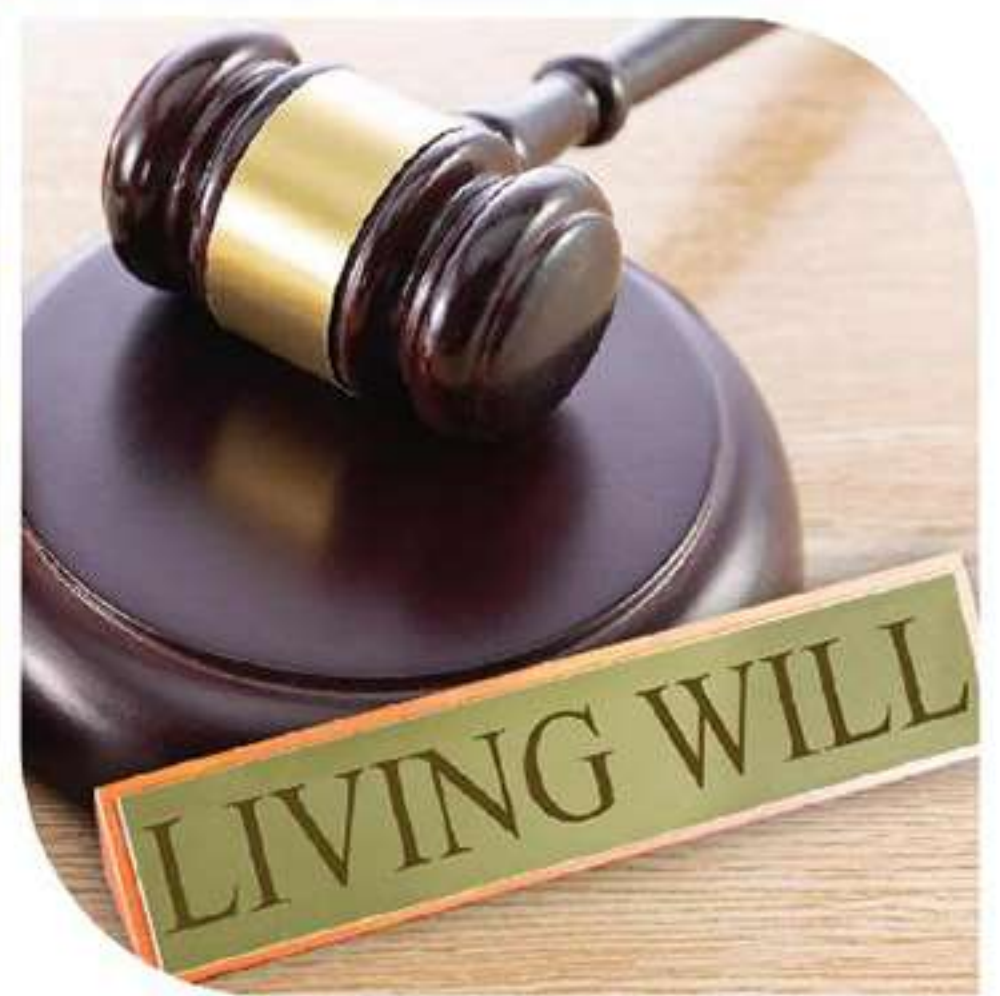


# CURRENT AFFAIRS MAGAZINE

## JANUARY 2023

- Avoid Further Delay in Conducting Census
- Generative AI
- Living will Guidelines
- Joshimath the Sinking Land
- India's dilemma in asian century





## Contents

Economic Survey Summary 2023.....	2	14. All India Survey on Higher Education (AISHE) 2020-2021.....	35
Budget 2023-24 Summary.....	7	GS 3.....	36
GS 1.....	14	1. It is crucial for India to embrace multi-domain operations .....	36
1. Avoid further delay in conducting the Census	14	2. Village Defence Committees.....	38
2. China's shrinking population and India's surging ahead: .....	15	3. LEPROSY.....	39
GS 2.....	17	4. The danger of deepfakes .....	40
1. India's dilemmas in an Asian century .....	17	5. Supreme Court's Verdict on Demonetisation .	41
2. Establishing Campuses of Foreign Universities in India: .....	18	6. Joshimath: the Sinking Land .....	42
3. The Indian Diaspora .....	20	7. Ozone Hole filling up now.....	44
4. Issues related to electoral reforms .....	22	8. Women to get Command Roles in the Indian Army .....	45
5. Special address of Governor: Constitutional history .....	23	9. What ails the Ken-Betwa River Link Project?..	46
6. There is hardly any autonomy at the panchayat level.....	24	10. Generative Artificial Intelligence (AI) .....	48
7. Living Will Guidelines .....	25	11. Fukushima Wastewater Problem .....	50
8. India's call to modify the Indus Waters Treaty	27	12. Digital Agriculture .....	50
9. Move to regulate online gaming.....	28	13. Padma Awards .....	52
10. Jallikattu: cultural practice or cruelty? .....	29	GS4.....	53
11. Stabilising ties with Nepal in uncertain times .....	31	1. A step towards fighting corruption .....	53
12. Issues Faced by Females in Sports: .....	32	Places in news: .....	55
13. Developing schools without barriers.....	33	Prelims Booster .....	58
		PIB.....	82
		MCQ.....	102



## Economic Survey Summary 2023

The Union Finance Minister tabled the Economic Survey for the Financial Year 2022-23, after the President's address.

The Economic Survey 2022-23 highlighted that India's economic recovery from the pandemic is complete and the economy is expected to grow in the range of 6% to 6.8% in the coming financial year 2023-24.

- ❑ The Economic Survey of India is an annual document released by the Ministry of Finance.
- ❑ It is usually presented in Parliament a day before the Union Budget. It is prepared by the Economics Division of the Department of Economic Affairs (DEA) under the guidance of the Chief Economic Advisor.
- ❑ It reviews the developments in the Indian economy over the previous 12 months and presents the economic outlook for the current fiscal year. It also presents the current state of the Indian economy, including data on gross domestic product (GDP), inflation, employment, and trade.
- ❑ The first Economic Survey in India was presented in the year 1950-51. Up to 1964, it was presented along with the Union Budget. From 1964 onwards, it has been delinked from the Budget.

### CURRENT CHALLENGES :

Indian economy still faces persistent challenges:

1. Depreciating rupee
2. Possibility of further US Fed interest rate hikes
3. The current account deficit (CAD)

### OUTLOOK 2023-24:

1. India's economic growth in FY23 is being led by **private consumption and capital formation**, generating employment.
2. The recovery of MSMEs is progressing, with the Emergency Credit Linked Guarantee Scheme (ECLGS) easing their debt concerns.
3. Global growth is projected to decline in 2023, but India's growth is expected to be swift in FY24 with a vigorous credit disbursement and capital investment cycle.

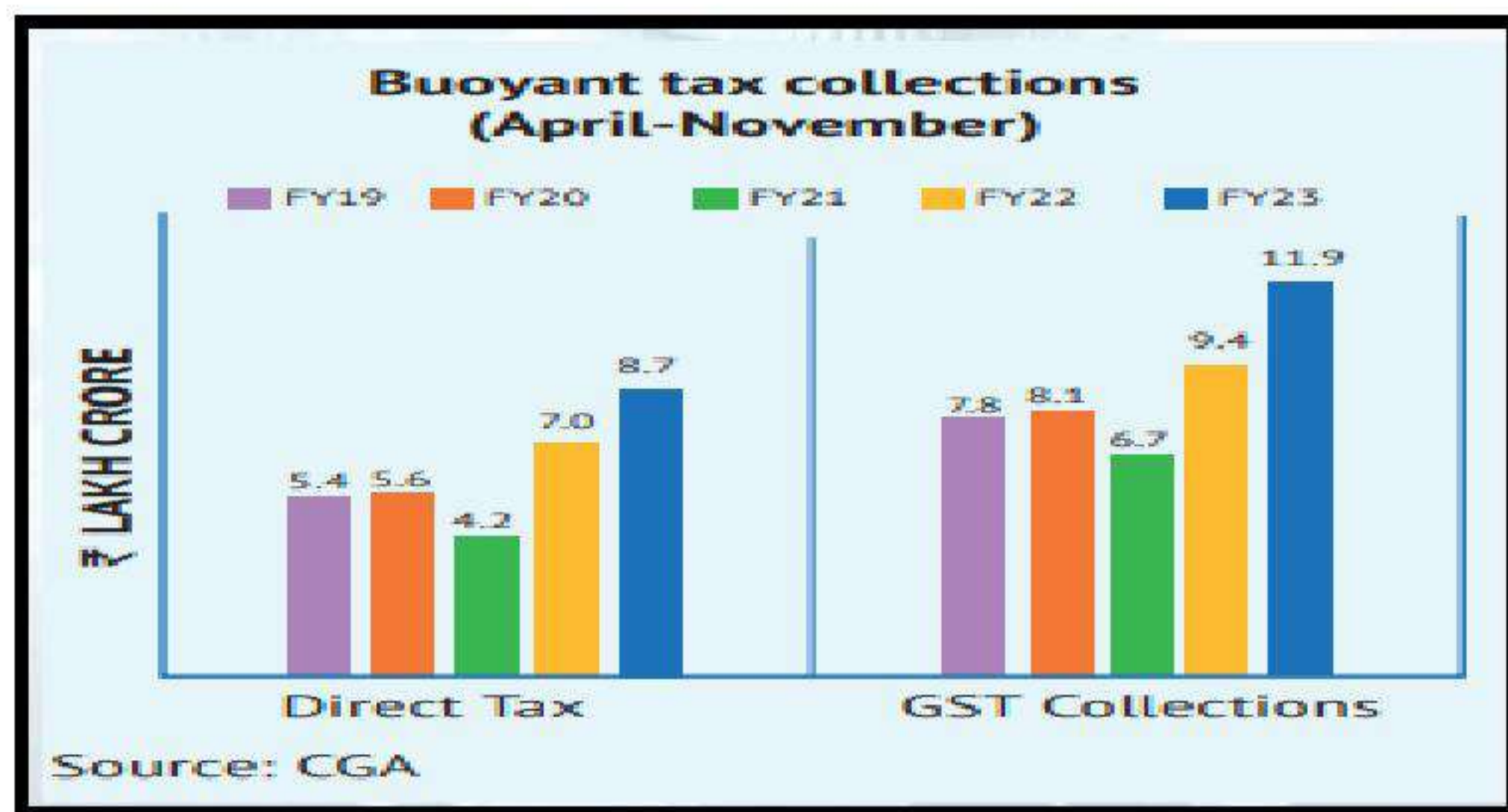
### IMPORTANT STATISTICS:

1. **GDP Growth:** GDP forecast for FY24 to be in the range of 6-6.8 %, depending on the trajectory of economic and political developments globally
2. **Private consumption:** Private consumption in first half of FY23 is highest since FY15 and this has led to a boost to production activity across sectors.
3. Capex of central government increased by 63.4% during first 8 months of FY23. Increase in private capex due to strengthening of corporate balance sheets and increase in credit financing. Capex multiplier effect will result in at least 4 times increase in economic output of the country.
4. Urban Unemployment Rate was at four-year low at 7.2% in September 2022. LFPR was



around 41.6% in 2020-21 (Rural + urban) compared to 40.1% in preceding year.

