dispute settlement is the central pillar of the **multilateral trading system**, and the WTO's unique contribution to the **stability of the global economy**.

◈ Without a means of settling disputes, the **rules-based system** would be less effective because the rules could not be enforced.

◈ The WTO's procedure underscores the **rule of law**, and it makes the trading system more secure and predictable.

◈ The system is based on **clearly defined rules, with timetables for completing a case.**

◈ First rulings are made by a **panel and endorsed** (or rejected) by the WTO's full membership. Appeals based on points of law are possible.

India-US trade relations

◈ In 2021, overall U.S.-India bilateral trade in **goods and services** reached a record 157 billion dollars.

◈ The United States is India's largest trading partner and most **important export market**.

◈ Many U.S. companies view India as a critical market and have expanded their operations there.

◈ Likewise, Indian companies seek to increase their presence in U.S. markets and at the end of 2020, Indian investment in the United States totaled 12.7 billion dollars, supporting over 70,000 American jobs.

◈ The nearly 200,000 Indian students in the United States contribute $7.7 billion annually to the U.S. economy.

What Factors made the US Largest Trading Partner of India

◈ The US was India's top trading partner in 2021-22, surpassing China.

◈ The US has consistently been India's largest market for services exports; sales of merchandise goods to US overtook China. India's merchandise exports touched a record $418 billion in 2021-22

The List of the largest trading partners of India:
• USA
• China
• UAE
• Saudi Arabia
• Switzerland

◈ India joins US move to set up Indo-Pacific economic bloc (Indo-Pacific Economic Framework for Prosperity (IPEF)

The World Trade Organization (WTO):

◈ The WTO is an **international organization** established in 1995, succeeding the General Agreement on Tariffs and Trade (GATT).

◈ It is headquartered in **Geneva, Switzerland,** and serves as the **global body r**esponsible for regulating international trade.

◈ Objective:

➤ The primary objective of the WTO is to **promote and facilitate international trade** by reducing trade barriers and tariffs.

➤ Member countries engage in negotiations to liberalize trade and establish rules governing trade-related aspects such as tariffs, subsidies, and trade dispute resolution.

◈ Principles of the WTO:

➤ **Non-discrimination** (the most-favored-nation principle), which ensures that any trade advantage granted to one member must be extended to all members.

➤ **National treatment**, ensuring that foreign and domestic products are treated equally.

➤ **Freer trade**: gradually, through negotiation.

◈ The WTO provides a **mechanism for resolving trade disputes** among member countries.

➤ This process involves panels of experts who assess disputes and issue rulings.

7

◈ Member countries are required to abide by these rulings, enhancing the **rule-based nature of international trade.**

INDIA–MIDDLE EAST–EUROPE ECONOMIC CORRIDOR (IMEC)

Context: **India and Saudi Arabia have joined the European Union and the United States in launching the Partnership for Global Infrastructure and Investment (PGII) and India-Middle East-Europe Economic Corridor.**

India-Middle East-Europe Economic Corridor:

◈ In a bid to stimulate economic development through enhanced connectivity and economic integration, India, along with **other members of the G20**, has entered into a historic memorandum of understanding (MoU) to develop an India-Middle East-Europe economic corridor.

◈ The project is a part of the **Partnership for Global Infrastructure Investment (PGII)** — a West-led initiative for **funding infrastructure projects** across the world.

◈ **Objective**: The corridor aims to provide a reliable and cost-effective **ship-to-rail transit network** between **Asia, Middle East and Europe.**

◈ **Proposals**: The corridor will comprise of **two separate corridors**,

➤ **The Eastern corridor** - will connect India to the Arabian Gulf.

➤ **The Northern corridor**- will connect the Arabian Gulf to Europe.

◈ **Member Nations**: Apart from India, the other participants will include **Saudi Arabia, UAE, France, Germany, Italy, USA and the European Union.**

◈ Components of the project:

➤ The arrangement will include a **railway route** that, upon completion, will provide a **reliable and cost-effective cross-border ship-to-rail transit network** to supplement **existing maritime and road transport routes.**

➤ This will enable **goods and services** to transit to, from, and between **India, the UAE, Saudi Arabia, Jordan, Israel, and Europe**.

➤ Along the railway track, the members want to lay a **cable for clean hydrogen export**.

◈ Key functions:

➤ This corridor will **safeguard regional supply chains**, boost **trade accessibility**, and enable a greater emphasis on environmental, social, and governance consequences.

➤ It will be designed to **increase efficiencies, save costs, promote economic cohesion, create jobs,** and reduce greenhouse gas emissions, leading to a radical integration of Asia, Europe, and the Middle East.

◈ **Intended Timeline**: As per the MoU, the members intend to meet within the **next sixty days** to develop and commit to an action plan with relevant timetables.

➤ However, although the memorandum sets forth political commitments of its participants, it does **not create any rights or obligations** under international law, which means that the members are not necessarily bound by it.

> The EU, through its **Global Gateway programme**, has announced to activate **300 billion** of investments in critical connectivity projects during the period 2021-2027.

◈ **Significance**:

➤ It is seen as a counter to **China's Belt and Road Initiative (BRI).**

➤ Key for **connectivity of Global South.**

➤ Strengthening supply chains amid **Russia-Ukraine War.**

> **Partnership for Global Infrastructure Investment (PGII):**
>
> • The infrastructure plan was first announced in **June 2021** during the G7 (or Group of Seven) summit in the UK.
>
> • The G7 countries include the **United Kingdom, the United States, Canada, France, Germany, Italy, Japan, and the European Union (EU).**
>
> • US President had called it the **Build Back Better World (B3W) framework**.
>
> • In 2022, during the **G7 summit in Germany**, the PGII was officially launched as a joint initiative to help fund infrastructure projects in developing countries through **public and private investments.**

Similar Initiatives:

◈ **China's Belt and Road Initiative (BRI):** It was launched by China **in 2013.**

◈ The BRI consists of **two main components**:

➤ **The Silk Road Economic Belt,** which is a land-based network connecting China to Europe through Central Asia and the Middle East, and

➤ **The 21st Century Maritime Silk Road**, which is a sea-based network linking China to Southeast Asia, South Asia, Africa, and Europe via the South

8

China Sea and the Indian Ocean.

➤ This initiative spans multiple continents, with projects in **over 70 countries.**

❖ India, however, opposed the BRI as it included the **China-Pakistan Economic Corridor**, which connected **Kashgar in China** with the **Gwadar port in Pakistan via Pakistan-occupied Kashmir**.

INDIA–CANADA DIPLOMATIC ROW

Context: The bilateral ties between India and Canada have deteriorated after Canada alleged "potential" Indian links to the killing of Khalistani separatist leader Hardeep Singh Nijjar (wanted under India's Terrorist Act) and expelled an Indian diplomat over the issue.

Who was Hardeep Singh Nijjar?

❖ In June this year Hardeep Singh Nijjar was shot dead outside a Sikh temple in Surrey, British Columbia.

❖ Nijjar had campaigned for an independent Sikh nation – known as Khalistan – to be carved out of India's Punjab state.

❖ He was wanted by Indian authorities and had been designated as a "terrorist" in July 2020.

What is Khalistani movement?

❖ Supported by a minority of Indian Sikhs, the Khalistan movement is a separatist and identity movement that advocates, among other things, for carving out an **independent Sikh homeland** from the Indian state of Punjab.

❖ **The word Khalistan means "Land of the Khalsa" or "Pure."**

❖ **Origin:** India's Punjab state – which is about 58% Sikh and 39% Hindu – was rocked by a violent Khalistan separatist movement (led by preacher **Jarnail Singh Bhindranwale**) in the 1980s and early 1990s, in which thousands of people died.

> The **Sikh Empire** (faith that arose during the **15th century**) was a kingdom in the Punjab region led by **Maharaja Ranjit Singh**, with the province of Lahore serving as the Sikh capital.

❖ **Proposed boundaries**: Some claim the **entire Indian state of Punjab**, while others claim **Pakistani Punjab** and other parts of North India such as **Chandigarh, Haryana and Himachal Pradesh.**

❖ **Operation Blue Star:** In 1984, Bhindranwale and his followers holed up in the Golden Temple—Sikhism's holiest site—in Amritsar, Punjab, and fortified it. They were killed by the government in a mission called **Operation Bluestar**.

❖ **Assassination:** In retaliation, Prime Minister Indira Gandhi, who authorized the mission, was assassinated by her own Sikh bodyguards.

❖ Today, that movement's most vocal advocates are primarily among the Punjabi overseas diaspora.

❖ Farmer protests in New Delhi in 2020–21, led predominantly by Sikhs from Punjab, brought the issue of Khalistan back into the public eye.

❖ The movement has been outlawed in India, where the government considers it a **national security threat.**
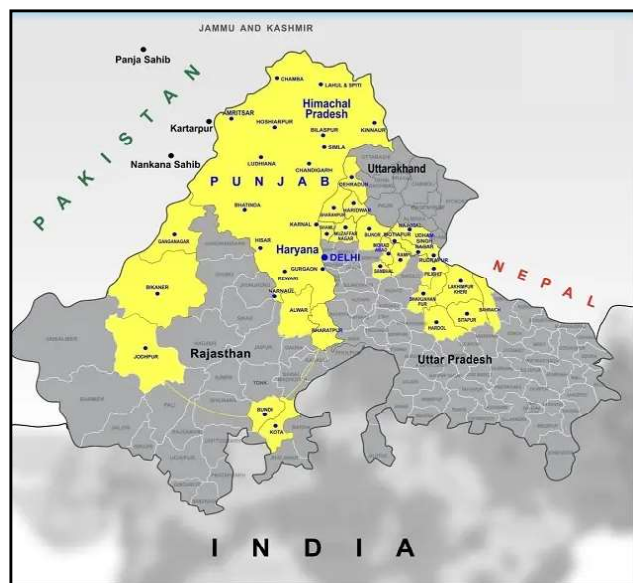
FIG: Proposed Khalistan

Other Separatist Movements

● **Gorkhaland Movement:** As mentioned earlier, the Gorkhaland movement in West Bengal advocates for a separate state for the Gorkha community in the Darjeeling Hills.

● **Bodoland Movement:** The Bodoland movement in Assam seeks the creation of a separate state for the Bodo ethnic group.

● **Vidarbha Movement:** Some groups in Maharashtra have called for a separate state of Vidarbha, citing regional disparities and cultural differences.

How the movement received support in Canada?

❖ The Khalistan movement found supporters among the large and scattered Sikh diaspora, predominantly in Canada, the UK and Australia.

◈ Canada is home to the largest Sikh population outside Punjab, comprising more than 2% of the country's population. It also has significant political representation.

What created resentment among Sikhs?

◈ **Partition:** The partition of Punjab between Pakistan and India in 1947 created fear and disaffection in the Sikh community.

 ➤ They suddenly found themselves divided between a Muslim-majority Pakistan and a predominantly Hindu India.

◈ **Haryana division:** In 1966, Punjab was divided again, this time on linguistic lines, as a new Hindi-speaking state of Haryana was carved out of the region.

HISTORY
Sikh independence movement

15th century Sikhism founded by Guru Nanak Dev Ji

1675 Guru Gobind Singh installed as leader of Sikh faith

1947 Partition of India

1948 Tara Singh calls for establishment of a Punjabi-speaking autonomous Sikh state

1970s The Sikh independence movement gains momentum among Sikhs in India and abroad

1973 The Anandpur Sahib Resolution calls for greater autonomy from the central government for states including Punjab

June 1-10, 1984 Indian forces storm the Golden Temple, Sikhism's holiest site, to flush out separatists who had taken refuge there

October 31, 1984 Then-Prime Minister Indira Gandhi, who had ordered the raid on the temple, was assassinated by two of her Sikh bodyguards

June 23, 1985 A bomb explodes on Air India Flight 182, killing all 329 people on board. Authorities attribute the bombing to Sikh separatists based in Canada

Today According to the 2011 census, 20.8 million Sikhs live in India and make up 1.7 percent of the population

Source: Al Jazeera | September 25, 2023 @AJLabs ALJAZEERA

◈ **Anti-Sikh Violence:** The Indian army's operation in **Amritsar (Operation Blue Star)** and the **anti-Sikh violence** in 1984 created an enduring memory for many Sikhs that has transcended India's borders.

◈ **Inequitable distribution:** Punjab's Sikh community was also impacted by **India's Green Revolution**, an initiative in the late 1960s to improve agricultural production. While this benefited Punjab economically, it created resentment among Sikhs due to the inequitable distribution of wealth, the lack of non-agricultural development and the central government's monopoly over agricultural policy.

◈ **Water distribution:** Another issue contributing to the Sikhs' sense of injustice was the diversion of water from the Sutlej River that flowed through Punjab to the neighbouring states of Haryana and Rajasthan.

1985 Bombing (The Violent Peak):

In 1985, an Air India flight travelling from Canada to India via London, exploded off the Irish coast, killing all 329 people on board. The bombings were planned by Sikh separatists who wanted to take revenge for the Indian army's deadly 1984 storming of the Golden Temple in Punjab state.

How have other countries such as the US and EU reacted to the row?

◈ The West has been rather retrained in their reaction to the ongoing row as they see India as a counterweight to China.

◈ The **Five Eyes** — an intelligence-sharing alliance of the US, UK, Australia, Canada and New Zealand — have not extended whole-hearted support to Canada.

◈ The US is positioning itself as a possible mediator between Ottawa and Delhi.

◈ Canada's interests currently pale in comparison to India's massive strategic importance. It's unlikely Canada's allies, including the US, the UK and France, "will cut ties with India due to Trudeau's allegations".

What does this mean for Canada-India relations?

◈ In 2022, India was Canada's **10th largest trading partner**.

 ➤ **Goods exports** to India amounted to $5.4 billion and services exports, $6.2 billion

 ➤ **Imports** from India were $6.4 billion (Goods) and $2.9 billion (Services).

Canada-India bilateral trade

Canada-India bilateral trade in goods reached nearly $9bn in 2022, a substantial 57 percent increase over the previous year.

Top Canadian exports to India (2021)

Mineral products 36%
Vegetable products 11%
Metals 10%
Chemical products 7%
Instruments 3%
Precious metals 7%
Transport 2%
Paper goods 15%
Machines 6%
Other 3%

Top Indian exports to Canada (2021)

Chemical products 20%
Machines 10%
Precious metals 6%
Transport 6%
Textiles 16%
Vegetable products 6%
Animal products 4%
Furniture 3%
Plastics 5%
Metals 14%
Foodstuff 4%
Other 6%

◈ More than 600 Canadian companies and organisations have a presence in India.

10

◈ **Bilateral commercial relations** between the two countries are worth $100 billion, which includes $70 billion of Canadian portfolio investment in India.

◈ **Students:** India has been the largest source country for international students in Canada. In 2022, their number rose 47 per cent to nearly 320,000, accounting for about 40 per cent of total overseas students.

◈ However, if the crisis escalates, trade and investments could take a hit. If Canada imposes restrictions on student visas or the Indian government creates hurdles, it will reduce student inflow. This will hurt Canada as well, as CBIE data show Indian students contributed $4.9 billion to the Canadian economy in 2021.

THE NEW DELHI DECLARATION

Context: The G-20 Leader's New Delhi Declaration acknowledges the substantial financial requirements of 5.8-5.9 trillion dollars for developing countries before 2030 and 4 trillion dollars annually for clean energy to achieve net-zero emissions by 2050.

Key Highlights of New Delhi Declaration:

◈ **G-20 Welcomes 'African Union':** The Group of 20 (G-20) annual summit welcomed the **African Union** as a member, marking an important development in global economic cooperation.

◈ **Avoiding Condemnation of Russia:** The summit did not explicitly condemn Russia for its war in Ukraine but called on **all states to refrain** from using force to seize territory.

◈ **UN Charter Principles:** The G-20 emphasized the importance of **abiding by the principles of the United Nations Charter** and declared the use or threat of nuclear weapons as 'inadmissible.'

◈ **Humanitarian Aid for Ukraine:** The declaration urged Russia and Ukraine to ensure the immediate and unhindered delivery of **essential goods, including grains and fertilizers,** to meet the demands of developing and least developed countries, particularly in Africa.

◈ **Protection of Food and Energy Infrastructure:** The G-20 called for a halt to military destruction and attacks on **food and energy infrastructure** and

expressed concerns about high volatility in food and energy markets.

◈ **Phasedown of Coal:** Member countries committed to a "phasedown" of coal usage in line with their national circumstances. They also pledged to **triple renewable energy sources by 2030.**

◈ **Climate Finance:** Developing countries require $5.8 to $5.9 trillion in the pre-2030 period to meet their climate goals. The world needs an additional $4 trillion annually by 2030 to achieve the **net-zero carbon emission goals by 2050.**

◈ **Financial Reforms:** The New Delhi Declaration called for reforms in international financial institutions, addressing debt vulnerabilities in low and middle-income countries, and initiating the exchange of tax-relevant information on crypto assets by 2027.

  ➤ It stressed the importance of well-calibrated monetary, fiscal, financial, and structural policies to promote growth, reduce inequalities, and maintain economic stability.

Significance:

◈ **Geopolitical Diplomacy:** The declaration's avoidance of direct condemnation of Russia for the war in Ukraine is notable. It reflects the complex geopolitical dynamics at play and the G-20's effort to maintain a diplomatic stance without escalating tensions.

◈ **Commitment to Peace and Stability**: The call for refraining from using force to seize territory and the designation of the use or threat of nuclear weapons as 'inadmissible' underscores the G-20's commitment to global peace and stability.

◈ **Climate Action and Renewable Energy**: The G-20's commitment to a phasedown of coal and a significant increase in renewable energy sources aligns with global efforts to combat climate change.

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ANDHRA PRADESH REORGANISATION ACT, 2014

Context: As the validity of the Andhra Pradesh Reorganisation Act, which had come into force in May 2014, is going to end in 2024, the local students fear to lose reservation limit of 85% of seats in educational institutions in Andhra Pradesh as mentioned under Article 371D of the Constitution.

State Reorganization in India:

❖ Before India gained independence in 1947, its map was marked by **princely states** and provinces with **no clear linguistic or cultural basis.**

❖ Post-independence, linguistic diversity emerged as a significant factor.

❖ People in different regions of India spoke various languages and felt the need for states where their language was predominant.

❖ To address these linguistic and cultural demands, the government appointed the States' Reorganization Commission in 1953, led by **Justice Fazl Ali.**

❖ The commission recommended the reorganization of states in India based **on linguistic lines**.

The commission submitted its report in **September 1955** and acknowledged **4 major factors** to be taken into account in any scheme of reorganization of states:

- Linguistic and Cultural homogeneity
- Preservation and strengthening of the unity and security of the nation.
- Financial, Economic and Administrative considerations.
- Planning and promotion of the welfare of the people in each state as well as of the Nation as a whole.

❖ In 1956, the Indian government implemented the recommendations of the SRC, which led to the reorganization of states along linguistic lines. This resulted in the creation of new states, including Andhra Pradesh, Kerala, Karnataka, and Maharashtra, among others.

❖ The demand for a separate Telangana state gained momentum over several decades due to political, economic, and cultural differences within Andhra Pradesh.

❖ In 2014, the Indian government passed the Andhra Pradesh Reorganization Act, creating **the state of Telangana.**

About Article 371D:

❖ It is a part of the Indian Constitution that provides **special protections for a certain region.**

❖ Article 371 D, which was added in the Constitution after the 1969 struggle in the State, was reiterated in the A.P. Reorganisation Act, 2014

❖ In this case, it's related to **Andhra Pradesh.** It says that **85% of seats in educational institutions** in Andhra Pradesh must be reserved for local students.

❖ Article 371 D, is incorporated under **32nd amendment** to the Constitution in 1973. that allowed courts (other than the Supreme Court) and tribunals and other authorities to exercise certain jurisdictions, powers, and authorities, which the President may specify in an order with respect to the formation of an administrative tribunal for the state of Andhra Pradesh.

❖ The **32nd Amendment** was promulgated to safeguard the **rights of local students in education and employment**, especially in Andhra Pradesh, as both the Andhra and Telangana regions had witnessed a spate of agitations in the early 1970s.

What is the 32nd amendment of the Indian Constitution all about?

Special rules for enrollment in educational institutions were included in the amendment. In addition to public employment, particularly in civil services, there is the establishment of an administrative tribunal with the authority to handle disagreements and complaints involving public services.

Andhra Pradesh Reorganisation Act, 2014:

❖ The Andhra Pradesh Reorganisation Act, 2014, played a crucial role in the peaceful separation of Andhra Pradesh and Telangana, addressing various **administrative, economic, and political aspects** of the division.

❖ **Formation of Telangana**: The primary purpose of the act was to create the new state of Telangana by carving it out of the existing state of Andhra Pradesh. Telangana officially came into existence on June 2, 2014.

❖ **Proposed common capital:** The act designated **Hyderabad** as the common capital of both Andhra Pradesh and Telangana for a period of ten years,

❖ **Special Provisions**: The act contained special provisions to safeguard the interests of various groups, including the allocation of **seats in educational institutions** and **government jobs** for people from different regions.

13

❖ **Division of Assets and Liabilities:** It outlined the **division of assets, liabilities, and resources** between the two states, including the allocation of **River waters and the division of government employees.**

❖ **Legislative Changes:** The act also necessitated changes in the **boundaries of the two states** and led to adjustments in the legislative and administrative framework to accommodate the new political entities.

❖ **Legislative Assemblies**: the number of seats in the Legislative Assemblies of the States of Andhra Pradesh and Telangana, on and from the appointed day, shall be 175 and 119, respectively.

❖ **Proposed common High Court:** High Court of Judicature at Hyderabad for the State of Telangana and the State of Andhra Pradesh and served as a common High Court for both the states.

What is the procedure to extend the Andhra Pradesh Reogranisation Act?

❖ To extend or amend the Andhra Pradesh Reorganisation Act, a **new law or amendment bill** needs to be introduced in the Parliament.

❖ This requires either the **Central government or a member of parliament (MP)** to propose the amendment.

❖ The Bill goes through the standard legislative process in the Indian Parliament. It must be introduced in either the **Lok Sabha (House of the People) or the Rajya Sabha (Council of States),** the two houses of Parliament.

❖ The bill is then examined by **parliamentary committees, debated, and voted upon**.

❖ To pass the amendment bill, it must receive **a majority vote** in both houses of Parliament. This means it should be approved by a majority of MPs present and voting in each house.

❖ Once the President gives assent, the amended act is notified and comes into effect. This process may involve extending the provisions of the Andhra Pradesh Reorganisation Act, 2014, or making specific amendments to it.

Important Articles

● Article 1 : Name and territory of the Union

● Article 2 : Admission or establishment of new States

● Article 3 : Formation of new States and alteration of areas, boundaries or names of existing States

● Article 4: Laws made under articles 2 and 3 to provide for the amendment of the First and the Fourth Schedule and supplemental, incidental and consequential matters.