## 5. Comparison between Direct Tax Trend and GST Collections



**WHAT IS INDIA'S MEDIUM-TERM GROWTH OUTLOOK?** Context: The current decade is **similar to 1998-2002**, where **transformative reforms** had **delayed growth returns** due to **temporary shocks**, but **structural reforms** later paid growth dividend

**2014-2022 Period:** 2014-2022 is an important period in India's economic history with reforms aimed at improving the ease of living and doing business.

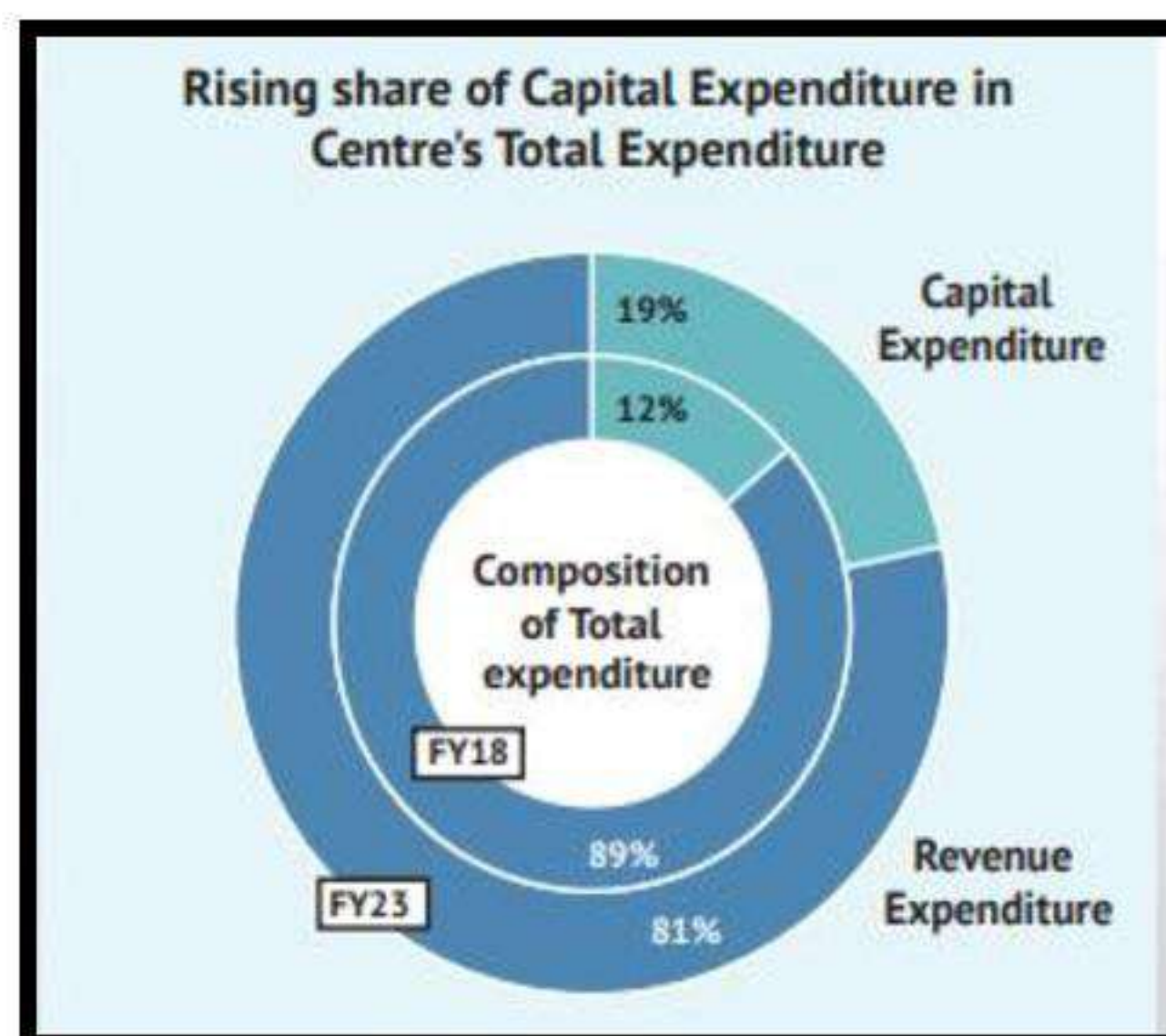
The reforms were based on creating public goods, trust-based governance, co-partnering with the private sector and increasing agricultural productivity. However, due to balance sheet stress and global shocks, key macroeconomic variables were negatively impacted during this period

1998-2002	2014-2022
<b>Shocks to the economy</b>	
<ul style="list-style-type: none"> <li>• Nuclear device testing 1998; sanctions followed</li> <li>• Banking and Corporate Sector deleveraging and repairing balance-sheets</li> <li>• Two successive droughts</li> <li>• Technology bust; US recession and 09/11</li> </ul>	<ul style="list-style-type: none"> <li>• Period of Banking, Non-Banking and Non-Financial Corporate Sector Balance-sheet stress</li> <li>• Unprecedented pandemic shock followed by inflation global commodity price shock followed by tightening of financial conditions</li> </ul>
<b>Structural reforms in the economy</b>	
<ul style="list-style-type: none"> <li>• Interest rate deregulation</li> <li>• Privatisation</li> <li>• Asset Recovery for banks</li> <li>• Infrastructure (Golden quadrilateral)</li> <li>• FRBM Act</li> </ul>	<ul style="list-style-type: none"> <li>• Unique Identity</li> <li>• Financial Inclusion</li> <li>• GST leading to formalisation</li> <li>• Insolvency &amp; Bankruptcy Code</li> <li>• Privatisation</li> <li>• Tax rates rationalisation and tax administration reforms</li> <li>• Decriminalisation of offences</li> <li>• Vaccines roll-out</li> <li>• Expenditure Management Reforms</li> <li>• AatmaNirbhar Bharat</li> <li>• Public Digital Infrastructure</li> </ul>



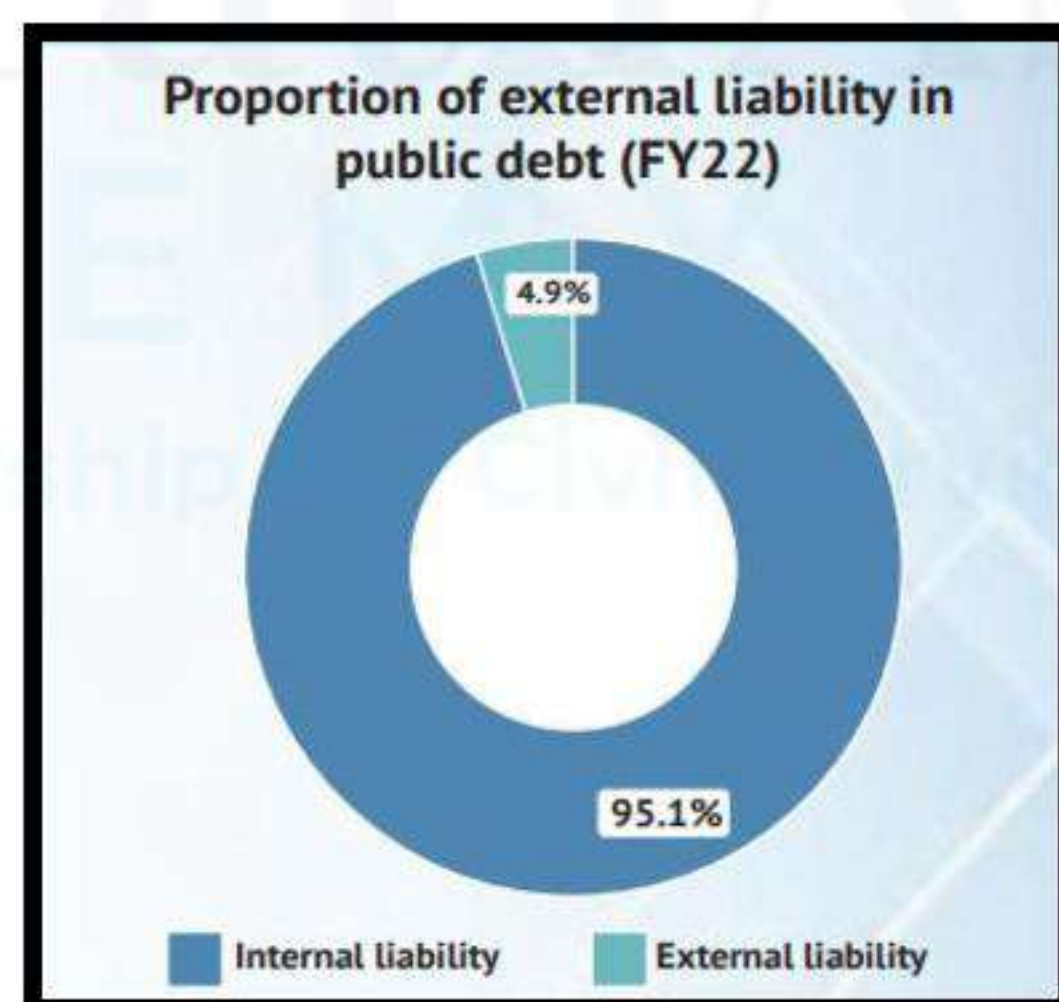
### FISCAL DEVELOPMENTS: REVENUE RELISH:

1. Fiscal Deficit: Government on track to achieve fiscal deficit target for FY23 (6.4% of GDP)
2. Expansion of tax net due to structural reforms like GST, digitalization of economic transactions.
3. Robust growth in the direct taxes (grew at 26% YoY) due to corporate and personal income tax growth
4. GST Tax payers doubled to 1.4 crore in 2022
5. **Capital Expenditure (Capex):** The Centre's Capex has steadily increased to 2.5% of GDP in FY22 PA (Provisional Actual) from 1.7% of GDP (FY09 to FY20). It is further budgeted to increase to 2.9% of GDP in FY23.
6. The General Government Debt to GDP ratio increased from 75.7% of end-March 2020 to 89.6% at end of pandemic year FY21.



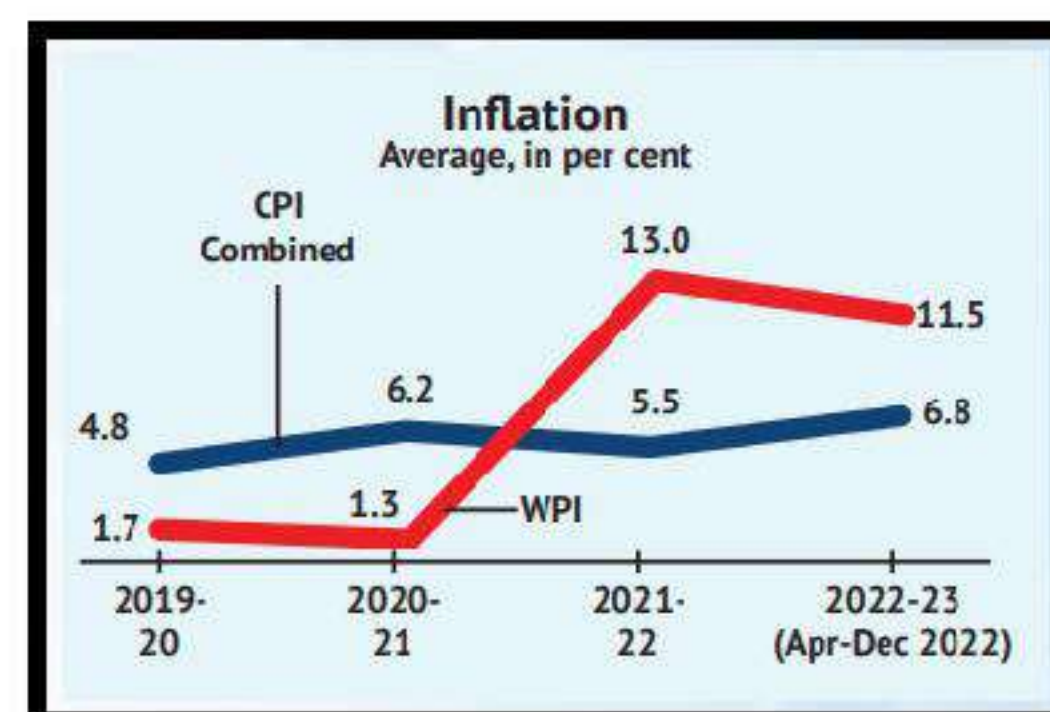
### MONETARY MANAGEMENT AND FINANCIAL INTERMEDIATION A GOOD YEAR:

1. **Banking Sector:** 4R's approach of **Recognition, Resolution, Recapitalisation and Reforms** to clean and strengthen the balance sheet of the banking system resulted in;
2. The **Gross Non-Performing Assets (GNPA)** ratio decreased from 8.2% in 2020 to 5.0% in 2022, which is a seven year low.
3. Insurance penetration and insurance density has been steadily increasing between FY13 to FY 22  
(**Insurance penetration:** It refers to the ratio of total insurance premiums to Gross Domestic Product (GDP) in a year. **Insurance density:** It refers to the ratio of insurance premium to population, i.e.; insurance premium per capita and is measured in US Dollar, as they reflect the level of development of the insurance sector in a country.)



### PRICES AND INFLATION: SUCCESSFUL TIGHT-ROPE WALKING

1. **Wholesale Price Inflation (WPI):** WPI started to increase in 2022 with a peak value of 16.6% in May 2022 (as economic activities resumed post pandemic and the Russia-Ukraine conflict alleviated it more) and it slipped to 5.0% by year end
2. **WPI and CPI trends:** Since 2021, there had been a divergence between the WPI and the CPI indexes, followed by a trend of convergence





- 3. Reasons for divergence:** The difference in relative weights of the two indexes and the lagged effect of imported input costs on retail prices.
- 4. Reasons for convergence:** A cooling in WPI inflation of commodities such as crude oil, iron, aluminium etc. along with the rise in CPI inflation (fuelled by the rise in services cost).

### **SOCIAL INFRASTRUCTURE AND EMPLOYMENT: BIG TENT**

1. The share of expenditure on social services in the total expenditure of the Government increased to 26.6% in FY23.
2. 16.4% of the population in India are multi-dimensionally poor (UNDP's Multi-dimensional Poverty report).
3. **Aspirational Districts Programme:** It was observed that many Aspirational Districts have performed better than non-aspirational districts in the context of financial inclusion
4. **Labour Reform Measures:** Majority of the states have adopted all the four labour codes
5. Over 28.5 crore unorganised workers have been registered on eShram portal (a National database of unorganised workers) with major enrolments from Agriculture, domestic workers and construction workers.

#### **A. Education**

- a. The enrolments increased across all levels of schooling i.e., **Primary, Upper-Primary, Secondary, and Higher Secondary** except for the Pre-Primary level (reduced from 1.1 crore to 1 crore in FY22).
- b. The total enrolment in higher education has increased to nearly 4.1 crore in FY21 from 3.9 crore in FY20
- c. **Female enrolment** has increased to 2.0 crore in FY21 from 1.9 crore in FY20.

#### **B. Health**

- a. Central and State Government's budgeted expenditure on health sector touched 2.1% of GDP in FY23 (BE) and 2.2% in FY22 (RE) against 1.6% in FY21.
- b. Out of-Pocket Expenditure as a percentage of Total Health Expenditure has declined substantially from 64.2% in FY14 to 48.2% in FY19.

#### **C. Rural Economy**

- a. Around 65% of the entire population of the country live in rural areas, of which nearly 47% of them are dependent on agriculture.
- b. The quality of rural lives, including, inter alia, access to electricity, presence of improved drinking water sources, coverage under health insurance schemes, have improved significantly (National Family Health Survey 2019-21)
- c. **Deendayal Antyodaya Yojana-National Rural Livelihood Mission:** The Mission has mobilised a total of 8.7 crore women from poor and vulnerable communities into 81 lakh SHGs.
- d. **Pradhan Mantri Awaas Yojana –Gramin:** A total of 2.7 crore houses have been sanctioned and 2.1 crore houses have been completed so far under the scheme.

### **CLIMATE CHANGE AND ENVIRONMENT: PREPARING TO FACE THE FUTURE**



1. India is one of the most vulnerable regions to climate change. Although it contributes only about 4% of cumulative global emissions (for 1850-2019)
2. India achieved its target of 40% installed electric capacity from non-fossil fuels ahead of 2030.
3. National Green Hydrogen mission: Green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum to be developed by 2030.

#### AGRICULTURE, INDUSTRY, SERVICES

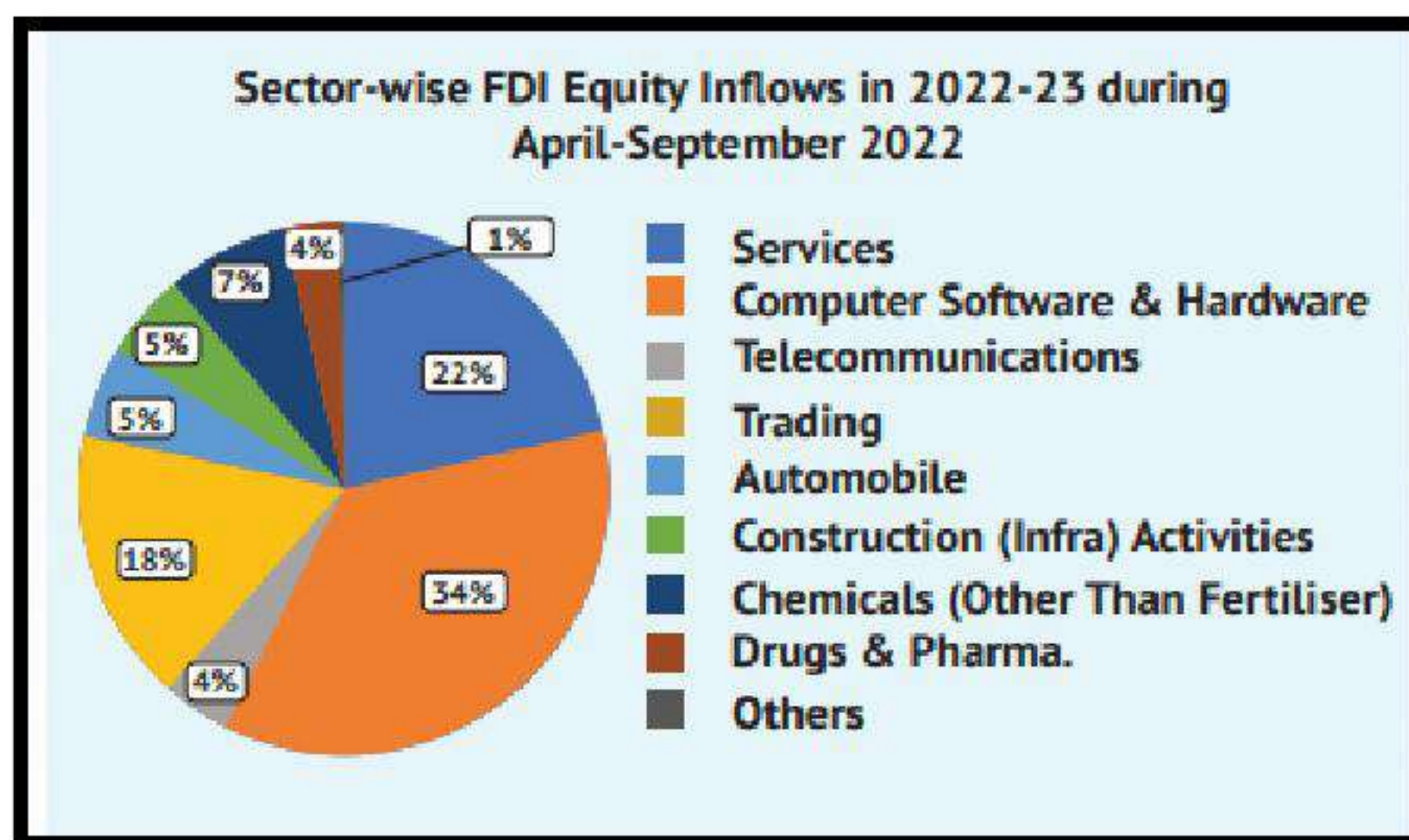
1. Kisan Credit Card (KCC) facility extended to fisheries and animal husbandry farmers in 2018-19

2. Private investment in agriculture increases to 9.3% in 2020-21.

3. The dairy sector is the most critical component

of the livestock sector, employing more than eight crore farmers directly.