PANEL TO EXPLORE 'ONE NATION, ONE ELECTION'

Context: The Central government recently set up a panel headed by former President Ram Nath Kovind to explore the feasibility of the 'one nation, one election' (ONOE) plan.

Brief History

❖ Simultaneous elections for the state assemblies and the Lok Sabha were held till 1967.

❖ However, in 1968 and 1969 some legislative assemblies were dissolved prematurely followed by the dissolution of the Lok Sabha in 1970. This forced a change in electoral schedules for the states and the country.

Other Major Committees to examine the possibility of simultaneous elections

The present committee, headed by former president Ram Nath Kovind, will be the **fourth to examine** the possibility of simultaneous elections. Earlier, the prospect was discussed by the:

❖ **Law Commission:** The Law Commission studied the issue in 1999 and again in 2018. In August 2018, the Law Commission of India released its draft report on simultaneous elections. Its draft report noted that simultaneous elections cannot be held within the existing framework of the constitution.

➤ In order to conduct such simultaneous elections, it said that there needs to be made appropriate amendments to the constitution, the Representation of the **People Act 1951**, and the Rules of Procedure of Lok Sabha and state Assemblies.

❖ **Parliamentary standing committee:** The department-related Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice, Rajya Sabha in its 79th report in 2015

14

also studied the possibility of holding simultaneous elections. It recommended holding simultaneous elections in two phases with elections of some assemblies at the midterm of the Lok Sabha and the

remaining at the end of the tenure of the Lok Sabha.

◈ **NITI Aayog:** In 2017, the NITI Aayog also submitted a paper on the benefits of simultaneous polls.

Benefits	Challenges and Concerns
• **Cost Reduction:** Conducting all elections concurrently would save significant resources spent on separate state and national elections. • **Time saving:** It may save time and the government can get five stable years to focus on governance instead of winning polls. • **Single Election Season**: It would streamline the electoral calendar, eliminating frequent disruptions due to elections in different states. • **Policy Continuity**: The Model Code of Conduct often hampers government initiatives and project announcements, which could be avoided with synchronized elections.	• **Complexity**: Coordinating elections at various levels of government—national, state, and local—poses logistical and administrative challenges. • **Dominance of National Parties**: Critics suggest that it could favor nationally dominant parties over regional ones, potentially undermining federalism. • **Government Instability**: If any government, whether at the state or national level, were to collapse before its term, it could lead to complicated scenarios and potential governance issues. • **Additional cost:** The exercise would also need an additional number of **EVMs/VVPATs**, which would cost a huge amount

What would it take?

◈ **Amendment:** It requires bringing amendments in not less than five articles of Constitution, namely,

 ➤ **Article 83** relating to duration of Houses of Parliament

 ➤ **Article 85** relating to dissolution of the House of the People by the President

 ➤ **Article 172** relating to duration of the State Legislatures

 ➤ **Article 174** relating to dissolution of the State Legislatures

 ➤ **Article 356** relating to the imposition of President's Rule in the States.

◈ **Political consensus:** The consensus of all political parties and state governments would be essential with regard to India's federal structure of governance.

Way forward:

◈ 'One Nation One Election' is a good idea for Indian polity but its feasibility needs to be thoroughly examined by involving all the stakeholders in debate and discussion. Also, the desired goal of having only one election every five years cannot be achieved overnight in the prevailing circumstances. It has to be achieved in stages.

◈ Constitutional amendment(s) can provide for extending or curtailing the term of one or more Legislative Assemblies, say for/by six months or so, wherever it is necessary to achieve the said goal. But it will require unprecedented political will and support.

◈ The latest Law Commission report should, therefore, be considered a good place to start the national debate on Simultaneous Elections.

UNDERSTANDING LAÏCITÉ, THE FRENCH PRINCIPLE OF SECULARISM

Context: Recently, the French government announced that the practice of wearing abaya would be banned in state-run schools as it violated the principle of *Laïcité*, which is the French idea of secularism.

What is the meaning of Laïcité?

◈ Coined in the 19th century, Laïcité is a complicated and politically charged term. It is understood as a **formal separation of the State and Church**.

◈ It involves the complete removal of religious values from the public sphere and their replacement with secular values such as liberty, equality, and fraternity.

◈ The word itself derives from the ancient Greek term for "the people," or "the laity," as opposed to the priestly class

◈ Underlying goal: to implant tolerance and assimilate people.

◈ As per the principle, religion is to be confined to the private sphere. It is important to note here that the state plays an important role in ensuring that affairs are run according to the principle of Laïcité.

Origin:

Laïcité, a product of the struggle of anti-clerical Republicans against the power of the Catholic Church, was an abstract idea following the French Revolution in 1789.

15

How Secularism is managed in a nation of 1.25 billion people?

◆ Like the French, Indians tend to consider secularism as part of their national identity.

◆ But while the foundation of French *laïcité* is to keep the government neutral in religious affairs, the Indian version of secularism "allows state intervention in the dominant religion"— and recognizes minority rights.

Secularism in India vs. the Western World: A Comparative Exploration

◆ Secularism, a crucial component of contemporary governance, takes on distinct forms in India compared to Western nations.

	Western Secularism	Indian Secularism
Definition	• In Western countries, secularism primarily revolves around the Enlightenment principles, advocating for a strict separation between religious institutions and state affairs. The primary aim is to maintain religious neutrality in government functions.	• India's brand of secularism is characterized by an inclusive approach that accommodates religious diversity. It is rooted in the idea of respecting and safeguarding the right to religious freedom for all citizens.
Basis	• The Western concept of secularism is based on the ideas of **Thomas Jefferson.**	• The Constituent Assembly emphasized the secular foundation of India.
Historical Evolution	• Western secularism traces its roots to the Enlightenment era, marked by the **emancipation from religious dogma** and the eventual disestablishment of state religions.	• India's journey is closely tied to its **struggle for independence** and the subsequent framing of its constitution.
Legal Framework	• Western countries often codify secularism within their constitutions and legal systems. • These legal provisions enshrine the **separation of church and state** and protect the freedom of religion for all citizens.	• India's Constitution embodies its approach to secularism by guaranteeing equal protection of religious freedom and prohibiting discrimination based on religion. • The Indian Constitution has spelled out several provisions in **Part III (Articles 14, 15, 16, 25, 26, 27, 28, 29, 30), Part IV (Article 44), and IVA (clause (e))** that reflects the existence of secularism.

PERSONALISED ADAPTIVE LEARNING (PAL) WITH AI

Context: **The National eGovernance Division (NeGD) under MeitY, plans to incorporate Personalised Adaptive Learning (PAL) into DIKSHA, offering individualised learning experience to students.**

National eGovernance Division (NeGD):

◆ The National e-Governance Division was created by the **Ministry of Electronics & Information Technology** as an **Independent Business Division** under the Digital India Corporation {erstwhile Media Lab Asia}.

◆ It was created in 2009.

◆ Since then, NeGD has been playing a pivotal role in supporting MeitY in Programme Management and implementation of the e-Governance Projects; provide technical and advisory support to Ministries/ Departments, both at Central and State levels along with other Government organisations.

> NeGD has developed and is managing several **National Public Digital Platforms** such as **DigiLocker, UMANG, Rapid Assessment System, OpenForge, API Setu, Poshan Tracker**, etc.

About the information:

◆ To facilitate the implementation of PAL, the MeitY has sought the expertise of the **National Council of Educational Research and Training (NCERT).**

◆ PAL works on AI (Artificial Intelligence) and uses software-based approaches to personalize the learning journey of each student.

◆ The development of PAL involves **categorizing content** from various subjects and creating tags for different learning segments. Additionally, new content may need to be created.

◈ The initial focus will be on building PAL for **Chemistry, Mathematics, and Physics** for **Classes 9 to 12**, which are often perceived as challenging subjects.

◈ The **Ministry of Education** aims to improve learning outcomes and school retention through digital learning, especially considering the large number of **students dropping out after Class 10**.

◈ **Objective:** DIKSHA offers **digital textbooks** and **educational content** but is currently static.

➤ The goal is to make **DIKSHA more dynamic** and **personalized for students** with the help of PAL.

◈ The MeitY is also considering the introduction of **voice commands in DIKSHA 2.0** as part of AI-enabled learning. This would allow students to access chapter summaries through voice commands.

◈ The NeGD plans to assess the market for edtech companies through an Expression of Interest and potentially integrate PAL with DIKSHA 2.0.

DIKSHA:

● DIKSHA is the platform for providing quality e-content for school education in States/UTs and QR coded Energized Textbooks for all grades.

● This scheme is under 'one nation, one digital platform'.

● DIKSHA will enable people with visual impairments to access the website using assistive technologies, such as screen readers.

● It is compiled by World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) 2.0 level AA.

Benefits of Personalised Adaptive Learning (PAL)	Challenges of Implementing PAL in DIKSHA
● **Customized Learning**: PAL tailors the learning experience to individual students, addressing their unique needs, pace, and abilities. This promotes better understanding and retention. ● **Improved Engagement**: Personalized learning engages students more effectively as it aligns with their interests and capabilities, making learning enjoyable and motivating. ● **Higher Learning Outcomes**: By adapting content to each student's proficiency level, PAL can lead to improved academic performance and a deeper understanding of subjects. ● **Efficiency:** PAL can identify areas where students need more help and provide additional resources or guidance, making the learning process more efficient. ● **Accessibility:** It can be a valuable tool for learners with disabilities, as it can provide customized support and adapt content to suit their specific needs	● **Infrastructure and Connectivity**: Effective PAL implementation requires reliable internet connectivity and access to devices, which may be a challenge in remote or underserved areas. ● **Teacher Training**: Teachers need training to effectively use PAL tools and integrate them into the curriculum. This requires time and resources. ● **Data Privacy**: Personalized learning involves collecting and analyzing student data, raising concerns about data privacy and security. ● **Content Development:** Creating personalized content for PAL can be resource-intensive and time-consuming. ● **Equity:** PAL may exacerbate educational inequalities if not all students have access to the necessary technology or support. ● **Resistance to Change:** Implementing PAL may face resistance from traditional teaching methods and educators who are not familiar with technology-based learning. ● **Cost:** Developing and maintaining PAL systems can be costly, and budget constraints may limit its adoption in educational institutions.

VIDYA SAMIKSHA KENDRAS

Context: Under the National Digital Education Architecture (NDEAR), the Ministry of Education is pushing States to open Vidya Samiksha Kendras (VSKs).

About the initiative:

◈ **Vidya Samiksha Kendras (VSKs)** are an **open-source platform** run on **C-Qube software** to collect data from all schemes run by **the Ministry of Education (MoE).**

◈ **Source of Data**:

➤ This will include regularly updated data from

➤ the **PM-POSHAN mid-day meal programmes**;

➤ teacher training data from National Initiative for School Heads' and Teachers' Holistic Advancement portal;

➤ textbook content from Digital Infrastructure for Knowledge Sharing; school dropout and attendance-related data on Unified District Information System for Education (UDISE+);

➤ students' learning outcomes from National Achievement Survey; and

17

➤ Performance Grading Index which evaluates school education system at the **State/U.T. level.**

◆ **Implementation**: '*EkStep Foundation'*, a non-profit organisation is on board in **an advisory role** for implementing the VSK project.

◆ **Need of such an initiative:**

➤ Currently the data are fed on the platform manually, and available in **downloadable Excel format** for anyone to access and use, to visualise and analyse trends.

➤ VSK will shift from **manual mode to automatic mode** once the **Application Programming Interface (API)** integration process is complete.

◆ **Fund allocation**: The Centre has allocated funds ranging from **Rs.2 to Rs. 5 crore** to **each State** for adopting and establishing VSKs that include pre-configured open-source hardware and software as well as hiring human resources.

States like **Gujarat, Maharashtra, Odisha, and Jharkhand** have already begun the process of setting up the tech platform.

◆ **Significance:** The idea of developing VSKs is allow mapping of the **school location layer** with the population layer to assess the **Gross Access Ratio**, which can help plan for new schools, or for industry clusters to understand skilling requirements of the area, and help plan **higher educational institutions based on demand and future scenarios.**

National Digital Education Architecture (NDEAR):

NDEAR is an architectural blueprint for the **educational ecosystem in the country** that defines a set of **principles, standards and specifications**, guidelines and policies to strengthen the digital infrastructure for education.

◆ It is under the Ministry of Education in collaboration with the Ministry of Electronics and Information Technology.

◆ Under this, the government will not be building technology solutions for the education sector but will act as an enabler, offering a framework wherein technology can be developed and built by anyone.

◆ It promotes a '**digital first' approach**, supporting teaching and learning activities, and facilitating educational planning as well as governance and administrative activities.

◆ It aims at creating a digital foundation driving towards autonomy and self-governance of all parties involved, particularly states and the Centre.

◆ NDEAR's institutional structure, date, governance framework and technology will benefit both the student and the teacher community alike.

◆ Solutions that adhere to NDEAR frameworks and standards would be considered NDEAR-compliant.

◆ The framework implies that systems and solutions that worked in one state can be shared across the country and adapted in other parts. Systems that are not NDEAR-compliant would work in silos not being able to be leveraged by others.

◆ NDEAR is not a **centrally-controlled framework** and it is inherently federated to ensure the autonomy of all stakeholders including the states.

◆ It is to be noted that NDEAR is **not a platform, technology software or solution, application or portal**, but an architectural blueprint**.**

'FRATERNITY' AS ENSHRINED IN THE CONSTITUTION

Context: **Fraternity is one of the constitutional values that have received the maximum neglect both in the world of ideas and in the political field of action.**

◆ Fraternity, often overlooked, is a vital aspect of **liberal political philosophy** alongside **liberty and equality**.

What does Fraternity means?

◆ Fraternity, in the context of constitutional provisions, refers to the **idea of brotherhood and solidarity among citizens within a nation**.

◆ It implies a sense of **unity, social harmony, and mutual respect** among individuals, transcending differences such as caste, creed, religion, or gender.

It's Origin and Significance:

◆ **Ancient Greek Philosophy**: The concept of fraternity has ancient roots, with early ideas found in the works of philosophers like **Plato and Aristotle.**

➤ Plato emphasized the **sharing of knowledge** and **love in the pursuit of wisdom**, hinting at the notion of **sharing and cooperation** as **elements of fraternity.**

◆ **Medieval Christianity**: During the middle Ages, fraternity was often associated with religion, particularly within the context of Christian society in Europe.

➤ It manifested as a sense of community and brotherhood among religious groups and organizations.

18

◈ **French Revolution**: The concept of fraternity gained political significance during the French Revolution in 1789.

➤ It became one of the three pillars of the revolutionary slogan "**liberté, égalité, fraternité,**" highlighting its importance in the **realm of politics and governance**.

◈ **Evolution in Political Thought**: Fraternity evolved from its origins in civic-political friendship in ancient Greece to religious contexts in medieval Europe, and finally to its revolutionary dimension in modern political thought.

◈ **Enduring Idea:** Despite its evolution, fraternity remains an enduring idea that emphasizes unity, cooperation, and solidarity among individuals or groups, particularly within the political and social spheres.

Constitutional Provisions in India:

◈ **As a part of Preamble:** The term "fraternity" is explicitly mentioned in the **Preamble of the Indian Constitution**.

➤ The Preamble underscores the significance of fraternity in promoting **social cohesion, individual dignity, and national unity.**

➤ It emphasizes that along with **justice, liberty, and equality, fraternity** is a fundamental value that the Indian state is committed to ensuring.

◈ **Article 15**: This article prohibits discrimination on grounds of religion, **race, caste, sex, or place of birth**. It promotes fraternity by ensuring that the state does not discriminate against any citizen.

◈ **Article 17:** Article 17 abolishes "**untouchability**" and forbids its practice in any form. It aims to eliminate a deeply rooted form of social discrimination and promote fraternity among all citizens.

◈ **Directive Principles of State Policy:** Several directive principles in **Part IV of the Constitution**, such as promoting educational and economic opportunities for marginalized groups, aim to reduce inequalities and promote fraternity.

◈ **Fundamental Duties**: The Constitution includes **Fundamental Duties (Article 51A)** that encourage citizens to promote harmony, the spirit of common brotherhood, and renounce practices derogatory to the dignity of individuals and communities.

What are the recent threats to the 'idea of Fraternity' in India?

◈ **Social Inequalities**: True political fraternity cannot exist if it ignores social inequalities. If fraternity is based on hatred towards an imaginary enemy, it only maintains the existing social hierarchy, benefiting the privileged while oppressing the underprivileged.

◈ **Belligerent Nationalism**: The call for fraternity is often replaced by aggressive nationalism that targets religious minorities as enemies. This kind of rhetoric has been used to oppress religious minorities in India.

◈ **Fundamentalism:** Fundamentalism, which is rigid and extreme thinking, is incompatible with fraternity. Fanatics cannot exhibit true brotherhood or solidarity.

◈ **Caste and Fraternity**: In India, the coexistence of caste and political fraternity is challenging. One must give way for the other to thrive, and the future of Indian politics will determine which one prevails.

FINDINGS OF THE PARLIAMENT PANEL ON EDUCATION

Context: The Parliamentary Standing Committee on Education has presented a report in Lok Sabha during the Special Session of Parliament.

Key Observations of the Report:

◈ **Report title:** 'Implementation of the National Education Policy, 2020 in Higher Education'

◈ **Challenges/hurdles in implementation:** The **multiple entry and exit system** (flexible system) is being operated by **western educational institutions** quite effectively but Indian institutions are likely to face several issues in its implementation.

➤ **High population:** Indian institutions are likely to face several issues in implementing this system. Due to high population, the estimated intake of students in higher education every year is quite high.

➤ **Uneven geographical distribution** of higher education institutions would create hurdles in managing MEME in several areas, mostly countryside.

➤ Since institutions would not know the in-and out-traffic, it will certainly disturb the **pupil-teacher ratio.**

MEME System:

The National Education Policy (NEP) suggests implementing a **multiple entry and multiple exit (MEME) system** in higher education.

● This system in education is a flexible approach that allows students to **enter and exit academic programs at various points, rather than following a linear and fixed path.**

◈ The report noted that of the **1,043 universities** functioning in the country, 70% are under the State Act and that 94% of students are in State or private institutions with just 6% of students in Central higher

educational institutions, stressing the importance of States in providing higher education.

❖ The panel highlighted that by 2030, every district in the country should have at least **one multidisciplinary HEI** and that the **Gross Enrolment Ratio in higher education**, including vocational education, should be increased from 26.3% in 2018 to 50% by 2035.

Key-Issues in the Education system

❖ Rigid separation of disciplines

❖ limited access to higher education in socio-economically disadvantaged areas

❖ lack of higher education institutes (HEIs) that teach in local languages

❖ the limited number of faculty

❖ lack of institutional autonomy

❖ lesser emphasis on research

❖ ineffective regulatory system

❖ Low standards of undergraduate education

Positive Impacts:	Negative Impacts:
• **Flexibility:** With flexibility, students can enter and exit programs at different points, allowing for a more personalized learning journey. • **Increased Access:** It can make education more inclusive for working professionals, part-time students, or those with family responsibilities. • **Skill Development:** Students can gain valuable skills and qualifications incrementally. • **Reduced Financial Burden:** Students can manage their finances more effectively by paying for the education in smaller, manageable increments. • **Higher Completion Rates:** Some students who may have dropped out in a traditional system due to personal or academic challenges might stay engaged and eventually complete their education through MEME pathways.	• **Quality Concerns:** Fragmented education pathways can raise concerns about the overall quality of education. • **Credential Devaluation:** There is a risk of devaluing degrees and qualifications, as students may exit with partial credentials that are not widely recognized or respected by employers. • **Administrative Challenges:** Managing a MEME system can be administratively complex. • **Inequality:** MEME systems may exacerbate educational inequalities if not designed and implemented with equity in mind. • **Employer Perceptions:** Employers may not fully understand or trust the qualifications from a MEME system, which could affect graduates' job prospects.

Recommendations of the Report:

❖ **Comprehensive framework for MEME:** The panel, though noted that **MEME will offer students greater flexibility** and choice in their educational pathways, asked the Centre to develop comprehensive guidelines and a well-defined framework for MEME options, including specific eligibility criteria, credit transfer mechanisms providing clear road map for students pursuing different exit points.

❖ **Work for marginalized communities:** The Parliamentary panel has called for "**comprehensive awareness campaigns and infrastructural development**" in the country's remote areas and urban slums to improve access to education in marginalised communities in line with the **National Education Policy (NEP).**

❖ **It has recommended for;**
  ➤ Assessment of the technological infrastructure in higher education institutions,
  ➤ Proper involvement of the student community.

❖ **For Stakeholder's benefits:**
  ➤ Training of teachers who work in communities;

  ➤ Scholarship and financial support;

  ➤ Community engagement, besides collaboration and partnership with **NGOs and civil society organisations.**

❖ **Monitoring Group**: The committee recommended for setting up of a "**monitoring group**" to assess the readiness of the higher education sphere.

❖ **Technological Intervention**: It further recommended "**adoption of modern cloud-based technologies**" to create a more "efficient, transparent, and student-centric ecosystem" in higher education institutions.

National Education Policy 2020

◈ **Funding to be provided**: It also mentioned, **Higher Education Financing Agency (HEFA)** to diversify its sources of funding, and consider;

➤ Reducing the rates of interest

➤ Expediting the process of engagement of "Professor of Practice" as envisaged in the NEP; and

➤ Budgetary and infrastructure support to **set up R&D cells** in different higher educational institutions.

MINOR IRRIGATION CENSUS (MIC) REPORT

Context: Ministry of Jal Shakti Releases the 6th Census Report On Minor Irrigation (MI).

Highlights of the Report:

◈ The report reflects irrigation trends for the year **2017-18.** As per the report, electricity is the primary power source for water extraction in **private irrigation, surpassing diesel, wind, and solar pumps** in majority of States in India.

◈ While the use of electricity showed a jump from powering only **56% of sources** in 2011 to **70% in 2017**.