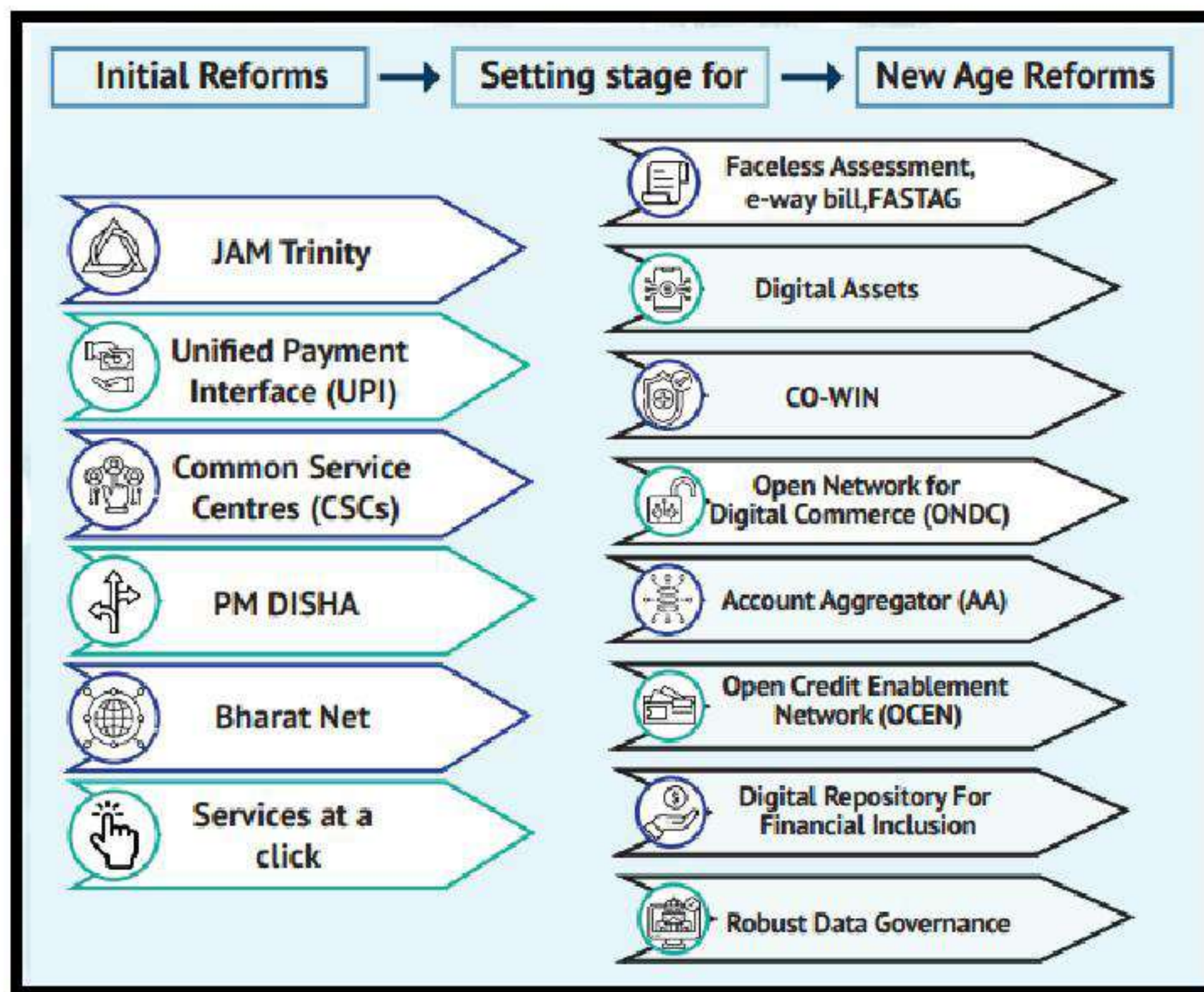
4. There are 8.5 lakh registered cooperatives in the country, and 98% of villages are covered by Primary Agriculture Credit Societies (PACS).
5. The industry sector contributed about 30% of the total gross value added in the country during FY12 and FY21 and employed over 12.1 crore people.
6. India became the 3rd largest automobile market (in Dec 2022), surpassing Japan and Germany in terms of sales
7. India's services exports remained resilient due to higher demand for digital support, cloud services, and infrastructure modernization. India was among the top 10 services exporting countries in 2021.
8. The World Investment Report 2022 of UNCTAD places India as the 7th largest recipient of FDI in the top 20 countries in 2021.



#### EXTERNAL SECTOR AND DIGITAL INFRASTRUCTURE:

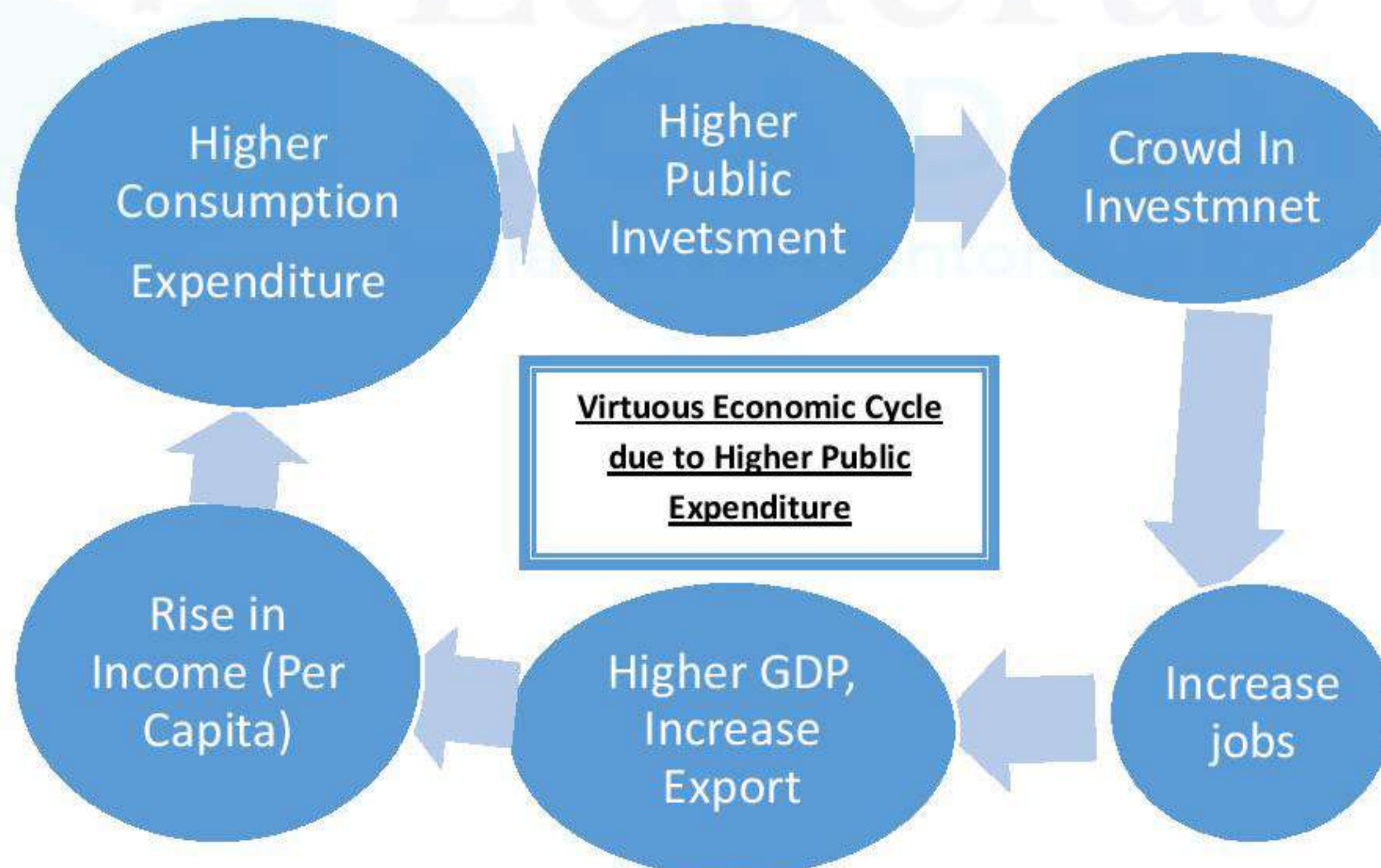
1. Petroleum products, gems & jewellery, organic & inorganic chemicals, drugs & pharmaceuticals were among the leading export items.
2. India's services exports stood at US\$ 254.5 billion in FY22 recording a growth of 23.5% over FY21
3. Software and business services together constitute more than 60% of India's total services exports
4. India is the 6th largest foreign exchange reserves holder in the world
5. In the year 2022, India signed Economic Cooperation and Trade Agreement (ECTA) and Comprehensive Economic Cooperation Agreement (CECA) with Australia and UAE, respectively
6. India diversified its markets and increased its exports to Brazil, South Africa and Saudi Arabia
7. UPI-based transactions grew in value (121%) and volume (115%) terms, between 2019-22. Overall tele-density in India stood at 84.8% in March 22. 200% increase in rural internet subscriptions between 2015 and 2021





## Budget 2023-24 Summary

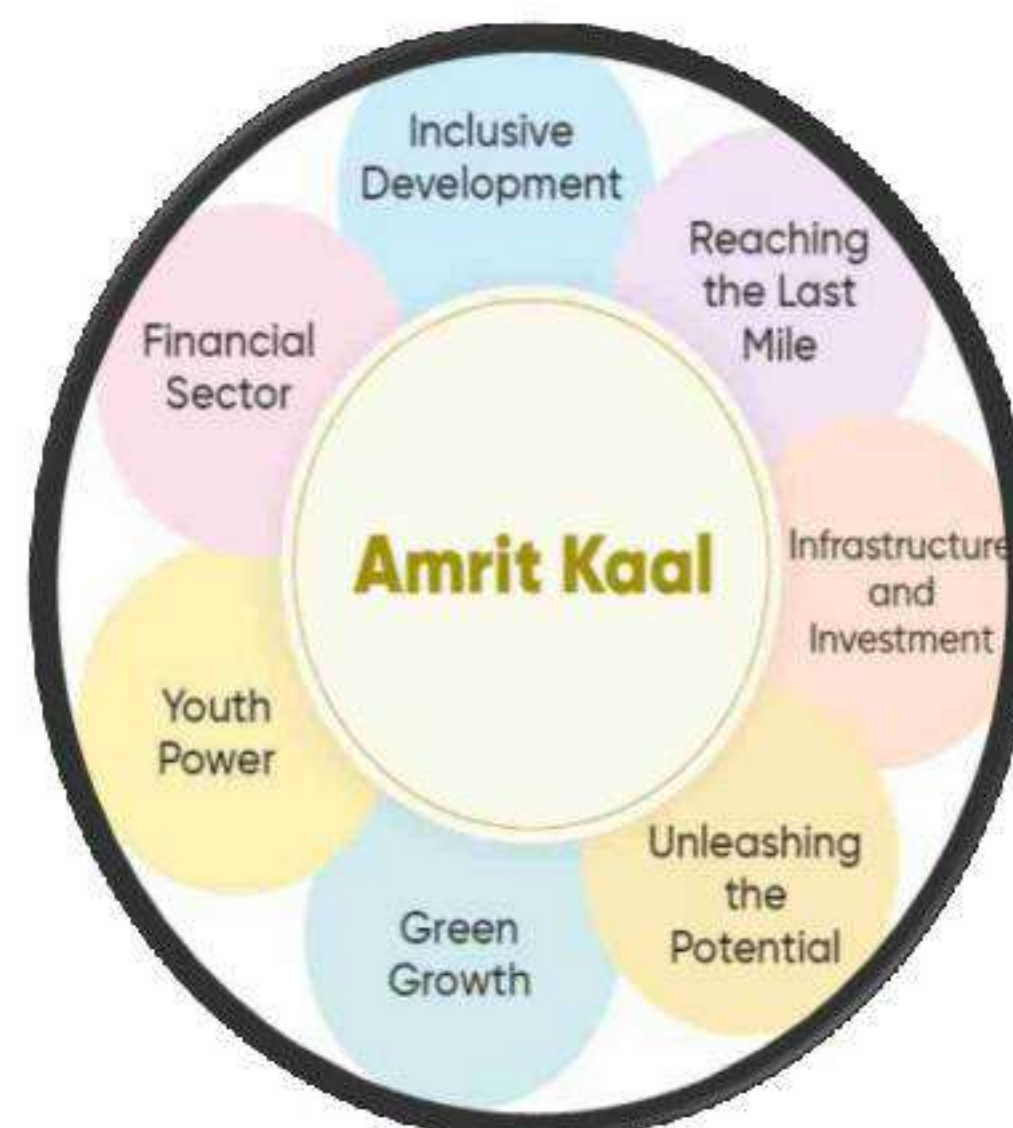
### 1. BLUE PRINT FOR AMRIT KAAL:



### Saptarishi Priorities Model:

The budget adopts following seven priorities -- inclusive development, reaching the last mile, infrastructure and investment, unleashing the potential, green growth, youth power and financial sector