◈ Out of all **Micro Irrigation (MI) schemes**, 21.93 million (94.8%) were **for groundwater (GW)** and 1.21 million (5.2%) for **surface-water (SW)** extraction.
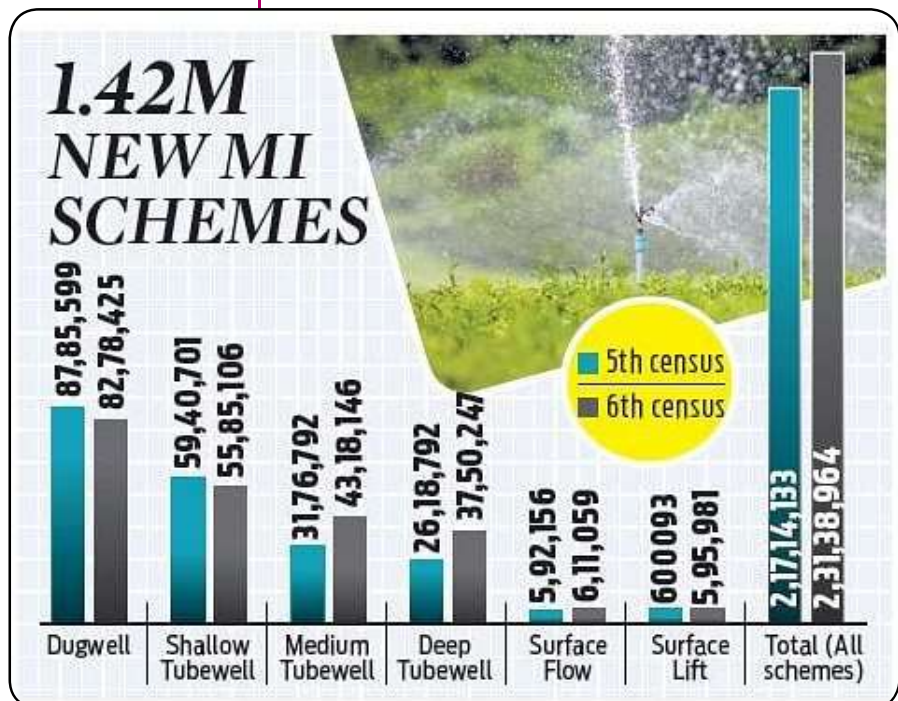
◈ **Dominant source of groundwater**:

➤ While 'dug-wells' or ponds remain the dominant source of groundwater, their number has declined from 87 lakh to 82 lakh between the 5th and 6th editions.

➤ 'Shallow' tube wells have declined from 59 lakh to 55 lakh.

➤ However, 'medium-sized' wells grew from 31 lakh to 43 lakh and 'deep' wells rose from 26 lakh to 37 lakh.

◈ **State-based data:**

➤ Uttar Pradesh had the **largest number of MI schemes** in the country (17.2%) followed by

Maharashtra (15.4%), Madhya Pradesh (9.9%) and Tamil Nadu (9.1%).

➤ Leading States in these schemes are U**ttar Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu and Telangana** whereas Maharashtra, Karnataka, Telangana, Odisha and Jharkhand have the highest share in **SW schemes**.

◈ **Causes for the increase of more powerful and deep-reaching tubewells:**

➤ While excessive groundwater withdrawal has been a matter of long-standing concern, the report doesn't discuss the causes for such increase.

➤ State governments announce schemes where farmers are incentivised or get access to loans to buy such tubewells, could be an explanation.

➤ However, the lower growth in electrification is also likely to be a result of greater emphasis on energy efficient water extraction.

Census Report On Minor Irrigation:

● The First Census of Minor Irrigation schemes were conducted with reference year 1986-87.

● The Second Census with reference year 1993-94.

● The Third Minor Irrigation Census with reference year 2000-01.

● The fourth Census in the series was conducted with reference year 2006-07.

● The Fifth MI Census was conducted with reference year 2013-14.

● The Sixth MI Census has been conducted with reference year 2017-18.

1.42M NEW MI SCHEMES

	5th census	6th census
Dugwell	87,85,599	82,78,425
Shallow Tubewell	59,40,701	55,85,106
Medium Tubewell	31,76,792	43,18,146
Deep Tubewell	26,18,792	37,50,247
Surface Flow	5,92,156	6,11,059
Surface Lift	600093	5,95,981
Total (All schemes)	2,17,14,133	2,31,38,964

21

Concerns:

❖ Electrification of groundwater withdrawal corresponds to a rise in the use of **tubewells and borewells** that are capable of extracting water at greater depths.

❖ There were **23.14 million schemes** in the country, with **Uttar Pradesh** possessing the largest share, followed by **Maharashtra and Madhya Pradesh**

UNEMPLOYMENT MEASUREMENT VARIES FOR ECONOMIES

Context: Comparing unemployment rates between the U.S. and India is challenging due to economic disparities and distinct labor force characteristics, including a substantial informal sector in India and varying measurement methodologies.

Perspectives of defining Unemployment

❖ **The International Labour Organization (ILO)** defines unemployment as being out of a job; being available to take a job; and actively engaged in searching for work.

➤ Therefore, an individual who has **lost work** but does not look for another job is **not unemployed**.

❖ The **labour force** is defined as the **sum of the employed and the unemployed**.

➤ Those neither employed nor unemployed — such as students and those engaged in unpaid domestic work — are considered out of **the labour force**.

❖ The **unemployment rate** is measured as the ratio of the unemployed to the labour force.

➤ The unemployment rate could also fall if an economy is not generating enough jobs, or if people decide not to search for work.

The Unemployment paradox:

In the U.S., the **employment-to-population ratio (EPR)** in 2019 was **60.8,** while the unemployment rate was 3.7%. Even though there were fewer jobs (as a proportion of the total population), the unemployment rate was lower because many individuals had **exited the labour force**.

Measuring unemployment in India

❖ The **NSSO (National Sample Survey Office)** in India employs two primary measures to classify an individual's working status:

➤ **The Usual Principal and Subsidiary Status (UPSS):** It categorizes an individual's principal working status based on the activity they spent a significant amount of time on in the previous year.

● Even if someone is not considered a primary worker, they are counted as employed under UPSS if they engaged in some economic activity for a period of not **less than 30 days**.

● This means that a person who was **unemployed for a shorter duration** but worked for at least 30 days in a **subsidiary role** during the previous year would be classified as a worker according to UPSS, **even if their primary status is unemployed.**

➤ **The Current Weekly Status (CWS):** The CWS adopts a **shorter reference period of a week**.

● An individual is counted as being employed if they have worked for at least one hour on at least one day during the seven days preceding the date of survey.

UPSS unemployment rates will **always be lower than CWS rates** because there is a greater probability that an individual would find work over a year as compared to a week.

Unemployment in India

As per the recent Periodic Labour Force Survey (PLFS), 2022;

❖ **Unemployment Ratio:**

➤ The unemployment ratio is defined as the **percentage of persons unemployed** among the persons in the labour force.

➤ The unemployment rate was **6.6% for men** and **9.4% for women** (9.3% and 11.6% in July-September 2021).

❖ **Worker-Population Ratio (WPR):**

➤ The WPR is defined as the **percentage of employed persons** in the population.

➤ The WPR in urban areas for persons aged 15 and above stood at **44.5%** (42.3% in July-September 2021).

➤ The WPR among **men was 68.6%** and **19.7% among women** (66.6% and 17.6% in 2021).

❖ **Labour Force Participation Rate (LFPR):**

➤ It is defined as the **percentage of persons in the labour force** who are **working or seeking or available for work** in the population, in urban areas for persons aged 15 and above.

➤ It increased to **47.9%** (46.9% in July-September 2021).

22

➤ The LFPR among **men was 73.4%** and **21.7% among women** (73.5% and 19.9%, in July-September 2021).

What are the concerns in Unemployment measurement in India?

❖ Measuring unemployment in India is difficult due to the **informal nature of jobs**.

❖ Unlike developed economies, individuals do not hold **one job year-round**.

❖ The low threshold for **classifying individuals as employed**, particularly in rural areas, contributes to the phenomenon of **lower reported unemployment rates** in rural regions **compared to urban areas**.

❖ These definitions, although they may lead to an **underestimation of unemployment**, were primarily designed to account for the prevalence of informal and sporadic employment in agrarian economies, where individuals often have **access to family farms** or **casual agrarian work**, increasing the likelihood of some level of economic activity even **during periods of joblessness.**

Way forward

❖ **Addressing Measurement Lacunae:**

➤ **Broaden Definitions**: Consider broader definitions of employment to account for various forms of work, including gig work, part-time, and informal employment.

➤ **Quality of Employment**: Include measures of job quality, such as income levels, working conditions, and job security, alongside traditional unemployment rates.

➤ **Use Technology:** Leverage technology and data analytics to enhance the accuracy and speed of employment data collection and analysis.

➤ **Standardize Definitions**: Work towards standardizing employment definitions and methodologies across different surveys and agencies for consistency and comparability.

Suggestive measures:

❖ **Skill Development and Education**: Invest in skill development programs and education to equip the workforce with the skills required for emerging industries and technologies.

❖ **Promote Entrepreneurship**: Encourage entrepreneurship by providing incentives, access to credit, and a conducive regulatory environment to foster job creation.

❖ **Labor Market Reforms**: Implement labor market reforms to strike a balance between worker rights and flexibility for employers, making it easier for businesses to hire.

❖ **Invest in Infrastructure**: Develop infrastructure projects that create jobs, stimulate economic growth, and improve overall productivity.

❖ **Encourage Manufacturing**: Promote the manufacturing sector to generate employment opportunities, as it has the potential to create a significant number of jobs.

❖ **Support Informal Sector**: Recognize the importance of the informal sector and implement policies that provide social security and skill development opportunities for informal workers.

CENTRE SEEKS TO RELAX ANGEL TAX

Context: Recently, Rule 11UA under the Income Tax Act has been amended bringing relief to prospective foreign investors in startups.

What is AngeL tax?

❖ Angel tax is essentially the tax that **unlisted companies (startups)** are liable to pay on the capital they raise through **issue of shares**.

About the update:

❖ In the **Budget 2023-24**, the government has eased some of the provisions of the **angel tax** introduced on investments **into startups** by non-resident investors.

❖ It has introduced **five different valuation methods** for shares and offered a **10% tolerance for deviations** from the accepted share valuations.

> **Fair Value:**
>
> • Fair value is the **estimated price** at which an asset is **bought or sold** when both the **buyer and seller** freely agree on a price.
>
> • To determine the fair value of a product or financial investment, an **individual or business** may look at actual market transactions for similar assets, estimate the expected earnings of the asset, and determine the cost to replace the asset.

❖ The introduction of five alternative valuation methods for the **valuation of equity shares**, which so far could only be valued based on **NAV and Discounted Free Cash Flow methods**, is more flexibility to **merchant bankers** for the valuation of a company.

Taxation of Startups:

❖ In 2012, **Section 56 (2) of the Income Tax Act** was amended to curb money laundering practices.

23

◈ It updated that **any unlisted company (usually startup enterprises)** in receipt of investment which is above the **fair value** will have to treat the extraneous capital as '**income from other sources'** which would be identified and taxed.

◈ In an announcement by the **Finance Ministry in 2019,** startups registered under **Department for Promotion of Industry and Internal Trade (DPIIT)** are exempt from angel tax.

◈ All that a startup needs to do is apply for **eligibility to DPIIT** along with necessary documents and returns which will then be sent to **CBDT (Central Board of Direct Taxes)** for final approval.

◈ The CBDT reserves the **right to decline the exemption** status for a company.

Criteria for Exemption:

Now, according to **the revised rules**, the companies need to meet certain requirements to be eligible for the exemption-

◈ Paid-up capital, along with the premium on shares, cannot exceed **Rs.10 crore** post-issuance of shares.

◈ Earlier administration required a **merchant banker** must certify the startup's fair market value. But this rule has been made away with since 2019.

◈ The lower limit for **investor's net worth** has been fixed at **Rs. 2 crore and average income** cannot be less than Rs. 50 lakh in the last **three consecutive** financial years.

How Foreign Direct Investment (FDI) works in India?

◈ A Foreign Direct Investment (FDI) is an investment made by a **firm or individual** in one country into business interests located in another country.

◈ FDI lets an **investor purchase** a direct business interest in a foreign country.

◈ **Significance:** Apart from being a critical driver of economic growth, FDI has been a **major non-debt financial resource** for the economic development of India.

◈ **Routes of FDI:**
  ➤ **Government Route:**
  ➤ In this, the **foreign entity** has to take the approval of the government.
  ➤ The **Foreign Investment Facilitation Portal (FIFP)** facilitates the single window clearance of applications which are through approval route.
  ➤ It is administered by the **Department for Promotion of Industry and Internal Trade (DPIIT),** Ministry of Commerce and Industry.

Foreign Investments and Impacts on Start-ups:

◈ **Economic Growth**: Foreign investment can fuel economic growth by providing capital, technology, and expertise. Startups often benefit from foreign direct investment (FDI) as it can fund research, development, and expansion.

◈ **Access to Global Markets**: Foreign investors can provide startups with access to international markets, helping them expand their customer base and reach global audiences.

◈ **Ecosystem Development**: Foreign investment can foster the development of a robust startup ecosystem by attracting talent, mentors, and resources, creating a favorable environment for innovation and entrepreneurship.

Challenges

◈ **Ownership and Control**: Startups must consider the trade-off between accessing foreign capital and retaining control. Heavy reliance on foreign investment may lead to loss of ownership and decision-making power.

◈ **Regulatory Hurdles**: Different countries have varying regulations and restrictions on foreign investment. Startups need to navigate these legal complexities, which can be time-consuming and costly.

◈ **Cultural and Market Fit:** Startups entering foreign markets through investment must ensure their products or services align with local cultures and preferences to succeed.

VIABILITY GAP FUNDING TO PROMOTE BATTERY ENERGY STORAGE SYSTEM

Context: Recently, the Union Cabinet approved Rs.3, 760 crore in viability gap funding for establishing a battery energy storage system in India.

About the initiative:

◈ The entire amount for viability gap funding will be borne by the **central government.**

◈ The fund will be released in **five tranches till 2030-31** and help in creation of **4,000 MW hours storage**.

◈ The viability gap funding will lead to an **investment of Rs.9, 500 crore**.

◈ **Objective:** India aims to meet its **50 per cent of energy requirements through renewable energy and non-fossil energy sources.**

24

What is Viability Gap Funding?

◈ The **Viability Gap Funding (VGF) Scheme** aims at supporting **infrastructure projects** that are economically justified but fall marginally short of financial viability.

◈ Support under this scheme is available only for infrastructure projects where private sector sponsors are selected through a **process of competitive bidding**.

◈ The total VGF under the scheme **does not exceed 20% of the total project cost**; however, the Government may decide to **provide additional grants** up to a limit of a further 20%.

What is the process of getting VGF?

The process for availing viability gap funding (VGF) involves:

◈ Submission of project proposals that include requisite information by the **Government/ statutory entity** owning the underlying asset Projects based-on model documents would be preferred over standalone documents **Empowered Institution (EI)** may seek required details for satisfying eligibility criteria.

◈ The EI shall inform the sponsoring Government/ statutory entity whether the project is eligible for financial assistance **within 30 to 60 days.**

◈ The EI may refer the case to **Empowered Committee (EC)** for further clarity on eligibility Projects shall be approved and implemented in accordance with the procedures specified from time to time.

◈ The inter-se allocation of VGF between an ongoing scheme and this scheme shall be determined by the EC.

Battery Energy Storage System (BESS) Project

◈ This is the joint effort of both the **Ministry of New and Renewable energy** and the **Ministry of Power** who have been working on this to provide a road map for the installation of the energy storage system in the country.

◈ **Objective:**

➤ In order to support the ambitious goal of achieving **450 GW renewable energy** target by 2030, it is important that it gets duly supported with installation of energy storage systems (battery energy storage system, hydro pump storage plants etc.).

◈ Battery Energy Storage System (BESS) is a technology developed for **storing electric charge** by using **specially developed batteries**.

◈ The underlying idea being that such stored energy can be utilized at a later time.

◈ Enormous amount of research has led to battery advances that have shaped the concept of Battery Energy Storage System into a commercial reality.

◈ Battery Energy Storage Systems (BESSs) are a **sub-set of Energy Storage Systems (ESSs).**

◈ Energy Storage System is a general term for the ability of a system to store energy using **thermal, electro-mechanical or electro-chemical solutions.**

◈ A BESS typically utilizes an **electro-chemical solution**.

◈ Essentially, all Energy Storage Systems capture energy and store it for use at a later time or date.

◈ Examples of these systems include pumped hydro, compressed air storage, mechanical flywheels, and now BESSs.

◈ These systems complement intermittent sources of energy such as **wind, tidal and solar power** in an attempt to balance energy production and consumption.

Why battery storage system is beneficial?

◈ **Decreasing Cost**: A major factor in the rapid increase in the use of BESS technology has been a 50% decrease in costs of energy storage over the last two years.

◈ **Security of supply:** Storage technologies are also popular because they improve energy security by optimizing energy supply and demand, reducing the need to import electricity via inter-connectors, and also reducing the need to continuously adjust generation unit output.

◈ **Financial Incentive:** Many governments and utility regulators are actively encouraging the development of battery storage systems with financial incentives, which is likely to lead to further growth.

Concerns associated:

◈ **Risk involved in using BESS:** While the use of batteries is nothing new, what is new is the size, complexity, energy density of the systems and the Li-ion battery chemistry involved — which can lead to significant fire risks.

◈ **Difficulty of fighting battery fires:** Battery fires are often very intense and difficult to control. They can take days or even weeks to extinguish properly, and may seem fully extinguished when they are not.

◈ **Failure of control systems:** Another issue can be failure of protection and control systems. For example, a Battery Management System (BMS) failure can lead to overcharging and an inability to monitor the operating environment, such as temperature or cell voltage.

25

SELF–REGULATORY ORGANISATION FOR FINTECHS

Context: Recently, RBI Governor Shaktikanta Das urged that fintech firms to create a Self-Regulatory Organisation (SRO) for transparent, fair, and consumer-centric practices.

About Fintech:

◈ Fintech" is a term that combines "**financial" and "technology**".

◈ It refers to **companies and technologies** that leverage digital innovations to provide financial services in a more efficient, accessible, and innovative manner.

◈ Fintech encompasses a wide range of services, including **digital payments, peer-to-peer lending, robo-advisors, blockchain technology, and more.**

◈ These technologies are made to go beyond traditional financial systems and **offer new solutions to consumers and businesses.**

What is an SRO?

◈ An SRO is a **non-governmental organization** that **sets and enforces rules and standards** relating to the **conduct of entities** in the industry (members) with the aim of protecting the customer and **promoting ethics, equality, and professionalism.**

◈ SROs typically collaborate with **all stakeholders** in framing rules and regulations.

◈ **Working:**

➤ Their self-regulatory processes are administered through **impartial mechanisms** such that members operate in a **disciplined environment and accept penal actions by the SRO.**
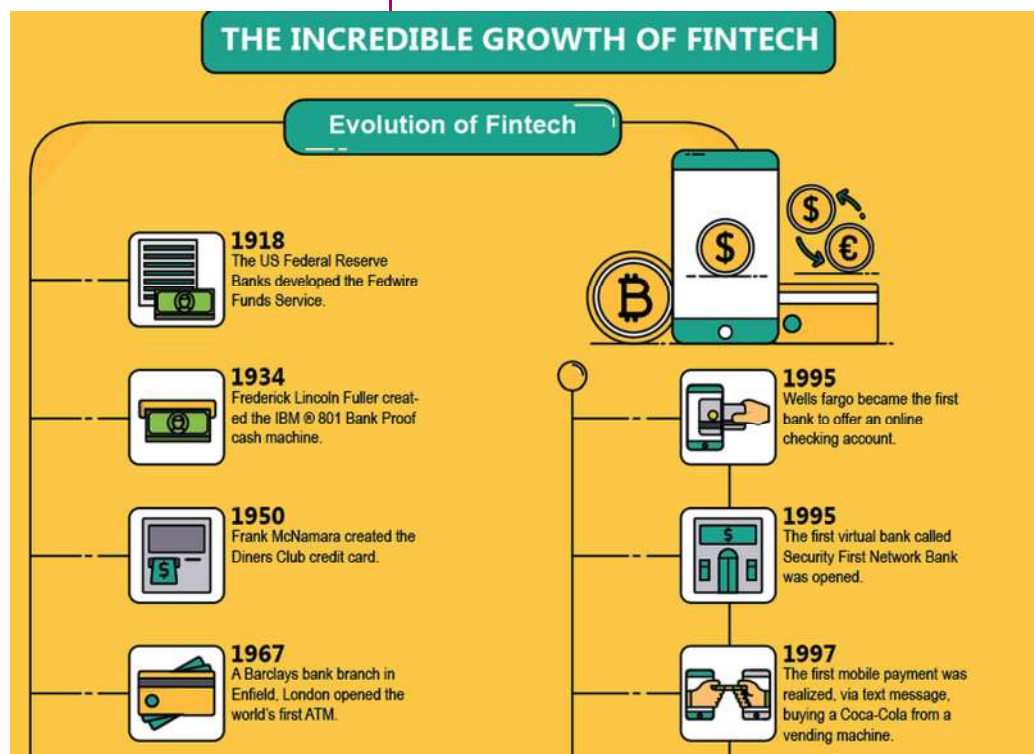
➤ An SRO is expected to address

concerns beyond the **narrow self-interests of the industry, such as to protect workers, customers, or other participants in the ecosystem.**

What are the functions of an SRO?

◈ The recognized SRO will serve as a **two-way communication channel** between its members and the RBI.

◈ It will work towards establishing **minimum benchmarks and standards** and help instill professional and healthy market behavior among its members.

◈ SROs will **impart training** to the **staff of its members** and others and will conduct awareness programs.

◈ It will establish a **uniform grievance redressal** and **dispute management framework** across its members.

RBI's Expectations from Fintech Players:

◈ **Industry Best Practices and Compliance**: Fintech firms are urged to develop and adopt industry best practices, aligning with local laws. This includes establishing robust privacy and data protection norms.

◈ **Avoiding Mis-Selling and Ensuring Ethical Business Practices**: Fintech entities should set standards to prevent mis-selling and uphold ethical conduct in their operations.

◈ **Transparency in Pricing**: It is expected that fintech companies maintain transparency in pricing, ensuring that customers have a clear understanding of the costs involved in their services.

THE INCREDIBLE GROWTH OF FINTECH

Evolution of Fintech

1918
The US Federal Reserve Banks developed the Fedwire Funds Service.

1934
Frederick Lincoln Fuller created the IBM ® 801 Bank Proof cash machine.

1950
Frank McNamara created the Diners Club credit card.

1967
A Barclays bank branch in Enfield, London opened the world's first ATM.

1995
Wells fargo became the first bank to offer an online checking account.

1995
The first virtual bank called Security First Network Bank was opened.

1997
The first mobile payment was realized, via text message, buying a Coca-Cola from a vending machine.

How SRO can solve the purpose?

◈ SROs could play a pivotal role in the fintech industry by **promoting responsible practices and maintaining ethical standards.**

◈ There have been many instances where a few fintech players were involved in unethical practices such as charging exorbitant higher interest rates and **harassment of borrowers** for recovering loans.

◈ It will help to address issues like **market integrity, conduct, data privacy, cybersecurity, and risk management.**

◈ SROs can help build trust among **consumers, investors, and regulators**.

How can an entity become an SRO?

◈ Those entities who are interested in being recognized as SROs will have to apply to the RBI.

◈ Once the regulator finds an entity suitable, it will issue **a letter of recognition.**

Why fintech industry is important?

◈ **Financial Inclusion:** Through digital platforms and mobile apps, fintech companies have made it easier for people to access banking, payments, lending, and investment services.

◈ **Innovation and Disruption**: Fintech companies are known for their innovative approaches to financial services. They leverage technology to create new products, services, and business models.

◈ **Efficiency and Cost Reduction**: Fintech companies often use automation, artificial intelligence, and blockchain technology to streamline operations.

◈ **Improved Customer Experience**: Fintech companies place a strong emphasis on user experience and design.

◈ **Innovative Payment Solutions:** They revolutionized the way we make payments. This includes the development of digital wallets, **peer-to-peer payment platforms, and cryptocurrency.**

◈ **Access to Capital for Small Businesses**: Fintech platforms, such as peer-to-peer lending and crowdfunding, have provided alternative sources of **funding for small businesses and startups.**

◈ **Data-Driven Insights and Personalization**: Fintech companies often leverage big data and advanced analytics to provide customers with personalized financial advice and insights.

RBI's role in fintech administration:

The Reserve Bank of India (RBI) plays a crucial role in the administration and regulation of the fintech sector in India.

◈ **Regulatory Oversight**: RBI is the central regulatory authority for the financial sector in India. It formulates policies and regulations that govern various aspects of fintech operations, including payment systems, digital banking, cryptocurrencies, and other innovative financial technologies.

◈ **Licensing and Authorization:** RBI is responsible for granting licenses and authorizations to fintech companies, especially those involved in critical financial activities like payment processing, lending, and other regulated services. This ensures that only qualified and compliant entities operate in the financial sector.

◈ **Setting Standards and Guidelines:** RBI establishes industry standards and guidelines to ensure the safety, security, and efficiency of fintech operations. This includes rules for data protection, cybersecurity, anti-money laundering (AML), and customer protection.

◈ **Monitoring and Supervision**: RBI monitors the activities of fintech firms to ensure compliance with regulatory requirements. This involves conducting audits, inspections, and assessments to verify adherence to prescribed norms.

◈ **Consumer Protection**: RBI takes measures to protect the interests of consumers in fintech transactions. This includes setting rules for fair practices, dispute resolution, and grievance redressal mechanisms.

◈ **Fostering Innovation**: While regulating the sector, RBI also encourages innovation in fintech. It provides a conducive environment for experimentation and adoption of new technologies that can benefit the financial industry and consumers.

◈ **Risk Management**: RBI assesses and addresses the potential risks associated with fintech activities. This involves identifying and mitigating risks related to cyber security, fraud, market stability, and systemic risks.

GRESHAM'S LAW

Context: In India's informal economy, Gresham's Law is relevant because fake money and low-quality coins often mix with real currency, affecting the overall value of money in circulation.

What is Gresham's law?

◈ Gresham's law refers to the dictum that **"bad money drives out good."**

◈ The law comes into play when the exchange rate between two moneys or currencies is fixed by the

27

government at a certain ratio that is different from the **market exchange rate.**

◈ Such price fixing causes the **undervalued currency** — that is, the currency whose price is fixed at a level below the market rate — to go out of circulation.

> Gresham's law is named after English financier **Thomas Gresham** who advised the English monarchy on financial matters.

◈ The overvalued currency, on the other hand, remains in circulation but it does not find enough buyers.

◈ It should be noted that the market exchange rate is

essentially an equilibrium price at which the supply of a currency is equal to the demand for the currency.

◈ Also, the supply of a currency in the market rises as its price rises and falls as its price falls; while, on the other hand, the demand for a currency falls as its price rises and rises as its price falls.

◈ So, when the price of a currency is fixed by the government at a level below the market exchange rate, the currency's supply drops while demand for the currency rises.

◈ Thus a **price cap** can lead to a currency shortage with demand for the currency outpacing supply.

Devaluing Currency (Currency depreciation)	Currency Appreciation
● Currency devaluation involves taking measures to strategically lower the purchasing power of a nation's own currency. ● A weak domestic currency makes a nation's exports more competitive in global markets and simultaneously makes imports more expensive. ● Higher export volumes spur economic growth, while pricey imports also have a similar effect because consumers opt for local alternatives to imported products.	● Currency appreciation refers to the increase in value of one currency relative to another in the forex markets. ● Countries use currency appreciation as a strategic tool to boost their economic prospects. ● Export costs rise This eventually leads to a reduction in gross domestic product (GDP), which is definitely not a benefit.

> The law, named after English financier Thomas Gresham, came into play most recently during the economic crisis in Sri Lanka last year, during which the Central Bank of Sri Lanka fixed the exchange rate between the Sri Lankan rupee and the U.S. dollar.

Example:

◈ In India, there is one-rupee note and one-rupee coin.

◈ Both are forms of legally good money. Yet, the public sometimes prefer one form of a particular denomination to another, e.g., they may prefer the paper note to the rupee note.

◈ If there is such a preference for one form of money rather than another, it is an example of Gresham's Law in operation.

INVASIVE SPECIES THREATEN WORLD'S DIVERSITY

Context: **According to a UN assessment, invasive species are costing the world at least $423bn every year and have become a leading threat to the diversity of life on Earth.**

About the Report

◈ The assessment, produced by the Intergovernmental

Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), was produced over four and a half years.

◈ The findings follow a 2019 report that warned **1m species** were at risk of going extinct, threatened by pollution, climate change, invasive species, the direct exploitation of organisms, and land-use change.

➤ Invasive species have contributed to **40% of all known animal extinctions**.

> **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES):**
> ● **Established in:** 2012
> ● IPBES is the leading UN body on biodiversity science
> ● It is an international organization committed to strengthening the role of science in public decision-making on biodiversity and ecosystem services.

Key-highlights of the Report

◈ Invasive alien species are a major threat to biodiversity and can cause irreversible damage to nature, including local and global species extinctions, and also threaten human wellbeing.

◈ **Top species:** The top three invasive species include

➤ **Water hyacinth**, an aquatic plant native to tropical South America that blocks waterways and damages fisheries, the flowering shrub lantana, and the black rat

28

- ➤ *Aedes albopictus* (spread West Nile virus)
- ➤ *Aedes aegypti* (spread Zika virus)

◈ **Dominant areas:** Most invasive species reports were noted in the Americas with 34% of all reports, followed by Europe and Central Asia (31%), the Asia Pacific (25%) and Africa (7%).

What is invasive species?

◈ An invasive species is an organism that is **not indigenous, or native**, to a particular area.

◈ **Pathways:** An invasive species can be introduced to a new area via the ballast water of oceangoing ships, intentional and accidental releases of aquaculture species, aquarium specimens or bait, and other means.

◈ Not all non-native species are invasive.

- ➤ **For example,** most of the food crops grown in the United States, including popular varieties of wheat, tomatoes, and rice, are not native to the region.

◈ **Features:** To be invasive, a species must

- ➤ It must adapt to the new area easily.
- ➤ It must reproduce quickly.
- ➤ It must harm property, the economy, or the native plants and animals of the region.

LIST OF INVASIVE FLORA AND FAUNA IN INDIA		
Name	**State / Region**	**Native to**
African apple snail	Andaman and Nicobar	
Papaya Mealy Bug	Assam	Mexico and Central America,
Cotton Mealy Bug	Deccan	North America
Amazon sailfin catfish	West Bengal	
Black Wattle	Western Ghats	South East Australia
Water Hyacinth	It is found throughout India	Tropical America
Black Mimosa	Himalaya, Western Ghats	Tropical North America
Parthenium/ Congress grass, Parthenium	It is found throughout India	Tropical North America
Cannibal Snail / Rosy wolf snail	–	Native to the southeastern United States.
Indian Bullfrog	Andaman and Nicobar	Afghanistan, Bangladesh, India, Myanmar, Nepal, Pakistan
Lantana camara	In the Bandipur National Park, Karnataka	South America

Additional examples:

◈ **Cogongrass** is an Asian plant that arrived in the United States as seeds in packing material.

◈ **Feral pigs** will eat almost anything, including native birds. They compete with native wildlife for food sources such as acorns.

◈ Feral pigs spread diseases, such as brucellosis, to people and livestock. E. coli from their feces was implicated in the E. coli contamination of baby spinach in 2006.

◈ **European green crabs** found their way into the San Francisco Bay area in 1989. They out-compete native species for food and habitat and eat huge quantities of native shellfish, threatening commercial fisheries.

◈ **Dutch elm disease** (caused by the fungus Ophiostoma ulmi) is transmitted to trees by elm bark beetles. Since 1930, the disease has spread from Ohio through most of the country, killing over half of the elm trees in the northern United States.

29

◈ **Emerald ash borer beetles:** Emerald ash borer beetles are invasive insects first discovered in Michigan in 2002 and most likely brought over on packing material from East Asia.

RISING HEAT INDEX IN IRAN

Context: As per a recent report, Iran's coastal region has recorded a scorching heat index of 70 degrees Celsius (°C) in the coastal part of the country, a metric at which survival of life is not impossible. Also, the region recorded a heat index of 66.7 °C.

What is a Heat Index?

◈ Heat index, also known as apparent temperature, is a **measure of how the temperature feels to humans**.

◈ Relative humidity is an important factor that determines **heat index, along with air temperature.**

In 2024, India is scheduled to launch its **own heat index** to quantify the impact of heat on its population and generate impact-based heatwave alerts for specific locations.

How Heat index is measured?

◈ **Dr. Robert Steadman's Formula**: In 1979, Dr. Robert Steadman, a professor at Colorado State University, developed a complex formula to calculate heat index.

  ➤ This formula considers factors like **temperature, humidity, wind speed, and barometric pressure to determine the apparent temperature, or what humans perceive as the temperature.**

◈ **Considerations for a "Typical Adult"**: Dr. Steadman's study was based on a "**typical adult human of either sex, with a height of 1.7 metres and a weight of 67 kg."**

  ➤ This standardization allows for a consistent calculation of heat index applicable to a broad range of individuals.

◈ **Inclusion of Dew Point**: Dew point is a critical factor in heat index calculations.

  ➤ It represents the temperature at which air can no longer hold all its moisture, causing condensation.

  ➤ Dr. Steadman used a specific dew point value of **14°C in his calculations**.

  ➤ This factor is crucial in assessing the sultriness or discomfort associated with a particular temperature-humidity combination.

◈ **Alternative Indices:** While Dr. Steadman's formula is widely recognized, some countries, like Canada, have developed their own indices.

  ➤ Canada uses Humidex, which considers temperature and dew point, but has its own specific formula for calculation.

  ➤ This emphasizes the importance of tailoring heat index calculations to **local climate conditions.**

Why a specific heat index is important?

◈ **Moisture Capacity and Apparent Temperature**: Hot air has a greater capacity to hold moisture than cold air. When the temperature rises, the air's ability to hold moisture also increases.

  ➤ This affects the apparent temperature or heat index, making humid air feel even hotter to humans.

  ➤ This is why the heat index is a more useful metric than just the temperature alone.

◈ **Effects of High Humidity on the Body**: High humidity during heatwaves can lead to heat stress.

  ➤ In these conditions, the body struggles to dissipate excess heat.

◈ **Impact of Humidity**: Conversely, in low humidity conditions, sweat can evaporate more efficiently, making the apparent temperature feel closer to the actual air temperature.

◈ **Dangerous Heat Index Values**: A **heat index value of 67°C** or above is extremely dangerous for both humans and animals with direct and prolonged exposure. At this level, heat-related illnesses become a serious risk.

◈ **Categorization of Heat Levels**

  ➤ **Green:** - Experimental heat Index less than 35 deg C

  ➤ **Yellow:** - Experimental heat Index in the range 36-45 deg C

  ➤ **Orange:** - Experimental heat Index in the range 46-55 deg C

  ➤ **Red:** - Experimental heat Index greater than 55 deg C

• **Public Health**: By understanding the Heat Index, individuals and communities can take proactive steps to protect public health during heatwaves.

About the Location:

- Persian Gulf is an arm of the Arabian Sea; between south-western **Iran and the Arabian Peninsula.**

- **Bordering Countries**: Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman (Musandam exclave) and Iran.

- Connected to the **Gulf of Oman** in the east by the Strait of Hormuz.

- The Strait of Hormuz is situated between Qeshm Island and the Iranian coast in the north and the Musandam Peninsula of the Arabian Peninsula in the south.
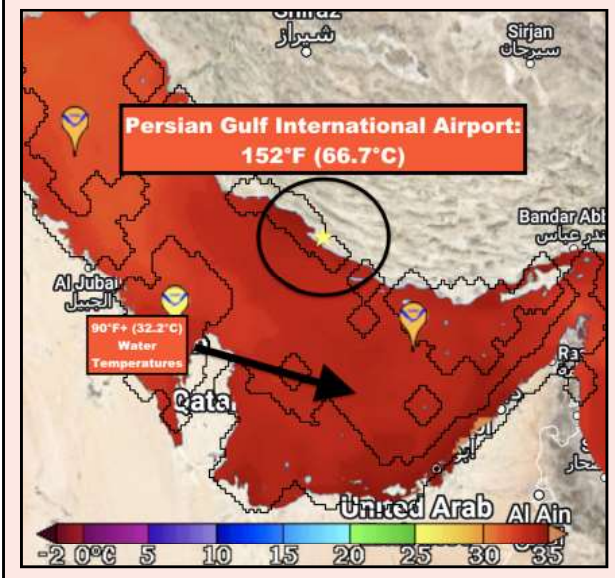
GLOBAL BIOFUELS ALLIANCE (GBA)

Context: The Global Biofuels Alliance (GBA) has been announced by India on the sidelines of the G20 Summit.

About Global Biofuel Alliance (GBA):

- GBA is an **India-led Initiative** to develop an alliance of Governments, International organizations and Industry to facilitate adoption of biofuels.

- **Objective:** Bringing together the **biggest consumers and producers of biofuels** to drive biofuels development and deployment, the initiative aims to position

biofuels as a key to energy transition and contribute to jobs and economic growth.

- ◈ **Joining Members**: 19 countries and 12 international organisations have already agreed to join.

  - ➤ **G20 countries (07) supporting GBA**: Argentina, Brazil, Canada, India, Italy, South Africa, USA

  - ➤ **G20 Invitee Countries (04) supporting GBA**: Bangladesh, Singapore, Mauritius, UAE

  - ➤ **Non G20 (08) supporting GBA:** Iceland, Kenya, Guyana, Paraguay, Seychelles, Sri Lanka, and Uganda have agreed to be initiating members of GBA, and Finland.

  - ➤ **International organizations:** World Bank, Asian Development Bank, World Economic Forum, World LPG Organization, UN Energy for All, UNIDO, Biofutures Platform, International Civil Aviation Organization, International Energy Agency, International Energy Forum, International Renewable Energy Agency, World Biogas Association.

- ◈ **Significance:**

  - ➤ GBA Members constitute **major producers and consumers of biofuels**.

  - ➤ USA (52%), Brazil (30%) and India (3%), contribute about 85% share in production and about 81% in **consumption of ethanol.**

- ◈ **Functions:**

  - ➤ GBA will support worldwide **development and deployment of sustainable biofuels** by offering capacity-building exercises **across the value chain**, technical support for national programs and promoting policy lessons-sharing.

  - ➤ It will facilitate mobilizing a **virtual marketplace to assist industries**, **countries, ecosystem players** and key stakeholders in **mapping demand and supply**, as well as connecting technology providers to end users.
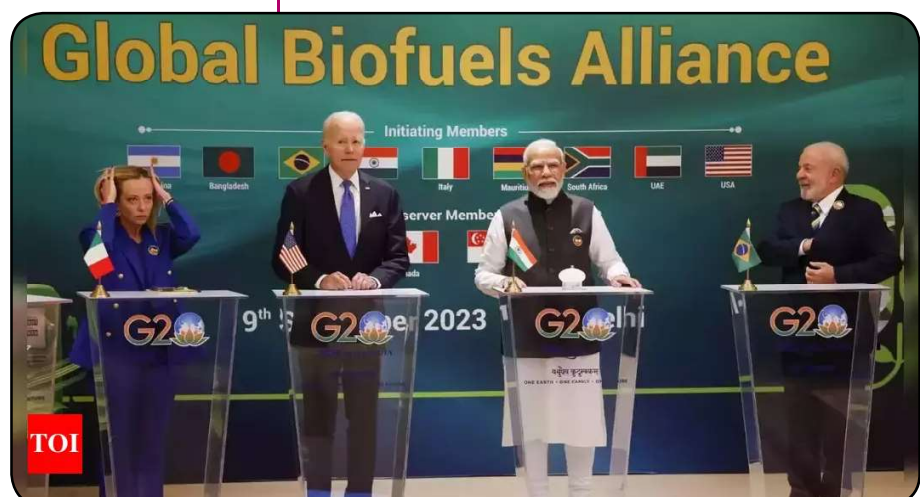
➤ It will also facilitate **development, adoption and implementation** of internationally recognized standards, codes, sustainability principles and regulations to incentivize biofuels adoption and trade.

## India's Approach:

❖ The alliance will focus on collaboration and will provide additional opportunities to Indian industries in the form of exporting technology and exporting equipment.

❖ It will help accelerate India's existing biofuels programs such as **PM-JIVANYojna, SATAT, and GOBARdhan scheme**, thereby contributing to increased farmers' income, creating jobs and overall development of the Indian ecosystem.

What are Biofuels?

❖ Biofuels are liquid fuels produced from renewable biological sources, **including plants and algae.**

❖ Biofuels offer a solution to one of the challenges of **solar, wind, and other alternative energy sources**.
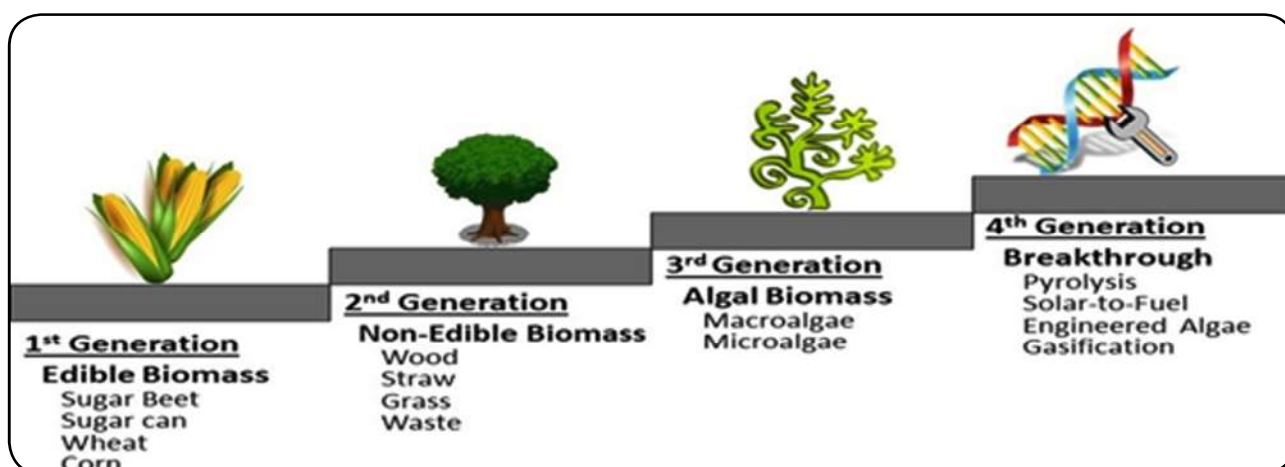
Advantages of Biofuels

❖ **Availability:** since biofuels only require biomass for their production, which is ubiquitous, biofuels are easy to produce.

❖ **Reduction in waste**: biofuels can also be produced using waste materials such as municipal sewage waste, inedible parts of the crops. This effectively aids in the reduction of waste.

❖ Reduce dependency on crude oil and non-renewable sources of fuels.

❖ **Economic development:** the production of biofuels can be a labour-intensive process thus resulting in the creation of jobs. This can provide a source of employment. It can aid in the development of rural areas when the second generation biofuel production units are set up there.

Disadvantages of Biofuels

❖ **Low Efficiency**: The efficiency of biofuels is much lesser compared to fossil fuels, as fossil fuels produce more energy on burning.

❖ **Loss of biodiversity**: the genetically modified crops used for the production of fourth-generation biofuels could result in a loss of biodiversity.

❖ **Less availability of space**: production of biofuels requires land, and in the case of second-generation biofuels, the crops used are mostly non-food crops, thus the production of biofuels requires a lot of space.

❖ **Food shortage**: The first generation biofuels make use of food sources and there is an imminent threat of facing food shortage if the production of biofuels is carried out extensively.

❖ **Water usage:** Massive quantities of water are required for proper irrigation of biofuel crops as well as to manufacture the fuel, which could strain local and regional water resources. This is, however, not the problem in case of the third generation biofuel.

National Biofuel Policy

❖ The policy is aimed at taking forward the indicative target of achieving 20% blending of biofuels with fossil-based fuels by 2030.

❖ The policy intends to ensure the adequate and sustained availability of domestic feedstock for biofuel production, increasing farmers' income, import reduction, employment generation and waste to wealth creation.

❖ This policy clearly exhibits the Centre's push towards **strengthening the energy infrastructure** of the country while promoting the agenda of sustainability.

U.N.'S CLIMATE AMBITION SUMMIT (CAS)

Context: The Climate Ambition Summit (CAS) has been conducted at the United Nations General Assembly which China, United States and India (who collectively account for about 42% of global greenhouse gas emissions and are the top three emitters) failed to participate.

About the Summit:

◈ **Participants:** Representatives from **34 states and 7 institutions** were participated on the summit.

  ➤ Countries including **Sri Lanka, Nepal and Pakistan** were among the listed speakers and emerging economies such as **South Africa and Brazil** were also on the list.

  ➤ The European Union, Germany, France and Canada were also participated.

◈ **The criteria for countries** to be considered for a speaking slot at the summit were:

  ➤ They would be expected to present updated pre-2030 Nationally Determined Contributions (as agreed in Glasgow)

  ➤ Updated net-zero targets

  ➤ Energy transition plans with commitments to no new coal, oil and gas

  ➤ Fossil fuel phase-out plans

  ➤ More ambitious renewable energy targets

  ➤ Green Climate Fund pledges

  ➤ economy-wide plans on adaptation and resilience

◈ All the "main emitters" and notably all **G-20 governments** would be asked to commit to presenting, by 2025, more ambitious economy-wide **Nationally Determined Contributions** featuring absolute emissions cuts and covering all gases.