### 3. Agriculture: Digital Technologies in Agriculture

**a. Budget Proposal:** Agriculture Accelerator Fund to support Agri-Tech Startups

#### b. Challenges:

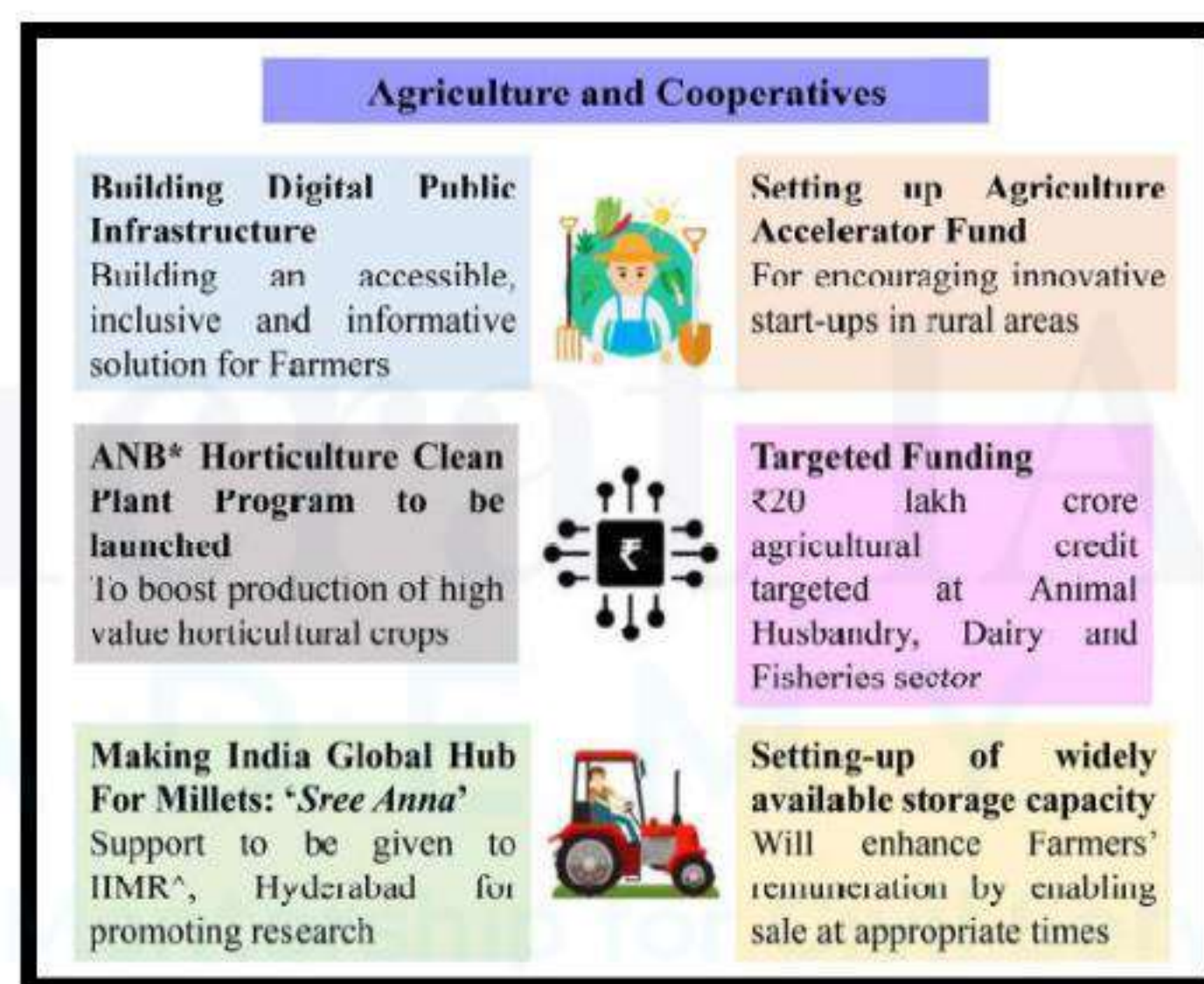
1. Fragmented Landholdings
2. Affordability of rural farmers
3. Lack of enabling policy framework
4. Poor skill set
5. Lack of extension
6. Poor Internet Connection
7. Low Awareness

#### c. Initiatives :

- KISAN SUVIDHA App
- Farm Mechanization through Apps
- E-NAM d.AGMARKNET
- KISAN CREDIT Cards
- KISAN Call Centers
- Niti Aayog Pilot project on Agriculture Precision
- Funds of Funds to promote Agri-Startups

#### d. Benefits:

- i. Better Access to Inputs (e.g Jaikishan Loans)
- ii. Enhanced Productivity (Fasal AI, Big Data)
- iii. Ensure higher prices (E-NAM)
- iv. Reduce Post Harvest Loses
- v. Enable Farm Mechanization



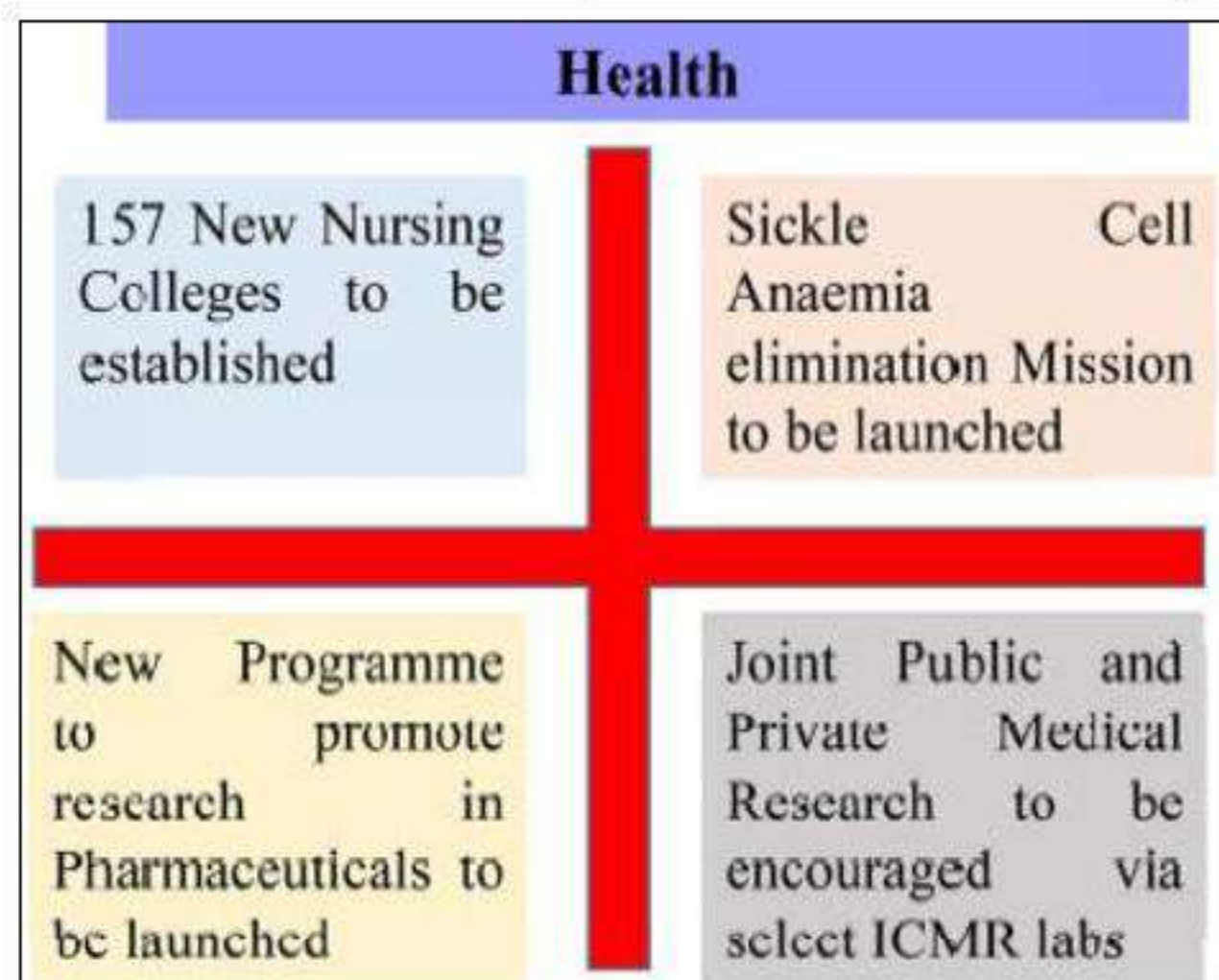


The Dalwai panel has highlighted Digital technologies as the key enabler for doubling Income levels of the farmers. Going forward, these constraints and challenges should be addressed at the earliest so that the Agriculture sector reaps the benefits of ICT.

**Practice Question :** “Digital technologies have the potential to address the problems faced by Indian agriculture” In the light of this, discuss various challenges in the adoption of e technology for the benefit of the farmers (10 Marks, 150 Words)

4. **Health :** The Union Budget 2023-24 allocated Rs 89,155 cr to the Ministry of Health and Family Welfare, nearly 3.4 per cent increase in comparison to Rs 86,200 cr in FY 2022-23.

- The healthcare sector is currently witnessing an increase in access to patients and citizens via the launch of digital and mental health programs (National Tele Mental Health Programme was allocated Rs 134 cr) providing opportunities to human resources, hospitals, and investors in the sector.
- The need of the hour is a clear implementation roadmap of the new and flagship schemes with a focus on monitoring the impact and outcomes in India.