India's commitments:

◈ India last updated its **climate pledges** in 2022 of reducing emissions intensity — or the volume of emissions per unit of gross domestic product (GDP) — by 45% from 2005 levels by 2030, a 10% increase from what it agreed to in 2015.

◈ The government committed to meet **50% of its electric power** needs from renewable, non-fossil fuel energy sources — up from 40% committed at the Paris agreement.

◈ It assured to create an additional carbon sink of **2.5 to 3bn tonnes of CO2-equivalent [GtCO2e]** through additional forest and tree cover by 2030.

ADITYA L1 MISSION

Context: India took its first step towards the completion of its first-ever solar mission. Recently, Aditya L1 launched successfully, that could revolutionise the understanding of the Sun's dynamics and space weather.

◈ Aditya L1 successfully launched **on September 2, 2023** from Sriharikota.

About the Mission:

◈ The Aditya-L1 mission is the **first space-based observatory-class Indian solar mission** to study the Sun.

◈ **Objective:** The major objectives of Aditya-L1 mission are:

  ➤ Study of Solar upper atmospheric (**chromosphere and corona**) dynamics.

  ➤ Study of chromospheric and coronal heating, physics of the partially ionized plasma, initiation of the coronal mass ejections, and flares

  ➤ Observe the in-situ particle and plasma environment providing data for the study of particle dynamics from the Sun.

  ➤ Physics of solar corona and its heating mechanism.

  ➤ Diagnostics of the coronal and coronal loops plasma: Temperature, velocity and density.
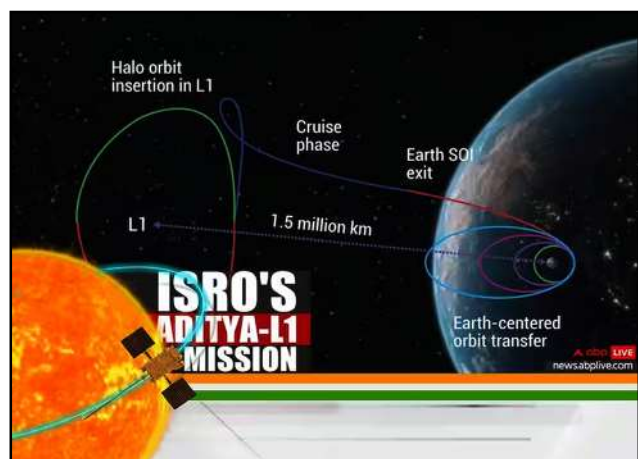
  ➤ Development, dynamics and origin of CMEs.

  ➤ Identify the sequence of processes that occur at multiple layers (chromosphere, base and extended corona) which eventually leads to solar eruptive events.

➤ Magnetic field topology and magnetic field measurements in the solar corona.

➤ Drivers for space weather (origin, composition and dynamics of solar wind.

◈ **Launch details**:

➤ Four months from now, the spacecraft will be successfully placed on its **Halo orbit, L1,** near the Sun.

➤ Soon after that, its seven payloads will come into action to find out answers to some of the most intriguing questions about the Sun.

➤ It will revolve around the Sun with the **same relative position** and hence can see the Sun continuously.

➤ **Payloads:** The spacecraft carries seven payloads to observe **the photosphere, chromosphere and the outermost layers of the Sun (the corona)** using electromagnetic and particle and magnetic field detectors

◈ The seven payloads are-

➤ Visible Emission Line Coronagraph(VELC)

➤ Solar Ultraviolet Imaging Telescope (SUIT)

➤ Solar Low Energy X-ray Spectrometer (SoLEXS)

➤ High Energy L1 Orbiting X-ray Spectrometer(HEL1OS)

➤ Aditya Solar wind Particle Experiment(ASPEX)

➤ Plasma Analyser Package For Aditya (PAPA)

➤ Advanced Tri-axial High Resolution Digital Magnetometers

◈ Among those seven payloads, four of which will **observe the light from the Sun** and the remaining three will **measure insitu parameters of the plasma and magnetic fields**.
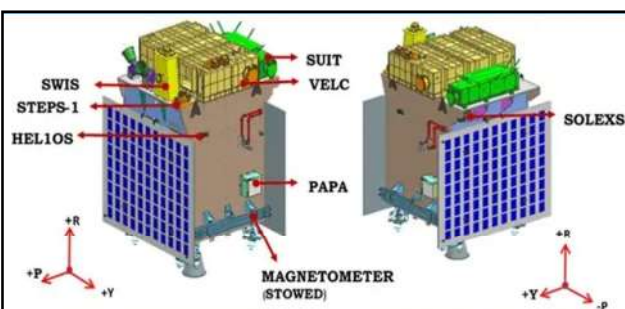
◈ Details of payload aims:

➤ The **Visible Emission Line Coronagraph (VELC),** the primary payload of Aditya L1 will be sending 1,440 images per day to the ground station for analysis on reaching the intended orbit.

➤ **SoLEXS payload**: It is a soft X-ray spectrometer onboard Aditya-L1. The payload is designed to measure the **solar soft X-ray flux** to study solar fares.

➤ **SUIT payload:** The **Solar Ultra-violet Imaging Telescope (SUIT)** payload images the Solar Photosphere and Chromosphere in near Ultra-violet (UV) and also measures the solar irradiance variations in near UV.

What is L1 point?

◈ L1 is among the **five Lagrange points** in the Earth-Sun system.

◈ At this point, the **gravitational forces of the two bodies** balance the **centrifugal force felt** by a **smaller object**.

◈ Due to the balance of force, the object is not attracted by the Sun, hence would be able to effectively "hover" in a stable position relative to the **two larger bodies**.

◈ **Significance:**

➤ This point is located on the line connecting the two bodies. It is situated in the Earth's orbital path around the Sun.

➤ A satellite placed in the halo orbit around the L1 point has the major advantage of **continuously viewing the Sun without any occultation/ eclipses.**

The Sun and its components:
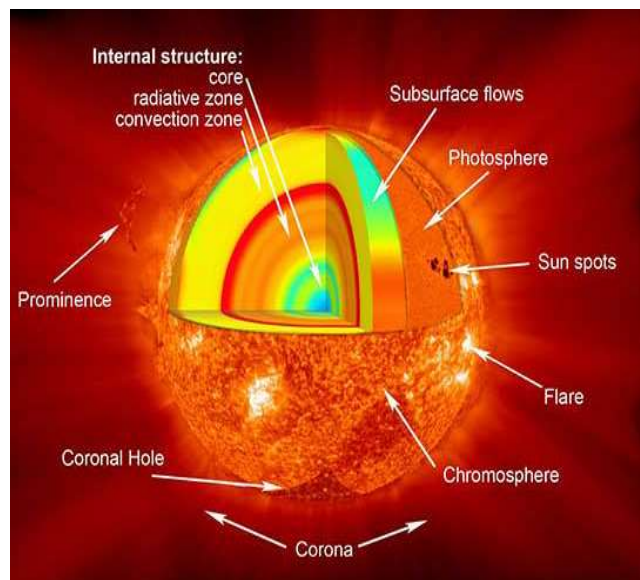
◈ The Sun contains about **92% hydrogen** and **8% helium**.

◈ Compare that to Earth, where the most common elements are **oxygen, magnesium, silicon, and iron.**

◈ The Sun's core is the hottest part, with temperatures reaching up to **15 million degrees Celsius**.

◈ The Sun's visible surface, called the **photosphere,** is much cooler, with a temperature of about **5,500 degrees Celsius**.

◈ The **chromosphere** is the second layer of the Sun's atmosphere, and extends from the photosphere about 2,000 kilometers out.

  ➤ The chromosphere is also the location of solar activity. For example, solar prominences rise up through the chromosphere from the photosphere.

◈ The corona is the **outermost region** of the Sun's atmosphere.

• **Sunspots** are regions with temperatures about 1500 K cooler than the photosphere, making them appear darker than their surroundings.

• **Solar Winds:** The solar wind is nothing more than a stream of charged particles flowing outward from the Sun with an average velocity of about 400 km/sec. It is a natural consequence of the Sun being so hot – the corona gas has too much energy to be gravitationally bound to the Sun.

Why study of Sun is significant?

◈ **To identify magnetic phenomenon**: Studying the Sun in detail can shed light on the **eruptive thermal and magnetic phenomena** which if directed towards the Earth could cause severe disturbances in the near-Earth space environment.

OTHER ISRO Missions:

• Shukrayaan-1: Venus orbiter

• Lunar Polar Exploration Mission: Lunar lander, rover

◈ **To study charged particles**: The atmosphere of the Earth as well as its **magnetic field** acts as a protective shield and blocks a number of harmful wavelength radiations including particles and fields.

◈ **Sun's influence on Earth**: Without the solar energy the life on earth, cannot exist. The gravity of the sun holds all the objects of the solar system together.

Key facts about Sun:

• Sun is the **nearest star** and the largest object in the solar system.

• **Age of Sun**: The estimated **age of sun** is about **4.5 billion years.**

• **Distance:** The distance to the Sun from the earth is about **150 million kilometres**, and is the source of energy for the solar system.

Why Sun is known as a Star?

• Planets do not **twinkle or shine**. They remain constant in their brightness and their overall appearance in the night sky due to some other brightness.
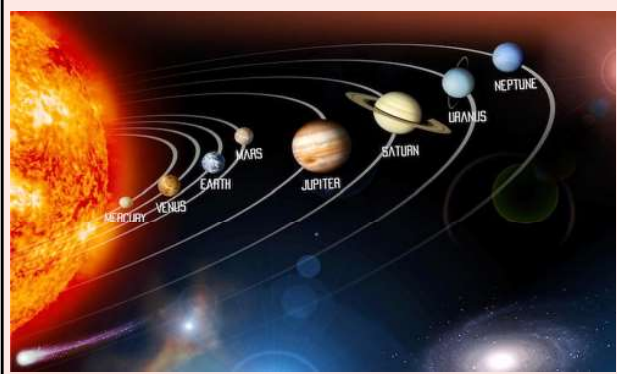
• Any object that blinks, twinkles, or shimmers is a star.

• Stars have their own brightness.

• Sun- the star of our solar system is a star because it produces energy by the fusion reaction of Helium turning into Hydrogen.

Other Solar Exploration Missions:

◈ JAXA's other solar exploratory missions are Yohkoh (SOLAR-A) launched in 1991.

◈ In 2006, Hinode (SOLAR-B) was launched, which was the successor to **Yohkoh (SOLAR-A)**, the orbiting solar observatory.

◈ SOHO (along with NASA and ESA) in 1995; and **Transient Region and Coronal Explorer (TRACE),** along with NASA, in 1998.

Why India needs to gain an edge in solar exploration?

◈ **Increasing Global Space economy:** A 2015 report from the Space Foundation estimated the global space economy to be worth $323 billion.

◈ **Growing commercialization**: ISRO has been actively promoting private participation in the space sector. Collectively domestic private companies in the space sector have raised more than $245.35 million in funding.

◈ **Development of new technologies**: ISRO has been working on developing new technologies such as **reusable launch vehicles and Inflatable Aerodynamic Decelerator (IAD).**

  ➤ Agnikul, a domestic startup in the country has successfully completed the test firing of **3D-printed rocket engines.**

◈ **Expansion of satellite-based services**: ISRO provides satellite-based services in areas such as remote sensing, satellite-based navigation, and satellite-based meteorology, and is looking to expand these services in the future. ISRO has also decided to lend out high-quality satellite-derived data to students, startups, and tech companies at no /minimal costs to stimulate innovation.

35

Indian Space Research Organization (ISRO):

- The Indian Space Research Organization (ISRO) was established in 1969 and launched India's first satellite, Aryabhata in 1975.

- Since then, Indian Space Research Organization (ISRO) has launched several successful missions, including the Mars Orbiter Mission and the Chandrayaan missions to the Moon, demonstrating India's capabilities in space technology.
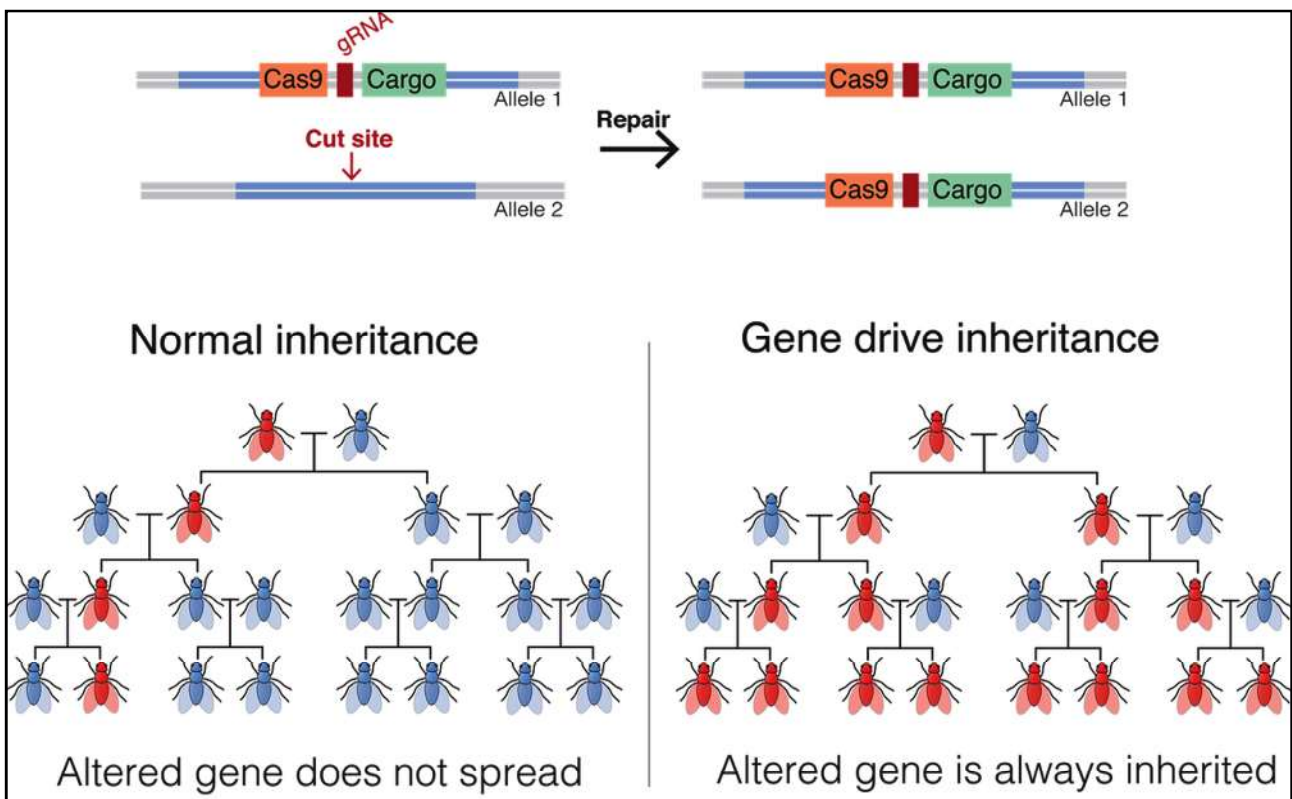
GENETIC ENGINEERING GIVES MOSQUITO CONTROL AN UPGRADE

Context: The surge in mosquito-borne diseases due to urbanization and climate change calls for innovative mosquito control approaches. Sequencing and genetic manipulation of mosquito genomes offer promising tools for effective disease prevention.

What is gene drive?

- Scientists worldwide have developed various **genetic modification approaches**. A major one in this endeavour is gene-drive technology, whose end result is for mosquitoes to selectively inherit some genes, rather than the inheritance to follow the rules of **Mendelian genetics.**

- A gene drive is a type of **genetic engineering technique** that modifies genes so that they don't follow the typical rules of heredity.

- Gene drives dramatically increase the likelihood that a particular suite of genes will be passed onto the next generation, allowing the genes to rapidly spread through a population and override natural selection.

- This technology was conceived by **Austin Burt**, professor at Imperial College London, in a 2003 paper published in **Royal Society Proceedings.**

How does it work?

- Gene drives work by using **directed repair gene editing**.

- This enables the insertion of a new gene, called the driven gene, at a particular cut site through the use of a donor template.

Benefits	Concerns/Issues
• It would lead to prevention of diseases. • It can help to address the challenges of invasive species.	• Drastic reduction in the mosquito population could alter food chains and ecosystems that involve mosquitoes. • Unintended consequences can occur such as unforeseen ecological disruptions • Potential for engineered genes to spread beyond target mosquito populations.

◆ How GM mosquitoes are produced and used to control Ae. aegypti mosquitoes

◆ GM mosquitoes are mass-produced in a laboratory to carry two types of genes

  ➤ A self-limiting gene that prevents female mosquito offspring from surviving to adulthood.

  ➤ A fluorescent marker gene that glows under a special red light. This allows researchers to identify GM mosquitoes in the wild.

◆ GM mosquitoes produced in the laboratory lay eggs. These eggs carry the self-limiting and fluorescent marker genes.

◆ GM mosquito eggs that carry the self-limiting gene are released into an area. Once they have hatched and develop through to the adult stage, they are available to mate with wild females. The genes are passed on to offspring

◆ The female offspring die before they become adults. The expected result is that the number of Ae. aegypti mosquitoes in the area decreases.

Effectiveness of GM mosquitoes in reducing numbers of mosquitoes

◆ GM mosquitoes have been successfully used in parts of Brazil, the Cayman Islands, Panama, and India to control Ae. aegypti mosquitoes. Since 2019, over 1 billion mosquitoes have been released.

◆ When GM mosquitoes stop being released into an area, the Ae. aegypti mosquito population will slowly return to "normal levels."

◆ GM mosquitoes will only work to reduce numbers of target mosquito species (e.g., Ae. aegypti), not other types of mosquitoes. Most communities have more than one type of mosquito.

IISC DEVELOPS NEW NANOPARTICLE FOR CANCER TREATMENT

Context: Scientists at the Indian Institute of Science (IISc) have made a significant breakthrough in cancer research by developing a new method to detect and kill cancer cells.

About the method

◆ The team has created **hybrid nanoparticles**.

◆ The hybrid nanoparticles are composed of **gold and copper sulphide**, which can destroy cancer cells through **heat generation** and enable their detection using **sound waves.**

◆ The hybrid nanoparticles exhibit **photo thermal, oxidative stress, and photoacoustic properties.**

◆ **Therapeutic potential:**

  ➤ When exposed to light, these particles absorb it and generate heat, effectively killing cancer cells.

  ➤ Additionally, they produce toxic singlet oxygen atoms that further contribute to the destruction of cancer cells.

◆ **Diagnostic capabilities:**

  ➤ They can absorb light and generate ultrasound waves, enabling the detection of cancer cells with high contrast.

◆ This property could enhance the accuracy of cancer diagnosis as sound waves scatter less than light when passing through tissues, providing clearer images and more precise measurements of oxygen saturation in tumors.

◆ This innovative approach was detailed in a study published in ACS Applied Nano Materials.

About Cancer

● Cancer is a disease in which **abnormal cells divide** uncontrollably and destroy body tissue.

● It can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and divide to form new cells as the body needs them. When cells grow old or become damaged, they die and new cells take their place.

● When cancer develops, this orderly process breaks down. As cells become more and more abnormal, old or damaged cells survive when they should die and new cells form when they are not needed. These extra cells can divide without stopping and forms tumors, which can spread through the blood or the lymph system and form **new tumors far from the original tumor.**

● **Causes of Cancer:**

  ➤ Biological or internal factors, such as age, gender, inherited genetic defects and skin type.

  ➤ Environmental exposure, for instance to radon and UV radiation, and fine particulate matter.

  ➤ Occupational risk factors, like carcinogens such as chemicals, radioactive materials and asbestos.

  ➤ Lifestyle-related factors.

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37

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Section B
[CONTEMPORARY ISSUES BASED ESSAY]

Topic

ଙ୍ଗ   **Mindful Manifesto is the Catalyst to a Tranquil Self**

MINDFUL MANIFESTO IS THE CATALYST TO A TRANQUIL SELF

Calm mind brings inner strength and self-confidence, so that's very important for good health." 						*Dalai Lama*

In today's **fast-paced** and **chaotic world**, finding **tranquility** and **inner peace** has become an **essential pursuit** for many individuals. Amidst the constant demands and distractions of **modern life**, adopting a mindful approach can serve as a catalyst in achieving a tranquil self. **Mindfulness**, with its roots in **ancient traditions,** has gained immense popularity in recent years due to its ability to **cultivate awareness, enhance well-being,** and **foster a deeper connection** with oneself and the world. A **mindful manifesto** can lead to a **state of tranquility** and offer a path to **self-discovery** and **personal growth.**

Mindfulness is a practice that involves intentionally paying attention to the present moment, with **non-judgmental awareness**. It encourages individuals to engage fully in their **experiences, thoughts,** and **emotions,** without being consumed by them. By focusing on the present, **mindfulness** enables us to let go of regrets about the **past and worries** about the **future,** allowing for a heightened sense of **calm** and **clarity.** The mindful manifesto, therefore, becomes the **guiding principle** to cultivate this state of **mindfulness.**

The **mindful manifesto** encompasses a **set of principles** that encourage individuals to live in alignment with their **true nature, fostering self-acceptance** and **compassion.** Strive for a **balanced life** that nourishes your **physical, emotional,** and **spiritual well-being. Cultivate appreciation** for the little things in life and **focus** on what you have rather than what you lack.

The first principle of the **mindful manifesto** is to **cultivate present-moment awareness.** By grounding ourselves in the here and now, we become more attuned to our **thoughts**, **emotions,** and **bodily sensations.** This awareness helps us disengage from automatic patterns of reactivity and respond to life's challenges with greater **wisdom** and **equanimity.**

The second principle involves embracing **non-judgmental acceptance** of our experiences. Rather than labeling thoughts and emotions as **good** or **bad,** we learn to observe them with curiosity and kindness. This practice allows us to develop a **compassionate relationship** with ourselves, **fostering self-acceptance** and **reducing self-criticism.**

The third principle of the **mindful manifesto** encourages the **cultivation of compassion,** both towards oneself and others. **Mindfulness** teaches us to recognize our **interconnectedness** with the **world, promoting empathy** and **understanding**. By extending compassion to ourselves and others, we create an **atmosphere of kindness,** which **nurtures tranquility** and **harmonious relationships.**

The final principle revolves around letting go of attachment and embracing impermanence. **Mindfulness** teaches us that everything in life is **transient** and **ever-changing.** By releasing our attachment to fixed outcomes or clinging to the past, we cultivate a sense of freedom and ease, allowing **tranquility** to **flourish.**

Mindfulness practices have been **extensively researched** and proven to **reduce stress** and **anxiety**. By developing a **greater awareness** of our **thoughts** and **emotions,** we can respond to stressors in a more composed and **measured manner,** **minimizing** their impact on our overall well-being.

Mindfulness enables us to **observe our emotions** without being **overwhelmed** by them. This **practice** enhances our **ability to regulate** and **navigate** through **challenging emotional states,** promoting **emotional resilience and stability.**

The practice of **mindfulness** has been linked to increased overall **well-being.** By fostering a deep connection with ourselves, we become more attuned to our **physical** and **emotional needs**, leading to **improved self-care** and a greater **sense of contentment.**

The **mindful manifesto** serves as a pathway to **self-discovery** and **personal growth.** By developing **present-moment awareness,** we gain **valuable insights** into our **thoughts,** beliefs, and **patterns of behavior.** This self-awareness empowers us to make conscious choices

Calm Mind Brings Inner Strength And Self-Confidence So That's Very Important For Good Health - Dalai Lama

40

that align with our values and **aspirations, fostering personal growth and transformation.**

It involves being **fully engaged** and **focused** on what **you're doing**, **thinking**, or **feeling** at any given moment. Here are some ways to cultivate mindfulness:

❖ **Mindful Breathing:** Take a few minutes each day to **focus** on your **breath.** P**ay attention** to the **sensation of the breath** entering and leaving your body. Whenever your mind starts to wander, gently bring your **focus back** to your **breath.**

❖ **Body Scan:** Practice a **body scan meditation** by **mentally scanning** your body from **head to toe, paying attention** to any **sensations** or **tension** you might feel. The **goal** is to become more **aware** of your **body** and release any **physical tension.**

❖ **Mindful Observation:** Pick an object, such as a **flower,** and **observe** it closely, **paying attention** to its **colors, shape, and texture**. Engage all **your senses** and **fully immerse yourself** in the experience.

❖ **Mindful Eating:** When you **eat, slow down** and **savor each bite. Pay attention** to the **taste, texture**, and **aroma** of the food. **Avoid distractions** like **TV** or **your phone** during **meals.**

❖ **Mindful Walking:** Take a **walk** and be **present** with each **step**. Feel the **ground beneath your feet**, the movement of **your body**, and the **surrounding environment.** You can also **observe** the **sights** and **sounds** around you.

❖ **Mindful Listening:** When someone is **speaking to you**, give them **your full attention.** **Avoid interrupting** and **really listen** to what they're **saying**. This fosters **better communication** and **connection** with others.

❖ **Mindful Technology Use:** Be conscious of how you use **technology.** Take breaks from **screens** and **social media.** When using your devices, do it with **intention rather than mindlessly scrolling.**

❖ **Mindful Pause:** Before reacting to a **situation** or making a **decision**, take a moment to **pause.** Allow yourself to **respond thoughtfully** and **calmly** rather than reacting impulsively.

❖ **Mindful Journaling:** Write down your **thoughts** and **feelings** in a **journal.** This can help you become more **self-aware** and **process** your emotions in a **mindful way.**

Mindfulness is a **skill** that takes **practice.** Start with **small moments of mindfulness** throughout your day and gradually build it into a regular habit. Over time, you'll find that being mindful becomes more **natural,** and you'll experience the benefits of **reduced stress, improved focus**, and greater **overall well-being**. Regular **practice of mindfulness** can lead to **a sense of tranquility** and **inner peace. Mindfulness** is not about achieving a **particular state** but rather about being present and accepting whatever arises in the moment. It's normal for the **mind to wander** during practice, and the key is to **gently bring it back to the present without judgment.** With consistent **effort** and **patience, mindfulness** can become an **integral part of your life, leading to numerous physical, emotional, and mental benefits.**

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41
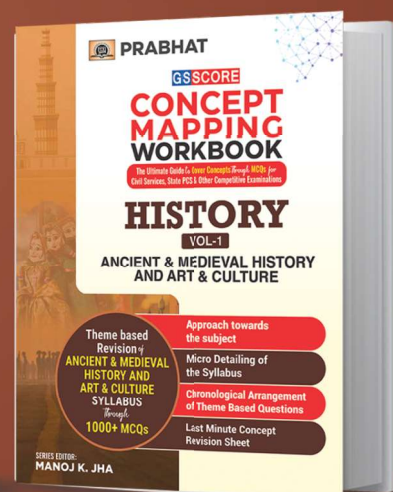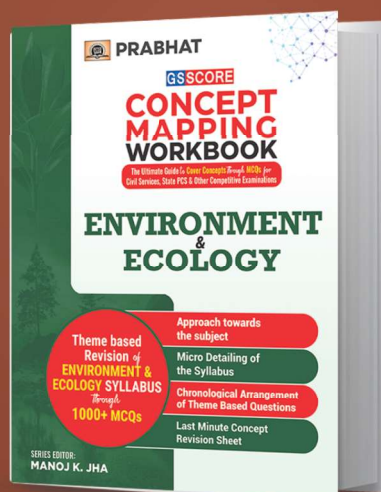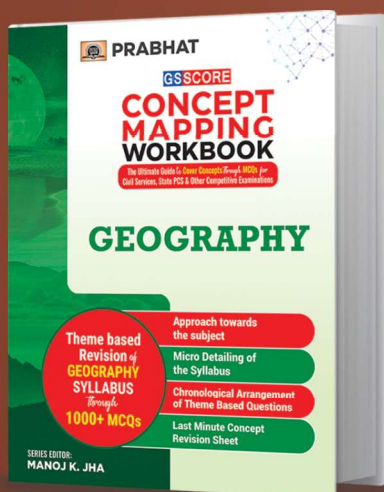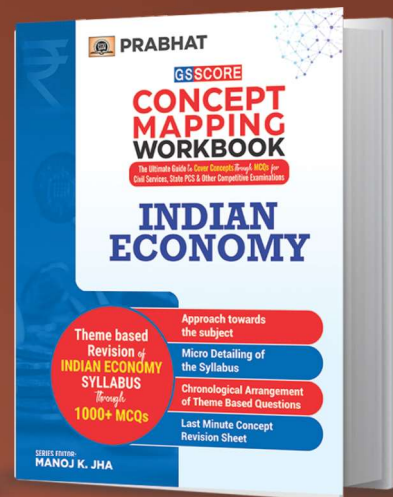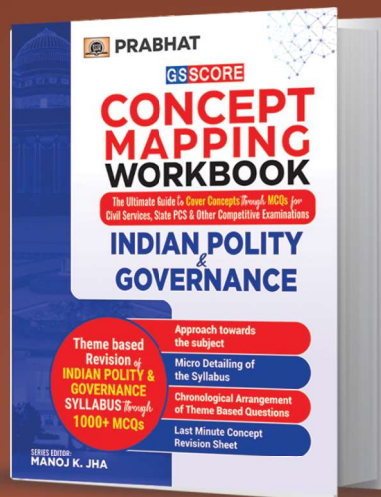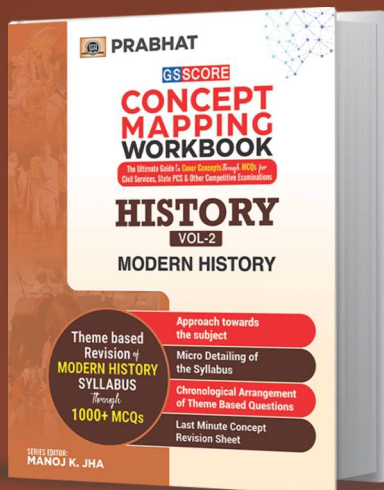
Section C [PRELIMS]

- World Sanskrit Day
- Pulikali festival
- Odisha's Konark Wheel
- Plan to revive maritime heritage
- Shivaji's historic Wagh Nakh
- Ladakh Autonomous Hill Development Council
- Special session of Parliament
- Ayushman Bhav Campaign
- Pearl millet cultivation zones in India
- Heatwaves leading to ozone pollution
- India-Bangladesh consensus to save Sundarbans

WORLD SANSKRIT DAY

Context: World Sanskrit Day, also referred to as International Sanskrit Day, Sanskrit Diwas and Vishwa Samskrita Dinam is observed on the day of Shravana Poornima, i.e. 31st August 2023 this year.

Background:

◈ World Sanskrit Day has a history that can be traced back, **to 1969.**

World Sanskrit Day Aug 31, 2023
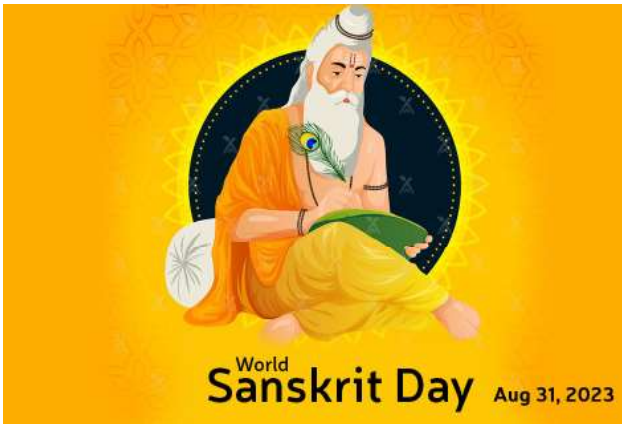
◈ It was during this year that the Indian Government decided to honor and celebrate the contributions of **Pāṇini**, a figure, in the realm of **Sanskrit language and linguistics.**

◈ The declaration was made to commemorate **Pāṇinis work on the occasion of his birth anniversary**. Since then this special day has been.

Key Facts:

● **Ashtadhyayi** was a Sanskrit treatise (list of rules) on grammar written in the **6th to 5th century BCE** by the Indian **grammarian Panini.**

● This work set the linguistic standards for **Classical Sanskrit.**

● It sums up in **4,000 sutras the science of phonetics and grammar** that had evolved in the Vedic religion.

● Panini divided his work into **eight chapters**, each of which is further divided into quarter chapters.

● Beyond defining the morphology and syntax of Sanskrit language, **Ashtadhyayi distinguishes** between usage in the **spoken language and usage** that is proper to the language of the sacred texts.

About the day:

◈ The purpose of this day is to raise awareness and promote Sanskrit, one of India's oldest languages.

◈ Sanskrit holds importance as it serves as the foundation, for classical texts in disciplines such, as **Literature, Philosophy, Mathematics and Science**.

◈ Sanskrit is one of the **oldest languages in the world,** and it is considered to be the mother **of all Indo-Aryan languages**.

◈ It is a highly inflected language, with a complex system of grammar and morphology.

PULIKALI FESTIVAL

Context: As part of the Onam 2023 celebration in Kerala, people across state performed Pulikali (tiger dance).

The Pulikali festival:

◈ Pulikali is a **traditional folk art form** and festival celebrated in the southern Indian state of Kerala.

◈ On the fourth day of Onam festival, artists paint their bodies like tigers with stripes of yellow, red and black and dance to the rhythm of traditional percussion instruments such as thakil, udukku and chenda.

◈ The main theme of this folk art is tiger hunting with participants playing the role of tiger and hunter.

◈ The word "Pulikali" translates to "**Tiger Play" in Malayalam**, the local language.

◈ Participants, known as "**Pulikali artists**," wear colorful costumes resembling tigers and dance through the streets of Kerala's cities and towns.


◈ The festival is usually part of **Onam celebrations**, Kerala's harvest festival, and is performed to entertain people and showcase the **rich cultural heritage of the state.**

◈ Pulikali involves lively and energetic performances, with drummers accompanying the artists, creating a vibrant and captivating spectacle that attracts both locals and tourists.

Other Art forms of Kerala:
● Kathakali
● Kalaripayattu
● Theyyam
● Koodiyattam

44

About Onam:

❖ Onam is the most important and widely celebrated harvest festival in the **southern Indian state of Kerala**.
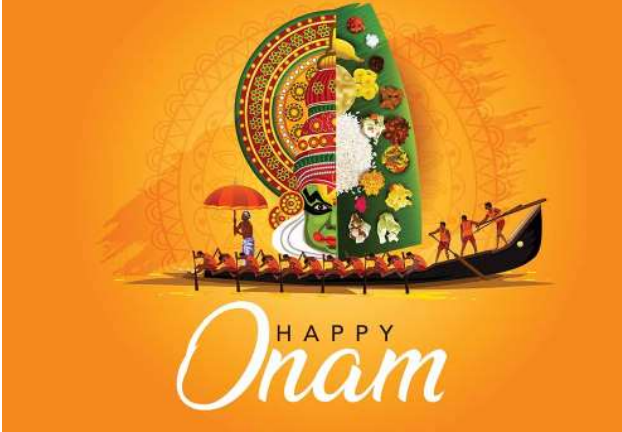
❖ The festival typically lasts for **ten days**, with the main celebrations taking place in the **month of Chingam**, which falls in **August or September** of the Gregorian calendar.

❖ Onam is associated with the mythological **King Mahabali,** who is believed to have been a wise and benevolent ruler. People celebrate his return to Kerala during Onam.

❖ During Onam, people wear traditional clothing known as "Mundu" for men and "Kasavu saree" for women. These outfits are elegant and white with gold borders.

❖ Onam is known for its grand feasts called "**Onasadya,**" which includes a variety of vegetarian dishes served on banana leaves.

❖ Folk dance forms like "**Kathakali" and "Pulikali**" are performed during Onam, along with other cultural events and competitions.

❖ The **"Vallamkali**" or **snake boat races** are a major highlight of Onam, with beautifully decorated long boats competing in thrilling races.

❖ Onam is often referred to as the "**State Festival of Kerala**" and holds a special place in the hearts of Keralites. It reflects the state's cultural diversity and traditions.

ODISHA'S KONARK WHEEL

Context: At the G20 Summit venue in Delhi, the historic Konark Wheel from Odisha's Sun Temple emerged as a focal point of attention. Prime Minister has selected a wall adorned with a depiction of this ancient architecture as the backdrop for his warm welcome to world leaders.

About Konark Wheel:

❖ The Konark Wheel is an integral part of the **Sun Temple**, dedicated to the sun god **'Surya'.**

❖ Resembling a **large chariot** with **7 horses and 12 pairs of exquisitely decorated wheels**.

❖ The size of the wheel is of **9 feet 9 inches** in diameter and each one of them having **8 wider spokes and 8 thinner spokes.**

❖ Out of these **24 wheels 6** are in either side of the main temple, 4 wheels are on each side of the Mukhasala and 2 wheels on each side of steps at eastern front.

❖ The **huge wheels** of the **Konark Temple** are one of the major attractions in the Temple.

Significance:

❖ The wheels of the chariot have been interpreted as the **'Wheel of Life'**.

❖ They portray the **cycle of creation, preservation and achievement of realisation**.

❖ These 12 pairs of wheels may also possibly represent the **12 zodiac signs**.

❖ Some also believe that the Wheel of Konark is the same as the **Dharmachakra of the Buddhists** – **"The Wheel of Karma, The Wheel of the Law. "**

Konark wheels are used as **Sun dials** in ancient times to know the **time of the day.**

The Sun Temple:

❖ The Sun Temple at **Konârak,** located on the eastern shores of the Indian subcontinent.

❖ It is built in 13th Century by **King Narasimhadeva-I (AD 1238-1264).**

❖ The Sun Temple is the culmination of **Kalingan temple architecture**, with all its defining elements in complete and perfect form.

❖ **Components of the Temple:**

➤ **The vimana** (principal sanctuary) was surmounted by a high tower with **a shikhara (crowning cap),** which was razed in the **19th century**.

➤ To the east, the **jahamogana (audience hall)** dominates the ruins with its pyramidal mass.

➤ Farther to the east, **the natmandir (dance hall),** today unroofed, rises on a high platform.

❖ The Sun Temple is directly associated with the idea and belief of the personification of **the Sun God**, which is adumbrated in the **Vedas and classical texts**.

45

PLAN TO REVIVE MARITIME HERITAGE

Context: Recently, central government has planned to sail a 21-meter "stitched ship" made using ancient techniques, to a journey from Odisha to Indonesia's Bali, reviving maritime heritage in November 2025.

About the initiative:

◈ The project, an initiative of the Central government, along with the Navy, the Culture Ministry, and Goa-based shipbuilding company **Hodi Innovations**.

◈ It is expected to take **22 months** to complete.

◈ The ship has been planned to reach its destination during the **Bali Jatra festival** on **Kartik Purnima** to the island.

- Bali Yatra, a festival that commemorates the **rich maritime history of Odisha** is celebrated throughout the state.
- In the historic **city of Cuttack**, a week-long event is organised starting from the day of Kartika Purnima (full moon day in the month of Kartik i.e October-November).

Historical Linkage:

◈ The Kalinga Empire (present-day Odisha) is known for its glorious maritime history.

◈ Due to the **geographical location of Kalinga**, this area saw the growth of ports as early as the **4th and the 5th century BC.**

◈ The Kalingas constructed large boats called the **'Boitas'** and with the help of these, they traded with the Indonesian islands.

◈ As a result of these influences, the Balinese also celebrate Hindu Festivals such as **Shivaratri, Durga Pooja and Saraswati Pooja.**

- Some of the famous ports, **Tamralipti, Manikpatna, Chelitalo, Palur, Pithunda** allowed India to connect with other countries via the sea.
- Indian women perform '**Boita Bandana'**; they make boats of **paper or banana leaf (sholapith)** with lighted lamps inside and float them down the Mahanadi as a part of the celebrations.

Stitched Shipbuilding Method (Tankai method):

◈ It is a **2000-year-old technique** of shipbuilding, where ships are constructed by stitching wooden planks together rather than using nails, offering flexibility and durability, making them less susceptible to damage from shoals and sandbars.

◈ Although the **arrival of European ships** led to a shift in shipbuilding techniques, the art of stitching ships has survived in a **few coastal regions of India**, primarily for **small local fishing boats**.

Benefits:

◈ These ships are **more durable** as nails are not used.

◈ Also these ships **caused less damage** due to shoals and sandbars.

◈ For thousands of years they contributed to **trade, cultural exchange, and exploration**.

Significance of Project:

◈ **Reviving and Rejuvenation of Art**: Project will ensure the preservation of cultural heritage for future generations.

◈ **Promote Craftsm**anship: Project aims to leverage the expertise of the remaining traditional shipwrights in India and showcase their exceptional craftsmanship.

◈ **Revive Ancient Trade Links with Indian Ocean littoral countries**: The project seeks to gain insights into the historical interactions across the Indian Ocean, which facilitated the flow of Indian culture, knowledge systems, traditions, technologies, and ideas, by sailing along ancient maritime routes using traditional navigational techniques.

◈ **Cultural Pride:** Project will instill a sense of pride in India's rich maritime heritage among its citizens.

SHIVAJI'S HISTORIC WAGH NAKH

Context: In a significant development, the UK authorities have agreed to return the iconic 'wagh nakh,' a dagger shaped like tiger claws used by Maratha king Chhatrapati Shivaji Maharaj.

CURRENT AFFAIRS

MONTHLY /// SEPTEMBER, 2023

❖ The small weapon is currently part of **London's Victoria and Albert Museum**.

About:

❖ The **'wagh nakh,'**(Tiger Claws) an artifact **made of steel** with **four claws** mounted on a bar and two rings for the first and fourth fingers.

❖ This weapon holds historical significance as it was used by Shivaji Maharaj to kill **Afzal Khan**, the general of the **Bijapur sultanate in 1659**.

❖ It was designed to slash through skin and muscle.

❖ It holds a special place in the history for the people of Maharashtra.

❖ Its return symbolizes a significant milestone in the state's cultural legacy and the reverence it holds for its iconic leader, Chhatrapati Shivaji Maharaj.

Chhatrapati Shivaji Maharaj:

❖ He was born on 19th February 1630 at **Shivneri Fort** in District Pune in the present-day state of Maharashtra.

❖ He was born to **Shahaji Bhonsle**, a Maratha general who held the jagirs of Pune and Supe under the Bijapur Sultanate, and Jijabai, a pious woman whose religious qualities had a profound influence on him.

❖ Shivaji was not named after Lord Shiva. His name was derived from the name of a regional deity – '**Goddess Shivai**.'

❖ **Contributions:**

➤ He revived ancient Hindu political traditions and court conventions and promoted the usage of Marathi and Sanskrit, rather than Persian, in court and administration.

➤ India's **first-ever**

This year is been celebrating **350 years** of the coronation of **Chhatrapati Shivaji Maharaj**.
- The **Ashta Pradhan** (Marathi: Council of Eight) set up by the Chhatrapati Shivaji Maharaj
- Peshwa (Prime Minister)
- Amatya (Finance Minister)
- Shurunavis (Secretary)
- Waqia-Navis (Interior Minister)
- Sar-i-Naubat (Commander-in-Chief)
- Sumant (Foreign Minister)
- Nyayadhish (Chief Justice)
- Panditrao (High Priest)

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navy in the modern era was built by Shivaji to protect the coast of Maharashtra.

➤ He established a competent and progressive civil rule with the help of disciplined military and well-structured administrative organizations.

❖ He innovated military tactics, pioneering non-conventional methods (**guerrilla warfare**) and leveraged strategic factors like geography, speed, and surprise.

➤ He focused on pinpoint attacks to defeat his larger and more powerful enemies.

➤ A brave and genuinely secular ruler, he respected women and cared for the downtrodden and farmers.

❖ He died on **3rd April 1680.**

Who was Afzal Khan?

❖ He was a **17th-century commander** of the **Adil Shahi dynasty of Bijapur**.

❖ With Chhatrapati Shivaji's rise and increasing control of the region, Afzal Khan was seen as the man to subdue him in the Deccan.

❖ Khan put together a force of **10,000 cavalry** and marched from Bijapur to Wai, plundering Shivaji's territory along the way.

❖ Shivaji called a council of war at the **fort of Pratapgarh,** where most of his advisers urged him to make peace.

❖ During the meeting, an embrace between the two turned into an attack in which Shivaji emerged victorious. This was followed by a rout of the Adilshahi army at the hands of the Marathas.

❖ As per Maratha sources, Khan's remains were buried at the **fort and a tomb** was constructed on Shivajij's orders.

Important Battle:

Battle of Pratapgad, 1659	• Fought at the fort of Pratapgad near the town of Satara, Maharashtra, between the forces of the **Maratha king Chhatrapati Shivaji Maharaj and the Adilshahi general Afzal Khan.**
Battle of Pavan Khind, 1660	• Fought at a mountain pass in the vicinity of fort Vishalgad, near the city of Kolhapur, Maharashtra, **between the Maratha Sardar Baji Prabhu Deshpande and Siddi Masud of Adilshahi.**

47

Sacking of Surat, 1664	• Fought near the city of Surat, Gujarat, **between Chhatrapati Shivaji Maharaj and Inayat Khan,** a Mughal captain.
Battle of Purandar, 1665	• Fought between the **Mughal Empire and Maratha Empire.**
Battle of Sinhagad, 1670	• Fought on the fort of Sinhagad near the city of Pune, Maharashtra **between Tanaji Malusare, a commander of Maratha ruler Shivaji Maharaj and Udaybhan Rathod,** fortkeeper under **Jai Singh I** who was a Mughal Army Chief.
Battle of Kalyan, 1682-83	• **Bahadur Khan of the Mughal Empire defeated the Maratha army** and took over Kalyan.
Battle of Sangamner, 1679	• Fought between the Mughal Empire and Maratha Empire. This was the **last battle in which the Maratha King Shivaji fought.**

LADAKH AUTONOMOUS HILL DEVELOPMENT COUNCIL

Context: The Supreme Court invalidated Ladakh Autonomous Hill Development Council (LAHDC) election process from a notification recently, ordering a fresh notification within seven days i.e. till September 10.