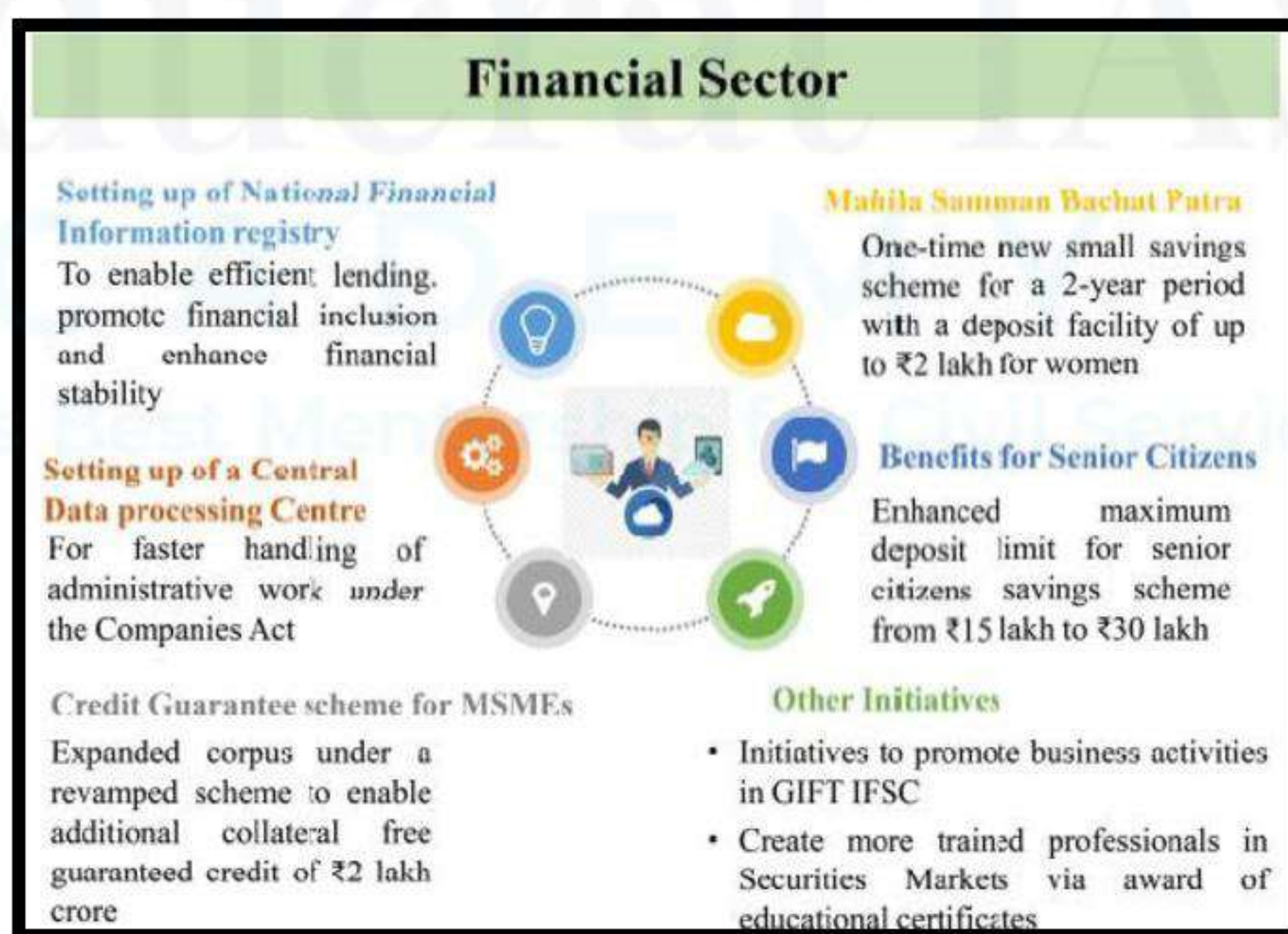


5. **Financial Sector :**

A. **National Financial Information Registry**

I. **Importance of Credit Information:**

- Credit information provides the past information of the borrowers and their ability to pay future loans.
- Helps bank in practicing sound lending practices by assessing good and bad borrowers



II. **Present Status:**

- Four Credit Information Companies:** 1. CIBIL · 2. EQUIFAX · 3. EXPERIAN · 4. CRIF High Mark Credit Information Services
- Credit Information Companies in India are licensed by the **Reserve Bank of India** and governed by the Credit Information Companies Regulation Act, 2005.

III. **Challenges:**

- Overlapping activities and lack of coordination among the Credit Information Companies
- Information collected is limited, for example, first time loan takers provide minimum to no information



c. Ancillary Information such as Tax Paid, Balance Sheet of the companies not captured

**IV. The Y.M. Deosthalee committee was set up by RBI for this purpose and had submitted its report in 2018.** The major recommendations:

RBI should set up a Public Credit Registry in due course and this should be backed by a legal framework. The central bank may also consider moving such registry to a separate non-profit entity. PCR will work as a repository of all loan contracts, duly verified by reporting institutions for all / any lending in India, regardless of the amount of the loan.

**V. Budget 2023-24-** The national financial information registry announced in the 2023-24 Union Budget is aimed at **expediting loan sanctions and credit flows by offering lenders a “360 degree” perspective on potential borrowers**

**VI. Benefits-**

- a. Credit-to-GDP ratio will improve
- b. Adverse selection could minimize, and sound lending practice will be followed with better access of information
- c. Loan disbursement will be faster

**6. Tax Proposals-**

**A. Budget 2023 direct tax proposals aim to maintain continuity and stability in taxation, simplify and rationalise various provisions to reduce compliance burden, promote entrepreneurial spirit, and provide tax relief to citizens.**

**The following is a summary of the direct tax proposals in the Finance Bill 2023:**

- a. Common Income Tax Return (ITR) Form
- b. Strengthening of the Grievance Redressal Mechanism
- c. Increase of Tax Rebate limit to Rs. 7 lac
- d. Increase of Tax Exemption Limit/ Slab to Rs. 3 lac
- e. Benefit of Standard Deduction to be extended to New Tax Regime
- f. Increased limit for leave encashment exemption In Budget 2023, the Finance Minister proposed raising the limit for tax exemption on leave encashment on retirement for non-government salaried employees to Rs. 25 lakh.
- g. New Tax Regime to be made Default Tax Regime
- h. Budget 2023 proposes increased limits for micro, small, and medium-sized enterprises (MSMEs) and certain professionals to take advantage of presumptive taxation. The increased limit will apply only if the amount or total amount received in cash during the year does not exceed 5% of total gross receipts or turnover. The budget describes MSMEs as the growth engines of our economy and proposes increased limits for microenterprises and certain professionals to take advantage of presumptive taxation.
- i. Relief to Cooperative Sector

**B. Highlights of the Indirect Taxes Proposals of Finance Bill 2023- (In the adjacent figure)**



## 7. Unleashing the Potential through Good Governance

Following proposals facilitate **Maximum Governance model**:

**Jan Vishwas Bill:** Introduced for furthering the trust based governance and amend 42 Central Acts

**National Data Governance Policy:** To unleash innovation and research by start-ups and academia

**Centres of Excellence for Artificial Intelligence:** For realizing the vision of “Make AI in India and Make AI work for India”, three centres of excellence for AI will be set-up

**Simplification of Know Your Customer (KYC) process:**

Adopting a ‘risk-based’ instead of ‘one size fits all’ approach.

One stop solution for identity and address updating: By using DigiLocker service and Aadhaar as foundational identity

**Common Business Identifier:** The PAN (Permanent Account Number) will be used as the common identifier for all digital systems of specified government agencies.

## 8. Budget 2023: Horticulture industry hails Rs 2,200-cr fund for disease-free planting material:

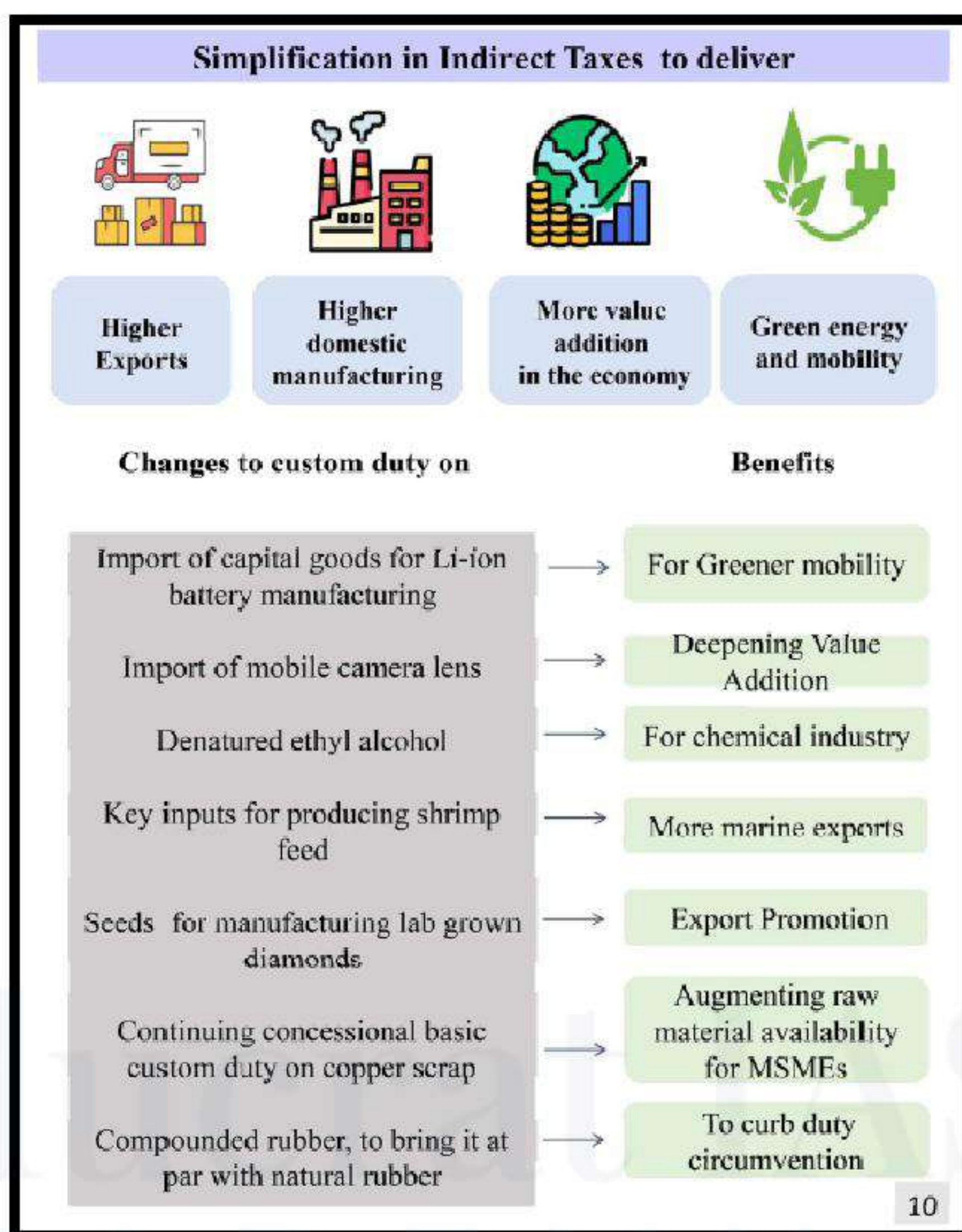
Earlier, the National Horticultural Board raised concerns about the **paucity of quality plant material**. It said the **inadequate availability of quality planting material was one of the primary reasons for the low productivity of various horticulture crops in India**.

**Budget Proposal:** Atmanirbhar Clean Plant Program to be launched with an outlay of Rs. 2,200 crore to boost availability of quality planting material for high value horticultural crops agriculture accelerator fund to be set-up to encourage agri-startups in rural areas

- Setting up Clean Plant Centers across the country
- To be implemented by National Horticultural Board

**Present Status-** India is the second-largest producer of horticulture crops globally (leading production of various fruits)

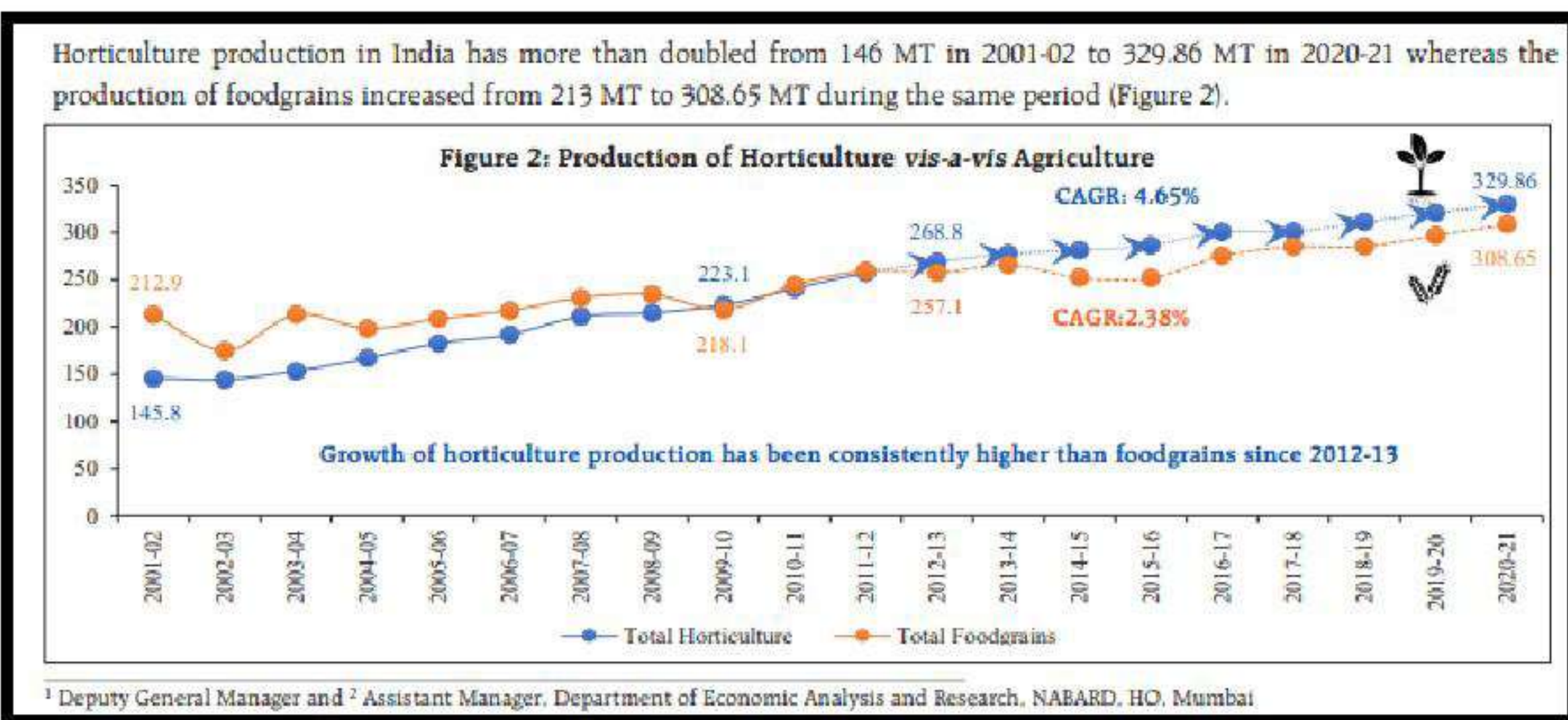
- Fruits, vegetables, flowers, and herbs are all grown in horticulture, a subfield of agriculture.





- The horticulture sector in India produces around 320 million tons of products and contributes about 33% of the Gross Value Addition (GVA).
- It is a labour-intensive sector and thus provides a lot of employment opportunities, especially for the people of rural regions.
- 10% of the land in India is used for horticulture

**Importance:** 1. Nutritional Security, 2. Enhance Income levels, 3. Promote Secondary



### Aim and Objectives-

1. Quality Planting Materials
2. High Density Plant Plantation
3. Rejuvenation of senile orchards
4. Post Harvest Management

### Challenges:

- Horticulture does not enjoy a safety net like **the Minimum Support Price (MSP) for food grains**.
- Lack of **good cold chain storage and transport networks** to extend the life of perishable products.
- Very less or **limited input by machinery and equipment** so it is tough to minimize the time restraints.
- Higher **input costs than food grains** make it a difficult set up, especially when there is no support from the local governments to the smaller farmers.
- It gets challenging for marginal farmers to cope with the **high price fluctuations**.
- Limited availability of **market intelligence**, mainly for exports makes it a tougher option to choose.

### Suggestions-

- Achieve technology led development in Horticulture.
- Post harvest & value addition in horticulture crops.
- Modified atmosphere packaging for long storability & transportation of fruits & vegetables.
- Insect pollinators and HYV of seeds for improving productivity and quality of the crops.
- Development of varieties for cultivation in non-traditional areas.



- Bioenergy and solid waste utilisation to make horticulture more efficient and eco-friendly.
- Plan, coordinate and monitor R&D programmes at national level as well as to serve as knowledge repository in Horticulture sector.
- Focus on 'Horticulture Plus' – E.g Cashews, Spices etc.
- Expansion in area through peri-urban horticulture

### **Practice Questions**

- ☐ Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers? ( Mains 2018)
- ☐ What do you think are the opportunities and challenges in the promoting Golden Revolution in India? Also, suggest some strategies to address these challenges.



## GS 1

### 1. Avoid further delay in conducting the Census

The decennial Census exercise has been **postponed till September 2023**.

#### Census:

The **census** provides information on **size, distribution demographic, socio-economic and other characteristics** of the country's population.

A systematic and modern population census in its present form was conducted **non synchronously between 1865 and 1872** in different parts of the country.

However, **the first synchronous census in India** was held in **1881**. Since then, **censuses have been undertaken uninterruptedly once every ten years**.

Since **1949** the census has been conducted by the **Registrar General and Census Commissioner of India** under the **Ministry of Home Affairs, Government of India**.

**India's last census was carried out in 2011** when the country's population stood at 121 crore. The **Indian Census is one of the largest administrative exercises** undertaken in the world.

- The Constitution talks about the use of Census data for the **delimitation of constituencies and for determining the quantum of reservation for Scheduled Castes and Scheduled Tribes**. However, it does not say what should be the periodicity of the census.
- **The Census Act, 1948** which predates the Constitution provides the legal background for several activities relating to the Census without mentioning anything about its periodicity.
- It says: "The Central Government may declare its intention of taking a census whenever it may consider it necessary or desirable to do so".

#### Freezing of administration boundaries:

- Recently, it was reported that the **freezing of administrative boundaries** that precede the Census would be done with effect **from July 1, 2023**.
- Such freezing is necessary as State governments are in the habit of creating new districts and tehsils or reorganizing existing ones.

#### Implications of the delay:

- **Accuracy of data:** While Sample surveys can provide reliable data on social and demographic indicators they have limitations and cannot be used to find answers to how many villages have literacy rates below 75% or which tehsils have a low percentage of people getting protected water supply. Only the Census alone can provide population data for every village and town in the country.

**Reservation of seats:** The Census data are used to determine the number of seats to be reserved for **SCs and STs in Parliament, State legislatures, local bodies, and government services**.

- **Other than the Census, there is no other source that can provide this information.**
- A delay in the Census means that the data from the 2011 Census would continue to be used.



- In many towns and even panchayats that have seen rapid changes in the composition of their population over the last decade, this would mean that either too many or too few seats are being reserved.

**Delimitation:** Delimitation of parliamentary and Assembly constituencies would continue to be based on the 2001 Census till data from a Census after 2026 are published.

#### **Changing population distribution:**

- The rural-urban distribution of the population has been rapidly changing over the years. There is high population growth in urban areas. Some cities have been growing faster than others through in-migration.

#### **Impact of the pandemic**

- The **pandemic resulted in deaths among adults and the aged relatively more than children.**
- Its impact on **age distribution** in severely affected areas would be of interest as it would give an indirect estimate of the number of deaths.
- This would either validate or reject the various estimates of the number of deaths due to the pandemic.

#### **Conclusion:**

The decision to collect data for the National Population Register by piggybacking on the Census operations was the most debated issue before the Census was postponed. Such controversies negatively impact the Census. Hence, it would be advisable to separate these two and disassociate the Census from a politically sensitive issue. This would help complete the Census as early as possible and maintain the reliability of data.

## **2. China's shrinking population and India's surging ahead:**

China's population, according to its **National Bureau of Statistics**, fell to 1,411.8 million in 2022, from 1,412.6 million in the previous year.

- **India has not conducted an official headcount Census after 2011.** But going by the **United Nations' projections, its population stood at 1,417.2 million in 2022** (more than China's) and is expected to reach 1,428.6 million in 2023

#### **Mortality:**

- A country's population increases with a reduction in the relative number of deaths, while population growth slows/reverses with declining fertility rates.
- The **Crude Death Rate (CDR)** – the number of persons dying per year per 1,000 population – was 23.2 for China in 1950 (22.2 for India). It fell to single digits of 7.3 in 2020 (7.4 for India).
- Another mortality indicator is **life expectancy at birth**. Between 1950 and 2020, it went up from 43.7 to 78.1 years for China and from 41.7 to 70.1 years for India.

#### **Fertility:**

- **The Total Fertility Rate (TFR)** – The number of babies an average woman (aged 15-49) bears over her lifetime – was as high as 5.8 for China and 5.7 for India in 1950.
- According to its 2020 Census, China's TFR was 1.3 births per woman.
- The TFR has fallen sharply for India too (from 3.4 to 2 between 1992-93 and 2019-21).



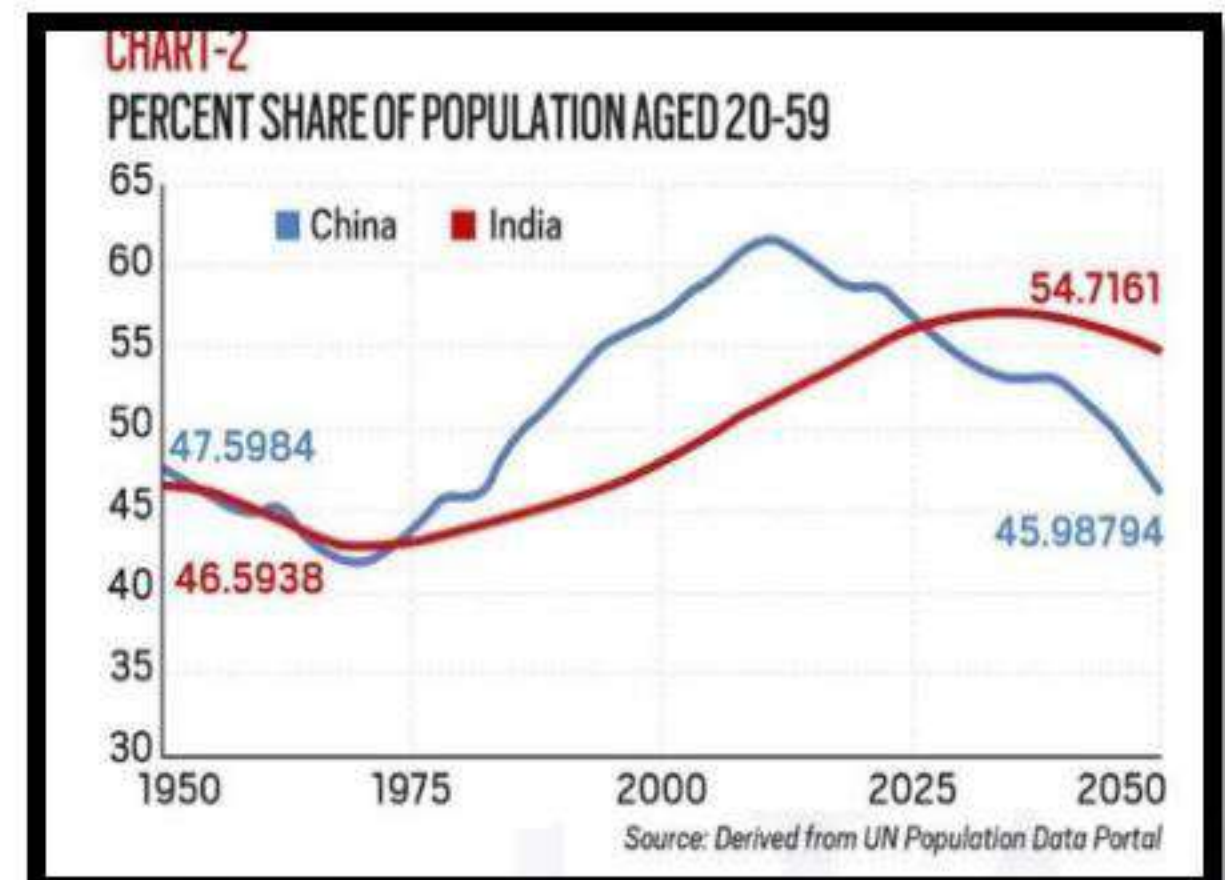
- A TFR of 2.1 is considered as “replacement-level fertility” – a woman having two children replaces herself and her partner with two new lives.