About Ladakh Autonomous Hill Development Council:

◈ LAHDC, Leh is an **autonomous district council** that administers **the Leh district of Ladakh**.

◈ The council was created under the Ladakh Autonomous Hill Development Council Act of 1995.

◈ LAHDC-Leh has a total of **30 seats and four councillors** are nominated by the government.

◈ The executive arm of the council consists of an executive committee composed **of a Chief Executive Councillor and four other executive councillors.**

◈ The autonomous hill council work with **village panchayats** to take decisions on economic development, healthcare, education, land use, taxation, and local governance which are further reviewed at the block headquarters in the presence of the chief executive councillor and executive councilors.

Constitutional Provisions

◈ **Sixth Schedule:** The Sixth Schedule under Article 244 provides for the formation of autonomous administrative divisions — **Autonomous District Councils (ADCs)** — that have some **legislative, judicial, and administrative** autonomy within a state.

➤ The Sixth Schedule contains special provisions for the **administration of tribal areas** in the four north-eastern states of **Assam, Meghalaya, Tripura and Mizoram.**

➤ **Autonomous Districts**: The tribal areas in these four states have been constituted as autonomous districts.

➤ The governor is empowered to organise and re-organise the autonomous districts.

➤ The **acts of Parliament** or the **state legislature** do not apply to autonomous districts or apply with specified modifications and exceptions.

➤ The power of direction, in this regard, lies either with the President or Governor.

◈ **District Council**: Each autonomous district has a district council consisting of **30 members**, of whom four are **nominated by the Governor** and the remaining **26 are elected on the basis of adult franchise.**

➤ The elected members hold office for a **term of five years** (unless the council is dissolved earlier) and nominated members hold office during the pleasure of the governor.

➤ Each autonomous region also has a **separate regional council.**

Powers of the Council

◈ The **district and regional councils** administer the areas under their jurisdiction.

◈ They can make laws on certain specified matters like **land, forests, canal water, shifting cultivation, village administration,** and the **inheritance of property, marriage and divorce, social customs** and so on. But all such laws require the assent of the Governor.

◈ They can constitute village councils or courts for trial of suits and cases between the tribes. They hear appeals from them. The jurisdiction of the high court over these suits and cases is specified by the governor.

◈ The district council can establish, construct or manage **primary schools, dispensaries, markets, ferries, fisheries, roads** and so on in the district.

◈ They are empowered to **assess and collect land revenue** and to impose certain specified taxes.

SPECIAL SESSION OF PARLIAMENT

Context: Special Session of Parliament (13th Session of 17th Lok Sabha and 261st Session of Rajya Sabha) has been called from September 18-22 having 5 sittings.

What does a Special session mean?

◆ The Constitution does not mention the term "special session." The President, who summons a regular Parliamentary session will summon this session also as per provisions of **Article 85(1)** of the Constitution.

> The Constitution does not define a 'special session'; however, **Article 352 (Proclamation of Emergency)** of the Constitution does refer to a "special sitting of the House".

◆ The government determines the **date and duration of parliamentary sessions**.

◆ The **Cabinet Committee on Parliamentary Affairs** takes this decision.

◆ It currently has **ten Ministers**, including those for Defence, Home, Finance, Agriculture, Tribal Affairs, Parliamentary Affairs, and Information and Broadcasting.

◆ The **Law Minister and the Minister of State for External Affairs** are special invitees to the Committee.

◆ The President is informed about the Committee's decision, who then summons Members of Parliament to meet for the session.

Constitutional Provisions:

◆ The Constitution specifies that six months should not elapse between two parliamentary sessions.

◆ This provision is a colonial legacy. The framers of the Constitution borrowed it from the **Government of India Act of 1935**.

◆ It allowed the British Governor General to call a session of the central legislature at his discretion, requiring that the gap between two sessions should not be more than 12 months.

AYUSHMAN BHAV CAMPAIGN

Context: In an event set to redefine healthcare accessibility and inclusivity across the country, the President inaugurated the 'Ayushman Bhav' campaign on September 13, 2023.

About the initiative:

◆ **Aim:** The 'Ayushman Bhav' campaign is a **comprehensive nationwide healthcare initiative** that aims to provide saturation coverage of healthcare services, reaching every village and town in the country.

◆ This groundbreaking initiative builds upon the success of the **Ayushman Bharat program** and signifies a paradigm shift in healthcare services.

◆ **Initiated by:** The **Ministry of Health and Family Welfare.**

◆ The campaign, which will be implemented during **the 'Seva Pakhwada'** from September 17th to October 2nd, 2023, embodies a whole-of-nation and whole-of-society approach.

◆ It unites **government sectors, civil society organizations and communities** under a common mission to ensure that every individual receives essential health services without any **disparity or exclusion**.

◆ **Implementation:** The Ayushman Bhav campaign is a collaborative effort spearheaded by **Gram Panchayats** in coordination with the **Department of Health**, other government departments, and **local elected bodies** in the **rural and urban areas.**

◆ Its core objective is to extend comprehensive healthcare coverage to **every village and town**, transcending geographical barriers and ensuring that no one is left behind.

◆ This synergistic approach aims to saturate coverage of health services through its three components Ayushman - **Apke Dwar 3.0, Ayushman Melas at Health and Wellness Centres (HWCs) and Community Health Centres (CHCs) and Ayushman Sabhas** in every village and panchayat.

➤ **Ayushman Apke Dwar 3.0**: This initiative aims to provide **Ayushman cards** to remaining eligible beneficiaries enrolled under the PM-JAY scheme, ensuring that more individuals have access to essential health services.

➤ **Ayushman Melas at HWCs and CHCs**: These Melas at Ayushman Bharat- HWCs and CHCs will facilitate the **creation of ABHA IDs (Health IDs)** and issuance of Ayushman Bharat Cards.

➤ They will also offer early diagnosis, comprehensive primary health care services, teleconsultation with specialists, and appropriate referrals.

➤ **Ayushman Sabhas**: These gatherings in every village and Panchayat will play a pivotal role in distributing Ayushman cards, generating ABHA IDs, and raising awareness about vital health schemes and disease conditions, such as **non-communicable diseases, tuberculosis (Nikshay Mitra)**, sickle cell disease, as well as **blood donation and organ donation drives**.

49

◈ **Vision:** The Ayushman Bhav campaign is aligned with the vision of creating **'Healthy Villages'** and 'Healthy Gram Panchayats,' laying the foundation for achieving Universal Health Coverage in the country.

➤ Panchayats that successfully saturate the health schemes will earn the prestigious title of **'Ayushman Gram Panchayat'** or **'Ayushman Urban Ward**,' symbolizing their dedication to equitable healthcare provision.

PEARL MILLET CULTIVATION ZONES IN INDIA

Context: According to a new study, India's core pearl millet or Bajra production zone has shifted to 18 districts spread across eastern Rajasthan and Haryana between 1998 and 2017.

About the study:

◈ The study was conducted by **the International Crops Research Institute for the Semi-arid Tropics (ICRISAT)** and the **Indian Council of Agricultural Research – All India Coordinated Research Project on Pearl Millet (ICAR-AICRP).**

◈ It examined data from crop models and digital technology and suggested a revision of the **Indian pearl millet Total Population Environments (TPE).**

◈ It also suggested that an increase in rainfall triggered by **human-induced climate change** has led to the pearl millet zone shifting.

Pearl Millet and Zone Distribution in India:

◈ India classifies pearl millet cultivation zones based on **rainfall patterns and soil types**.

◈ **Zones are classified as;**

➤ The arid regions of Rajasthan, which receive less than 400 millimeters (mm) of rainfall, are categorized as **Zone 'A1'.**

➤ Semi-arid regions in north and central India, including **southern Rajasthan, Haryana, Gujarat, and Uttar Pradesh**, which receive more than 400 mm of rainfall per year, form **Zone 'A'.**

➤ Semi-arid regions with heavy soils in **southern India and central western India** with over 400 mm of rainfall from **Zone B.**

International Year of Millets:

Food and Agriculture Organization (FAO) and United Nations have recognized 2023 as **International Year of Millets** or IYM2023 for awareness about health and nutritional benefits of millets.

Key Findings of the study:

◈ **Sub-classifications:** The paper revised '**A' into three subzones** — **'G', 'AE1', and 'AE2'.**

➤ Zone 'G' covers Gujarat while AE1 covers eastern **Rajasthan and Haryana**.

➤ Zone 'AE2' covers 12 districts spread across Uttar Pradesh and Madhya Pradesh.

◈ 'AE1', which is now **India's core pearl millet production area** with 39 percent production, saw an increase in production of 46 kilograms per hectare, owing to an **increase in rainfall.**

◈ The researchers noted that **technological investments in irrigation, fertilization and new varieties** that favored intensified cultivation practices also led to an **increase in the zone's pearl millet production.**

◈ 'AE2' saw an average increase of 1,860 kg per hectare in bajra production between 1998 and 2017.

◈ **Shifting trends:** The paper also noted that **climate change** is contributing to more rainfall in **Zone 'G'** covering seven districts in Gujarat.

◈ This has led to farmers changing their cultivation patterns and switching from pearl millet to cash crops.

The Pearl Millet:

◈ The three major millets cultivated in India are **Jowar, Bajra, and Ragi**.

◈ Bajra is also known as **the pearl millet.**

◈ **Scientific name:** *Pennisetum glaucum*

◈ It is cultivated mainly in **the semiarid tropics**, almost exclusively by subsistence and small-scale commercial farmers.

◈ **Optimal temperature requirement**: Pearl millet grows best at temperatures between **27 to 32 degrees Celsius** (81 to 90 degrees Fahrenheit).
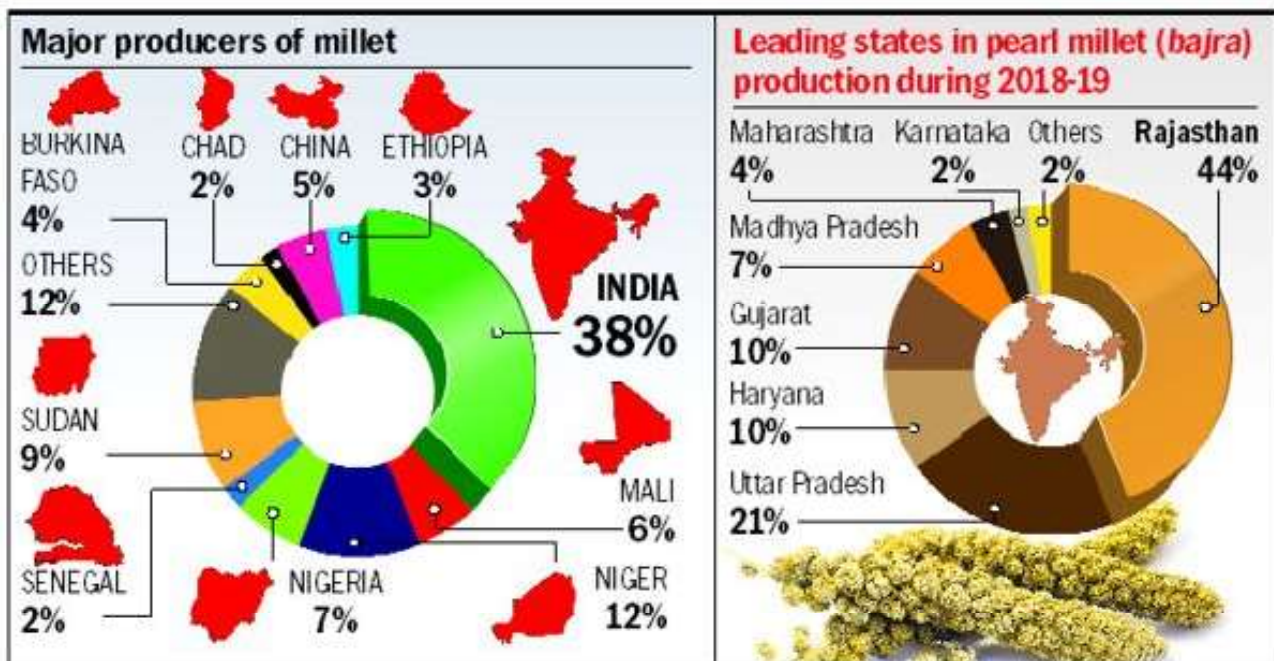
◈ **Temperature Tolerance**: Pearl millet is known for its ability to withstand **high temperatures**, even exceeding **40 degrees Celsius (104 degrees Fahrenheit).**

Significance:

◈ Pearl millet is gaining importance as a climate-resilient and health-promoting nutritious crop.

◈ Recent evidence using microsatellites suggests the **monophyletic origin of pearl millet** and its further **migration and secondary diversification** leading to enormous diversity.

A Scientific update:

● **Genetic erosion of landraces** has been evident in different pearl millet growing regions due to replacement with modern cultivars.

● Large variability found in **pearl millet germplasm** has been conserved in several gene banks.

● Toward enhancing the **utilization of pearl millet germplasm**, available subsets like core and minicore collections and reference sets should be extensively evaluated to identify trait-specific germplasm and develop genomic resources to associate sequence differences with trait variations.

Major producers of millet: India 38%, Others 12%, Burkina Faso 4%, Chad 2%, China 5%, Ethiopia 3%, Sudan 9%, Senegal 2%, Nigeria 7%, Niger 12%, Mali 6%.

Leading states in pearl millet (bajra) production during 2018-19: Rajasthan 44%, Uttar Pradesh 21%, Haryana 10%, Gujarat 10%, Madhya Pradesh 7%, Maharashtra 4%, Karnataka 2%, Others 2%.

HEATWAVES LEADING TO OZONE POLLUTION

Context: As per the World Meteorological Organization (WMO) Report, Climate change intensifies heatwaves, elevating wildfire risk and aggravating ozone pollution.

Highlights of the Report:

◈ According to the report, Heatwaves and wildfires are closely linked and the **Smoke from wildfires** contains a lot of chemicals that affect not only air quality and health, but also damage **plants, ecosystems, and crops** — and leads to more **carbon emissions and more greenhouse gases** in the atmosphere.

◈ Short-lived reactive gases such as **nitrogen oxides and biogenic volatile organic compounds** lead to the **production of ozone and particulate matter (PM).**

◈ **Concerns:**

➤ The increase in ozone levels impacted agriculture globally, with ozone-induced crop losses averaging **4.4 percent–12.4 percent for staples**.

➤ Losses for **wheat and soybean** were as high as **15 per cent-30 percent** in key agricultural areas of India and China.

How does ground-level ozone form?

◈ Tropospheric, or ground level ozone, is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC).

Urban heat islands:

Urban areas often consist of buildings and infrastructure reaching heights of 100 m or more, which influence wind and temperature patterns compared to surrounding rural areas.

◈ This happens when pollutants emitted by cars, power

51

plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight.

About Ozone:

◈ Ozone (composed of three atoms of oxygen) occurs both in the Earth's upper atmosphere (stratosphere) and at ground level (troposphere). It can be good or bad, depending on where it is found:

◈ **Good Ozone**: Ozone occurs naturally in the Earth's upper atmosphere (Stratosphere) where it forms a protective layer that shields us from the sun's harmful ultraviolet rays.

➤ Ozone-depleting gases like **chlorofluorocarbons (CFCs), HCFCs, and halons,** destroy this protective shield and cause a hole in the ozone.

➤ India had adopted the **Kigali Amendment** (aims to phase down hydrofluorocarbons).

◈ **Bad Ozone:** In the Earth's lower atmosphere (troposphere) near ground level, ozone is formed when pollutants emitted by **cars, power plants, industrial boilers, refineries, chemical plants**, and other sources react chemically in the presence of sunlight.

➤ Surface level Ozone is a harmful air pollutant.

Impacts of Ozone Pollution:

◈ Surface level Ozone causes damage to **crops and forests**.

◈ Irritation can occur in the **respiratory system** giving rise to coughs and an uncomfortable sensation in the chest.

◈ Ozone worsens bronchitis, emphysema, asthma, etc. and increases the risk and susceptibility to pulmonary inflammation like **Chronic Obstructive Pulmonary Disease (COPD).**

◈ It may reduce **lung function and make breathing difficult**

INDIA–BANGLADESH CONSENSUS TO SAVE SUNDARBANS

Context: As per a recent update, officials and experts from Bangladesh and India agreed in Kolkata for a joint stakeholder initiative, to raise climate-linked loss and damage in the Sundarbans at global platforms.

◈ The global platforms would include the **28th Conference of Parties (COP28)** to the United Nations Framework Convention on Climate Change which is going to held from **November 30-December 12** in Dubai, United Arab Emirates.

About the collaboration:

◈ Both the countries has noted that the **transboundary Sundarbans** are one of the global hotspots of climate change with increasing high intensity cyclones, sea level rise more than double the global average, and a high degree of erosion leading to large- scale forced migration of people.

● According to West Bengal government data, just three cyclones — **Bulbul, Amphan and Yaas** — caused losses of about **Rs 1.5 lakh crore**.

● Also, out of the total population at risk, nearly **five million** are in India and the rest in Bangladesh.

The Sundarbans Mangrove Forest:

◈ The Sundarbans mangrove forest, one of the **largest such forests in the world**, lies across India and Bangladesh on the delta of the **Ganges, Brahmaputra and Meghna rivers** on the Bay of Bengal.

◈ It is adjacent to the border of India's Sundarbans World Heritage site inscribed in 1987.

◈ The site is intersected by a complex network of tidal waterways, mudflats and small islands of salt-tolerant mangrove forests, and presents an excellent example of ongoing ecological processes.

◈ The area is known for its wide range of fauna, including **260 bird species**, the Bengal tiger and other threatened species such as the estuarine crocodile and the Indian python.

◈ It is home to many rare and globally threatened wildlife species such as the estuarine crocodile, Royal Bengal Tiger, Water monitor lizard, Gangetic dolphin, and olive ridley turtles.

Threat:

◈ The Sundarbans — a UNESCO World Heritage Site split between **West Bengal in India (40 per cent) and Bangladesh (60 per cent).**

◈ Climate change triggered problems in the Sundarbans.

◈ A sizeable population has already been affected multiple times, apart from on its unique ecosystem including Bengal tigers.

The project at Sundarbans is part of a global movement, **Project CAT (Conserving Acres for Tigers),** aimed at building healthy habitats for **Tigers by conserving six million acres** of protected land across four countries.

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Section D [QUICK BYTE]

- Galactic tides
- PM Modi to attend ASEAN, East Asia Summit
- PM-DAKSH
- Competition Commission of India
- Gramodyog Vikas Yojana (GVY)
- Sandes app
- International Finance Corporation
- Agriculture Infrastructure Development cess (AIDC)
- Toda community
- First herpetofaunal survey
- Mahendragiri
- IAF's annual training exercise- Trishul
- Scrub typhus

[CONCEPT IN NEWS]

- Backward evolution
- Ecocide

[PERSONALITY IN NEWS]

- Pandit Deendayal Upadhyaya (1916-1968)

[LOCATION IN NEWS]

- Morocco quake
- Scarborough Shoal
- Idukki dam
- Atlas Mountains

[SPECIES IN NEWS]

- Kakapo population (Strigops habroptilus)
- Pterygotrigla intermedica
- Vibrio vulnificus
- Rhinos

Galactic tides

Like the earth's oceans at their shores, the universe's galaxies also experience tides, but on a much larger scale called as Galactic tides.

About:

- Galactic tides refer to the gravitational forces exerted by one galaxy on another, leading to the deformation of the galaxies' shapes and affecting the distribution of stars within them.

- A galactic tide is the result of a tidal force imposed by a galaxy.

- If two galaxies pass sufficiently close (a galaxy collision or just a close encounter) their gravity can affect orbits of stars in the other (galaxy interaction).

- For example, disruptions such as a tidal arm or tidal tail can result, or a disk galaxy can lose its symmetry (an asymmetrical galaxy).

- An interacting galaxy is a galaxy displaying evidence of such interaction.

- A galaxy merger would be the most extreme interaction.

PM Modi to attend ASEAN, East Asia Summit

Prime Minister is going to Indonesia to attend the **20th ASEAN-India Summit** and **18th East Asia Summit.**

About Organisations:

- **ASEAN**

- **Founded in:** 1967

- Headquarters**:** Jakarta, Indonesia

- The **ASEAN (Association of Southeast Asian Nations)** is considered one of the most influential groupings in the region, and India and several other countries including **the US, China, Japan and Australia are its dialogue partners.**

- **East Asia Summit (EAS)**

- **Established in:** 2005

- Headquarters**:** Kuala Lumpur, Malaysia

- EAS is the Indo-Pacific's premier forum for strategic dialogue.

- It is the only leader-led forum at which all key Indo-Pacific partners meet to discuss political, security and economic challenges facing the region,

- The EAS has 18 members –

- the ten ASEAN countries (**Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam**) along with Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia and the United States.

- **ASEAN leads the forum**, and the chair position rotates between ASEAN Member States annually.

54

Cheriyal scroll painting

A **Cheriyal scroll painting** from Telangana is one of the gifts that first **ladies or spouses of heads** of state from around the world got who gathered for the G20 Summit in New Delhi.

About Cheriyal scroll painting:

- These paintings are one of the **oldest art forms of the region**, embodying its rich storytelling traditions.

- A narrative painting and performance tradition, Cheriyal scroll painting has been practised in the town of **Cheriyal in Siddipet district, Telangana** since the seventeenth century.

- Cheriyal scroll paintings are made by artists known **as Nakashis**, who belong to the **Madiga, Goud, Mudiraj, Mala, Padmashali, Chakali** and other non-dominant caste communities in the region.

- They are made on a long vertical piece of cloth in a narrative form. Traditional folk singers would narrate the stories using cheriyal as a tool for visual presentation.

- The size of paintings varies from 1 foot to 60 feet depending upon the number of characters depicted in the story on the painting.

- Their folktales form a major part of the narratives in the paintings, along with caste-specific renderings of tales from **the Puranas**, the **Mahabharata, and the Ramayana**.

- Historically, the scrolls were used as **illustrations for storytelling performances by travelling bards**

PM-DAKSH

During last three years of implementation from 2020-21 to 2022-23, a total of **107156 beneficiaries** have been trained and an amount of Rs. 213.83 crore has been spent under **PM-DAKSH**.

What is PM-DAKSH Yojana?

- PM-DAKSH **(Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi) Yojana** is a **Central Sector Scheme.**
- It was launched by the Ministry of Social Justice & Empowerment (MoSJ&E) in 2020-21.
- It is a **National Action Plan** for skilling marginalized persons covering **SCs, OBCs, EBCs, DNTs, Sanitation workers including waste pickers.**
- **Objective:** to increase the skill levels of the target youth by providing them short term and long term skills, followed by assistance in wage/self-employment.

Eligibility:

Candidates of age **group 18-45 years** belonging to any of the following categories can apply for the training programme under PM-DAKSH:

- Persons belonging to Scheduled Castes.

- Other Backward Classes (OBCs) having annual family income below Rs. 3 lakh.

- Economically Backward Classes (EBCs) having annual family income below Rs. 1 lakh.

- De-Notified, Nomadic and Semi-Nomadic Tribe (DNT).

- Safai Karamcharis (including waste pickers) and their dependants.

55

Competition Commission of India

Recently, the **Competition Commission** has approved Tata Group's proposed acquisition of **debt-laden Air India** as well as its two subsidiaries.

About the deal:

- The Rs.18,000 crore-deal that includes the winning bidder **Talace** taking over Rs.15,300 crore-**worth debt**, is a major step in the government's efforts over the years to revive the ailing airline.

The Competition Commission of India:

- CCI is a **statutory body** responsible for enforcing the **Competition Act, of 2002**; it was duly constituted in March 2009.
- The **Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act)** was repealed and replaced by the Competition Act, 2002, on the recommendations of the **Raghavan committee**.
- Composition:
  - The Commission consists of **one Chairperson and six Members** who shall be appointed by the Central Government.
  - The Chairperson and every other Member shall hold office as such for a term of five years from the date on which he enters upon his office and shall be eligible for re-appointment
- The Chairperson or other Members shall not hold office as such after he has attained the age of sixty-five years.

Gramodyog Vikas Yojana (GVY)

The Chairman of the Khadi and Village Industries Commission (KVIC), recently, distributed **toolkits and machinery to artisans in Bhubaneshwar**, Odisha, as part of the **Gramodyog Vikas Yojana.**

About Gramodyog Vikas Yojana:

- **Launched in:** 2020
- Gramodyog VikasYojana (GVY) scheme is for promotion and development of village industries through common facilities, technological modernization, training etc. & other support and services for promotion of village Industries.
- It is one of the two components of the **Khadi Gramodyog Vikas Yojana** which is a **Central Sector Scheme (CSS).**
- GVY has the following components/ verticals from the activities under Village Industries:
  - Wellness & Cosmetics Industry (WCI)
  - Handmade Paper, Leather & Plastic Industry (HPLPI)
  - Agro Based & Food Processing Industry (ABFPI)
  - Mineral Based Industry (MBI)
  - Rural Engineering & New Technology Industry (RENTI)
  - Service Industry

56

About KVIC:

- The Khadi and Village Industries Commission (KVIC) is a **statutory body.**
- It functions under the **Ministry of Micro, Small and Medium Enterprises.**
- **Objective:** to promote Khadi and other micro to medium scale industries in the rural areas.

Sandes app

Delhi Police has chosen '**Sandes' app,** an **Indian instant messaging service**, even for communication security breaches for the **upcoming G20 Summit**.

About the app:

- The mobile application, developed by the **National Informatics Centre** (NIC), was launched in August 2020.
- The app, an upgrade to the **Government Instant Messaging System** (GIMS), has undergone major updates making the platform more secure. GIMS was created for government officials only to provide them messaging software **similar to WhatsApp**.
- However, the Sandes app provides versions for **Android, iOS,** and desktop for both **individuals and government employees**.
- The app enables safe information transmission.
- Users can only access the documents they share on the app as they do so over a secure internet protocol.
- A message can be marked as **Confidential, on Priority, or Auto Delete**, according to the Sandes platform's official website.

International Finance Corporation

Shriram Housing Finance Limited (SHFL), an affordable housing finance company, and **International Finance Corporation (IFC)**, a member of the World Bank, announced a partnership to launch an **affordable green housing lending product for self-constructed homes.**

About:

- **Founded in:** 1956
- **Parent Organisation:** World Bank Group
- **Headquarters:** Washington, D.C. (United States)
- IFC provides financing of **private-enterprise investment** in developing countries around the world, through **both loans and direct investments**.
- It also provides advisory services to encourage the development of **private enterprise** in nations that might be lacking the necessary **infrastructure or liquidity** for businesses to secure financing.

Agriculture Infrastructure Development cess (AIDC)

The finance ministry notified that imports of LPG, liquified propane and liquified butane have been fully exempted from **Agriculture Infrastructure Development cess (AIDC).**

What is AIDC?

- AIDC is a tax that the government of India levies on **commercial agricultural production** in the country.

57

- The production capacity determines the charge rates.
- The government of India uses the amount collected through the Agriculture Infrastructure and Development Cess for **infrastructure building** all over the country.

About Cess:

- Cess is a kind of **special-purpose tax** which is levied over and above basic tax rates.
- Cess and surcharges are levied by the Central government for the purposes of the Union under **Article 271** of the Constitution of India.
- The proceeds of such surcharge and cess go towards meeting certain specific needs such as financing of centrally-sponsored schemes.

Toda community

The pastoral **Toda community** in the upper Nilgiris is losing its **Shola grasslands** as threats of **invasive species** are increasing.

About the community:

- Toda people are a **Dravidian ethnic group** who live in the **Nilgiri Mountains** of Tamil Nadu.
- During the 20th century, the Toda population has hovered in the range **700 to 900.**
- In the Toda language it is **called pohor.**
- The Toda traditionally live in settlements **called Mund**, consisting of three to seven small thatched houses.
- Their economy was pastoral, **based on the buffalo**, whose dairy products.
- **Fraternal polyandry** - a practice in which a woman marries all the brothers of a family - in traditional Toda society was fairly common; however, this practice has now been totally abandoned, as **has female infanticide**.
- The **traditional Toda dress** is a distinctive shawl which is called **putukuli**.
- It has got a **Geographical Indications (GI) Tag.**

First herpetofaunal survey

Resplendent Shrub Frog — Toad Skinned Leaping Frog — Cold Stream Torrent Frog

Anamala Spiny Lizard — Three-lined Shieldtail — Star Tortoise

As many as **67 species of reptiles** and **59 species of amphibians** were identified in the **first herpetofaunal survey** that concluded recently in the **South Wayanad Forest Division.**

Herpetology is the **branch of zoology** concerned with the **study of amphibians** (including frogs, toads, salamanders, newts, and caecilians (gymnophiona)) and reptiles (including snakes, lizards, amphisbaenids, turtles, terrapins, tortoises, and crocodilians.

Highlights of the survey:

- **About:** The five-day programme was organised jointly by the Forest department, South Wayanad Forest Development Agency, and Aranyakam Nature Foundation.

58

- **Species found:**
  - ➤ **The important amphibian species** recorded during the survey include Starry Night Frog, bearing a constellation of blue dots on its obsidian body; Miniature Night Frog, the tiniest frog in the country; and endangered species such as **Malabar Torrent Toad and Red Stream Toad.**
  - ➤ The survey commenced with the recording of the **Green Tree Frog** and culminated with a compendium of **59 amphibians**, of which over **80%** are uniquely found in the Western Ghats**.**
  - ➤ Of the **67 reptile species** sighted, 21 are unique to the Western Ghats.
- **Other species**:
  - ➤ Wayanad Dravidogecko, Nilgiri Spiny Lizard, and the Nilgiri Forest Lizard were found.

Wayanad Wildlife Sanctuary:

- Located in Kerala, **Wayanad Wildlife Sanctuary (WWS)** is an integral part of the Nilgiri Biosphere Reserve.
- It was established **in 1973.**
- **Kabini River** (a tributary of Cauvery River) flows through the sanctuary.

Mahendragiri

The Indian Navy's new warship, **Mahendragiri** has been launched recently in Mumbai.

About:

- **Developed by:** Mazagon Dock Shipbuilders Limited (MDL).
- Mahendragiri is named after a mountain peak in the Eastern Ghats of Odisha. It is the seventh ship of **Project 17A frigates series.**
- These warships follow the **Project 17 Class Frigates (Shivalik Class)** and boast enhanced stealth features, advanced weapons, sensors, and platform management systems.

Project 17A:

- Under the **Project 17A program**, a total of four ships by M/s MDL and three ships by M/s GRSE are under construction.
- The **first six ships** of the project have been launched so far by MDL & GRSE, between 2019-2023.

IAF's annual training exercise- Trishul

The annual training exercise, Trishul, of the Indian Air Force's (IAF) Western Air Command (WAC) began.

Key-highlights

- **Organised by:** IAF's Western Command
- **Aim:** to test the combat capabilities of the force and assess various operational dimensions.
- It is said to be one of the largest air exercises to be carried out by the Indian Air Force (IAF) in recent times.
- The fighter jets to be part of the drills **include Rafales, Su-30 MKIs, Jaguars, Mirage-2000s, MiG-29s and MiG-21 Bisons**.

Scrub typhus

Scrub typhus has been detected in as many as **732 people**, and five deaths from the illness have been recorded in **Himachal Pradesh** so far this year.

About:

- Scrub typhus is a form of bush typhus brought on by the bacteria Orientia tsutsugamush.
- It is a **rickettsial illness**. It is transmitted to **people via the bites of infected chiggers (larval mites).**
- It is a systemic illness and can present as a **vasculitis-like infection**.
- Chiggers, sometimes known as larval mites, are microscopic mites that can be found in rural and forested areas of Asia, the Pacific Islands, and some regions of Australia.
- It can be caused by fleas, mites, lice, and other pest bites.
- The typhus bacteria are spread by anthropods.
- Scratching the bite site makes the skin more susceptible to infection.

CONCEPT IN NEWS

Backward evolution
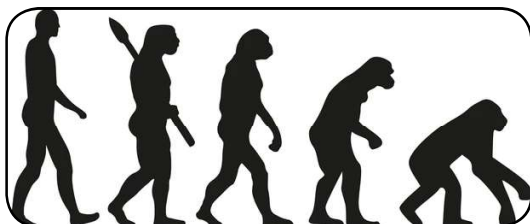
The Ulas family in Turkey's Hatay has baffled scientists for quite a long time because some of its members walk on using all hands and legs. Turkish scientists have called the family as proof of **'backward evolution'.**

What is backward evolution?

- Devolution, de-evolution, or backward evolution is the notion that species can revert to supposedly **more primitive forms over time.**
- One of the examples of this **is Penguins**, as their ancestors were able to fly, but they lost that ability quickly after the demise of the large dinosaurs.
- Research shows that, the **increased evolution** of selfless traits, such as **sharing food and keeping watch** for one another, is mathematically equivalent to the **decreased evolution of individually beneficial traits**.

Ecocide

Mexico has recently considered, passing a law to make **ecocide a crime**.

About:

- Ecocide refers to the severe and widespread harm or destruction of the environment, often due to human activities.
- Ecocide or '**killing one's home' or 'environment'** refers to acts like port expansion projects, deforestation, illegal sand mining, polluting rivers and releasing untreated sewage, etc., that destroy fragile natural ecosystems and local livelihoods.
- Ecocide is not yet recognized as **an international crime** but is gaining traction as a concept.
- It involves acts that result in the extensive **damage or destruction of ecosystems, biodiversity, or the natural environment.**

PERSONALITY IN NEWS

Pandit Deendayal Upadhyaya (1916-1968)

Recently, the birth Anniversary of **Pandit Deendayal Upadhyaya** was observed on 25th September.

About:

- He was born in Mathura, **UP in 1916**.
- He was an Indian politician.
- He was one of the most important leaders of the **Bharatiya Jana Sangh**, the forerunner of the present day **Bharatiya Janata Party**.
- He qualified the **civil services examination**, where he got his nickname as Panditji for appearing in the examination hall wearing traditional **dhoti-kurta and cap.**
- He however did not join the service, but became in 1942, a life-time volunteer of the **Rashtriya Swayamsevak Sangh (RSS).**
- However, Upadhyaya is seen to have played a larger role in India's thought process and political life, transcending party lines.

Major Schemes in his name:

- Deendayal Antyodaya Yojana (DAY) - integrating the NULM and NRLM for alleviating poverty.
- Deendayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) Antyodaya Diwas - to diversify the incomes of rural poor families and to cater to the career aspirations of rural youth.
- Deendayal Upadhyaya Gram Jyoti Yojana - to provide electricity to rural homes.
- Pandit Deendayal Upadhyaya Shramev Jayate Karyakram - to create a conducive environment for industrial development primarily through skill training.
- Deendayal Upadhyaya Swaniyojan Yojana (DUSY) - the rural version of the Start Up India scheme.

61

LOCATION IN NEWS

Morocco quake

Morocco witnessed one of the deadliest earthquakes of about 6.8 Magnitude recently.

About:

- The **earthquake's epicentre** was located **72 km (45 miles) southwest of Marrakech,** a city renowned for its historical and architectural treasures.
- The Moroccan government has **set up a fund** for those affected by the disaster and is providing relief in the **form of water, food, tents, and blankets**.
- Reports have confirmed the collapse of a historically important **12th-century mosque.**
- Parts of Marrakech's old city, a UNESCO World Heritage site, have also been damaged.

About the location:

- Morocco is a country located in **North Africa**, known for its remarkable geographical diversity.
- It features a diverse landscape that includes the **Atlas Mountains**, **Sahara Desert, fertile plains,** and a long coastline along **the Atlantic Ocean** and the **Mediterranean Sea**.

Strait of Gibraltar

- The **Strait of Gibraltar** connects the Atlantic Ocean with the Mediterranean Sea and separates Spain on the European continent from Morocco on the African continent.

Scarborough Shoal
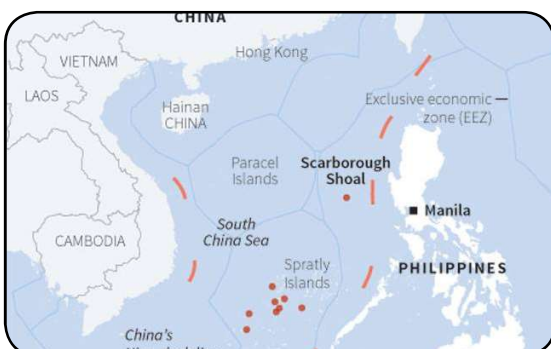
Scarborough Shoal is the disputed area between China and Philippines.

About:

- Scarborough Shoal is located in the eastern part of the South China Sea.
- It is uninhabited and shaped like an atoll consisting mainly of rocks and barely consists of any land except for very small islands.
- It is located at about 220 kilometers from the Philippines and is located inside the Exclusive Economic zone of the Philippines.
- Its location is much closer to the Philippines' shore as compared to the China's shore.
- It is also referred to as 'Bajo de Masingloc' and 'Panatag' by the Philippines and 'Huangyan Island' by China.
- The present name Scarborough was given after an East India company's ship named 'Scarborough' got grounded on one of the rocks in the atoll.

Idukki dam

- Idukki Dam is in the **Indian state of Kerala,** specifically in the district of Idukki.

- It is situated in the **Periyar River** and serves the purpose of generating hydroelectric power.

- Constructed between **1969 and 1973**, Idukki Dam stands as one of the **tallest arch dams in Asia**.

- This dam was constructed along with two other dams at Cheruthoni and Kulamavu.

- It was inaugurated by the then Prime Minister of India, Indira Gandhi, in 1976.

- The dam and its associated reservoir have significant ecological importance.

- It has led to the creation of a unique ecosystem in the area, with several species of flora and fauna thriving in the region.

- The forests surrounding the reservoir are part of the Idukki Wildlife Sanctuary, which is known for its rich biodiversity.

Atlas Mountains

Recently, scientist studied the epicentre of Morocco's devastating earthquake in the High Atlas Mountains, about **71km south-west of**

Marrakesh.

About Atlas Mountains:

- The Atlas Mountains are a fascinating range in north-west Africa, spanning Morocco, Algeria and Tunisia.

- They are situated south of the main Eurasia and Africa (Nubia) tectonic plate boundary.

- The Atlas Mountains in north-western Africa are the prominent structure in the boundary zone between the converging African and Eurasian plates in the western Mediterranean.

- The Atlas Mountains range extends over **500 kilometres** from the south of Iberia to the bottom of the Sahara.

- The stress along these fault lines can induce earthquakes as rocks abruptly shift to release accumulated stress, which is characteristic of a seismic fault.

SPECIES IN NEWS

Kakapo population
(*Strigops habroptilus*)

Context: The genetic mapping of almost the entire **kākāpō population** has discovered some **specific traits** that will help conservation biologists in their efforts to save these **parrot** species.

About the Species:

- **The Kakapo** (*Strigops habroptilus*), also called **owl parrot** is a giant flightless nocturnal parrot (family Psittacidae) of New Zealand.

63

- It is the **heaviest parrot in the world**, weighing up to 4 kilograms. It is also the only living species of parrots that cannot fly.
- With a face like an owl, a posture like **a penguin**, and a walk **like a duck**, the extraordinarily tame and gentle kakapo is **one of strangest and rarest birds** on Earth.

The total known population of living individuals is **247 as of 2023**.

- They only breed every few years, triggered by the availability of **certain forest foods** such as the fruits of the **native rimu tree**.
- **Threats to their population:**
  - kākāpō suffer from diseases such as the fungal infection **aspergillosis**.
  - Their eggs are also **infertile,** due to less breeding.
- Conservation status:
  - IUCN: Critically Endangered (IUCN Red List)
  - CITES: Appendix I

The Rimu fruit *(Dacrydium cupressinum):*

- The mature Rimu tree towers over the canopy with its weeping leaves and shedding bark.
- Rimu plays an integral role in the **mating cycle of the Kākāpō**.
- The periodic mast-seeding of Rimu every couple of years helps synchronise Kākāpō mating efforts.
- Unripe Rimu fruit acts as '**kākāpō viagra'** stimulating birds of both sexes into breeding, whereas the ripe fruit contains the perfect combination of nutrients and energy for growing chicks.
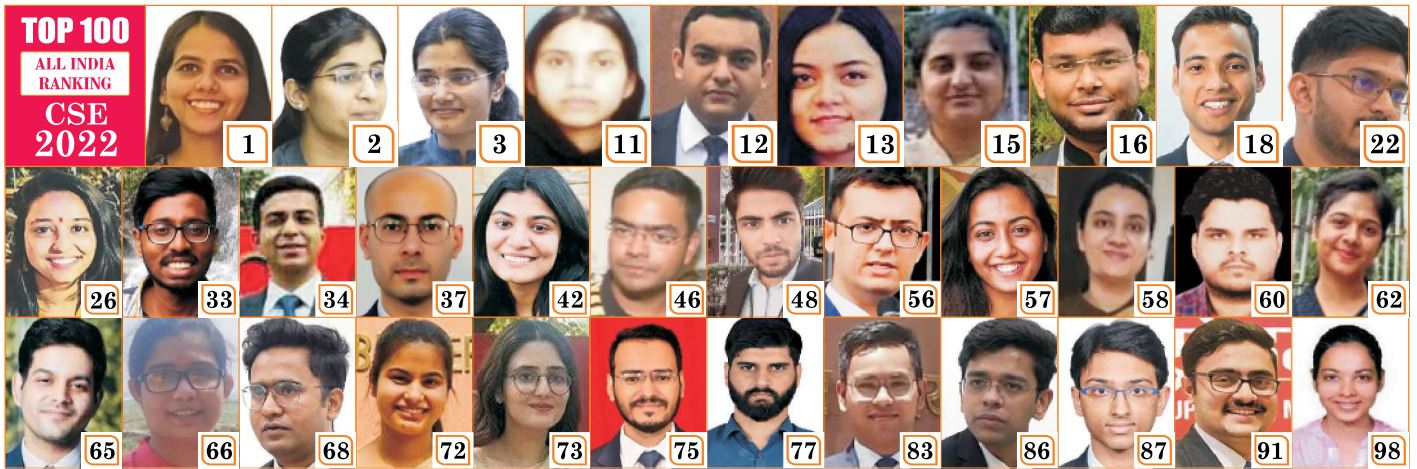
Pterygotrigla intermedica

The scientists of the **Zoological Survey of India (ZSI)** have discovered a new species of a vibrant orange coloured deep water marine fish of species ***Pterygotrigla intermedica*** in West Bengal.

About the Species:

- **Name:** Pterygotrigla intermedica
- **Commonly known as:** gurnards or sea-robins
- **Family:** Triglidae
  - There are a total 178 species of the Triglidae family worldwide.
- It is the fourth species of Pterygotrigla genus reported in India so far.
- Features:
  - It is a deepwater marine fish with a striking orange coloration and distinctive **bony head** adorned with pointed **rostral spines.**
  - Their pectoral fins are fan-shaped, with the bottom few rays each forming separate feelers.

➤ They are found in warm and temperate seas of the world.

Pterygotrigla is a genus of marine ray-finned fishes belonging to the family Triglidae, the gurnards and sea robins, one of two genera belonging to the subfamily Pterygotriglinae.

Vibrio vulnificus

Vibrio vulnificus is a bacterium found near oceans which can become a threat to coastal communities.

About the species:

- V vulnificus belongs to the same family as **Vibrio cholerae**, which causes cholera, a highly contagious diarrhoeal disease.
- Vibrio vulnificus is a bacterium that **causes septicemia**, severe wound infections, and gastroenteritis.
- Failure to recognize and treat this infection promptly leads to high **morbidity and mortality**.
- Most Vibrio infections are caused by eating raw or undercooked oysters or other shellfish.

Rhinos

World Rhino Day is celebrated on **September 22** every year to spread awareness about the need to protect and conserve all five species of rhinos.

About the species:

- Rhinoceroses are **large, herbivorous mammals** identified by their characteristic horned snouts.
- Characteristics:
    ➤ They are characterized by the possession of one or two horns on the upper surface of the snout. These horns are not true horns but are composed of keratin.
    ➤ Rhinoceroses are noted for their thick skin.
    ➤ All rhinos are gray or brown in colour, including the white rhinoceros, which tends to be paler than the others.
    ➤ Rhinoceroses have poor eyesight but acute senses of hearing and smell.
- **Conservation Status:** There are five species and 11 subspecies of rhino.
- Black rhinos**, Sumatran rhinos and Javan rhinos** are "critically endangered," which is the list's highest risk **category.**
- **Greater one-horned rhinos** are "vulnerable"
- **White rhinos** are "near threatened"

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