### Issues with China’s declining population

- China’s TFR, according to its 2020 Census, was 1.3 births per woman which is marginally up from the 1.2 in the 2010 and 2000 censuses.
- Issue is that the TFR is way below the replacement rate of 2.1.
- **Decline working age population:** The real crisis for China is the decline in its population that is of prime working age. Demographic dividend has started to reverse, and the share of China’s working-age population is projected to fall below 50% by 2045.

### Opportunity for India:

- **Working age population:** More important is the working-age population: its share in the overall population crossed 50% only in 2007, and will peak at 57% towards the mid-2030s.
- **India has just begun seeing fertility rates fall to replacement levels, including in rural areas.** The spread of education, farm mechanisation and fragmentation of landholdings are primary contributors to this fall.



### Challenges for India:

- **Productivity and economy:** The youth will have to be equipped with skills that are indispensable to the knowledge economy.
- **Climate change:** The climate crisis and other ecological imperatives will mean that the footprints of many activities are kept light.
- **State-wise focus:** Much more needs to be done on this, of course, in large parts of the country, including in Uttar Pradesh, Bihar and Madhya Pradesh, whose TFR is higher than the national average and where gender discrimination has deep social roots.
- **Choice to women:** To actually realise Population Control, educating women and giving them freedom to make choice and implement it, should be first to have attention by the Government. States must ensure contraceptives are accessible, affordable and available in a range of forms acceptable to those using them.

### Global impact of China’s population decline

- The epidemic has demonstrated how China’s internal issues can impact the flow of trade and investment, as border controls and lockdowns hurt supply chains.
- A weakening Chinese economy could undermine China’s goal to surpass the US as the greatest economy, in addition to slowing down global growth.
- In the next twenty to thirty years, China’s limited capacity to respond to this demographic shift will probably result in slower growth results and have an impact on its capacity to compete with the United States on the global stage.
- China has assumed a central position in global supply chains, so anything that affects China will have knock-on effects on the world economy.

### Conclusion:



- Overall then, India has a window of opportunity well into the 2040s for reaping its “**demographic dividend**”, like China did from the late 1980s until up to 2015. However, this is entirely contingent upon the creation of **meaningful employment opportunities for a young population — in the absence of which, the demographic dividend can well turn into a demographic nightmare**

## GS 2

### 1. India's dilemmas in an Asian century

The **Asian Century** refers to the dominant role that Asian nations are expected to play in the 21st century due to their fast-growing economies and youthful demographics.

Asia's growth is being powered by China and India, two of the biggest global economies, as well as by smaller neighbors including Indonesia, Vietnam, the Philippines, and Bangladesh.

By 2030, the world's 10 biggest economies will be made up largely of today's current emerging markets, according to global bank Standard Chartered.

#### Issues of the Asian century:

- **The geopolitical and economic rise of Asia coincides with several regional and global developments.** These have potential to undermine the stability and prosperity India had hoped an Asian century would bring.
- The withdrawal of the U.S. from much of continental Asia, aggressive rise of China and the Ukraine war appear to have ended the coexistence of Asia.
- Today, **Russia and China are trying to undermine the global balance of power.** Several regional powers such as Iran, Turkey and Saudi Arabia are in tow.

#### Asian century and (multi)polarity:

- **Multipolar Asia:** There are two possibilities, one is a multipolar world with Russia, China, Japan, India and the other is a China-dominated Asia.
- **Multipolarity and India's interest:** It can serve India's interest only if it is underpinned by international law, premised upon respect for the sovereignty and territorial integrity of all countries.
- **Dollar-based trade:** Although it is facing serious challenges from Russia and its Asian partners China, Iran, Turkey, India, etc. it will be a matter of concern if the arrangements shift to Yuan.

#### What is the dilemma created by multipolar Asia before Indian foreign policy establishment?

- New Delhi has consistently campaigned for a multipolar world where key Asian powers have a major role in international politics. Yet it may hesitate to engage the emergent Asian century for various reasons.
- The Indian establishment has a **deeply status quoist view of the world order.** It believes in a more democratic, orderly and rules-based world order. But, it recognises that major systemic changes could create chaos. Therefore, India likes peaceful and consensual transformation of the system. It is not happening today.



- **New Delhi's biggest fear would be an Asian century without stable multipolarity.** Even if it emerges, a multipolar world is most likely to be soon replaced by a bipolar world dominated by the U.S. and China.
- If a bipolar world leads to great power accommodation between the U.S. and China, India's situation could be worse off. **It means the U.S. accepting China's sphere of influence.**  
The Asian century dominated by China may lead to post-Indian South Asia that is under the Chinese sphere of influence, though not entirely inimical to Indian interests.

## 2. Establishing Campuses of Foreign Universities in India:

The regulator for higher education in India, the University Grants Commission (UGC) has released draft regulations to allow foreign universities to establish campuses in India.

### What are the salient features of UGC Regulations on Foreign University Campuses in India?

- **Eligibility:** Two types of **Foreign Higher Education Institutions (FHEIs)** can apply to establish campuses in India: **(a)** Universities that are in the top 500 global rankings (either overall or subject-specific rankings); **(b)** Institutions of repute in their home countries.
- **Approvals:** The UGC will set up a permanent committee to look into questions about how FHEIs can set up and run campuses in India. The Committee will make recommendations within 45 days. After the approval, the FHEI has to establish campus in India within 2 years.
- **Criteria for Admission and Fees:** FHEIs will be free to set and change their admissions process and criteria. They can admit both domestic and international students.
- **Faculty:** FHEI will have the freedom to hire faculty and staff from India and other countries, as long as they follow the rules for hiring. It may decide the qualifications for hiring faculty and staff, their remuneration and other terms of the job.
- **Protecting the Interests of Students:** FHEI cannot stop a course or programme or close the campus without first getting permission from the Commission.
- **Equivalence with degrees given by Indian HEIs:** The qualifications given to students on the Indian campus must be the same as the qualifications given by the FEHI on the main campus in the home country.
- **Securing National Interest:** FHEIs must not offer any programme or course that puts India's national interest or higher education standards at risk.
- **Working of Finances:** The **Foreign Exchange Management Act (FEMA)**, 1999 and its rules must be followed for movement of money across borders. FHEI must submit an annual report with information.



## **BENEFITS**

**Internationalisation of Higher Education:** As stated in the NEP 2020, "A legislative framework will be put in place to facilitate such entry, and such universities will be given special treatment in terms of regulatory, governance, and content norms on par with other autonomous institutions in India".

**Quality of Education:** Will improve due to competition between FHEIs and Indian institutions.

**Beneficial for Students:** One report has estimated that Indians would be spending US\$ 80 billion annually for studies abroad by 2024-25. Presence of campuses of foreign universities may ease the tendency to shift abroad for higher studies. This will help reduce the need for foreign exchange.

**Attract Foreign Students:** Campuses of reputed FHEIs will attract foreign students. This will help in exchange of ideas and cultures.

**Boost Research:** The enrolments in M.Phil and PhD courses is very low. It is expected that campuses of reputed FHEIs will improve enrolments in research courses and help improve the ecosystem in India.

## **ISSUES**

Some experts contend that the **national security clause is too restrictive in nature**. The FHEIs may be reluctant to enter India because it may impact academic autonomy.

Earlier regulations released by the Government (October 2022) regarding **establishing campuses by Foreign Universities in the GIFT City** (Gandhinagar) were exempted from the regulations set by the UGC. Two set of regulations may result in **confusion**.

According to some education experts, the regulations **have not elaborated about certain aspects that are applicable to Indian Universities** like academic bank of credits, multiple entry and exit system, up to 40% online delivery along with the **issue of reservations in admissions**.

There are **multiple 'global rankings'** like the QS, Times Higher Education, Financial Times Rankings etc. The regulations have not elaborated which rankings shall be considered for eligibility criteria (top 500).

Regulations will also allow Institutions of repute in their home countries (not in top 500 in Global Rankings). **Repute has a subjective interpretation** and has not been elaborated.



## Challenges

**Affordability:** they can hire foreign faculty and decide tuition fee which may impact the affordability, limiting it to the elite.

**Infrastructure Funding:** The FHEIs may be reluctant to acquire real estate to establish big campuses as acquisition of land is anyway a contentious issue in India

**Faculty Restraints:** FHEIs have to ensure that the education they impart do not violate India's national interests including on grounds like sovereignty and integrity, public order, decency, or morality etc. Some of the terms like morality and decency are subjective based on cultural differences. This may make foreign faculty reluctant to join Indian campuses.

**Attracting Top Universities:** Very few top ranked FHEIs have foreign campuses even in countries with relative much liberal standards than in India.

**Political Interference:** Higher Educational Institutions in India are vulnerable to political interference including on issue of appointments to senior administrative positions.

**Level Playing Field:** FHEIs can be for-profit institutions and they'll be allowed to repatriate surplus funds abroad. Indian public HEIs are not 'for-profit' and have to reinvest the surplus. This will put FHEIs on a different pedestal than Indian HEIs.

## Way Forward:

- As committed in NEP-2020, the Government should cater to the needs of a large section of Indian society termed '**Socio-Economically Disadvantaged Groups-SEDGs**' that include **women, transgenders, SCs, STs, OBCs, EWS, differently abled, migrants and geographically disadvantaged groups**.
- **Second**, Many private universities from India have shown great potential to innovate and become renowned globally. Such universities should be **given a free hand on par with FHEIs** in regard to autonomy, favourable regulations, taxation etc.
- There is an urgent need for **increased funding**, along with establishing **dedicated funding streams for infrastructure** grants/loans and financial aid. Universities can also be freed up to utilise other revenue streams such as start-up royalties and advertising.

## 3. The Indian Diaspora

The term diaspora traces its roots to the Greek diaspeiro, which means dispersion. The Indian diaspora has grown manifold since the first batch of Indians were taken to counties in the eastern pacific and the Caribbean islands under the 'Girmitiya' arrangement as indentured labourers.

Recently, the Prime Minister inaugurated the **17th Pravasi Bharatiya Diwas** convention in Madhya Pradesh on the occasion of Pravasi Bhartiya Diwas (PBD)



## Classification:

### Persons of Indian Origin (PIOs):

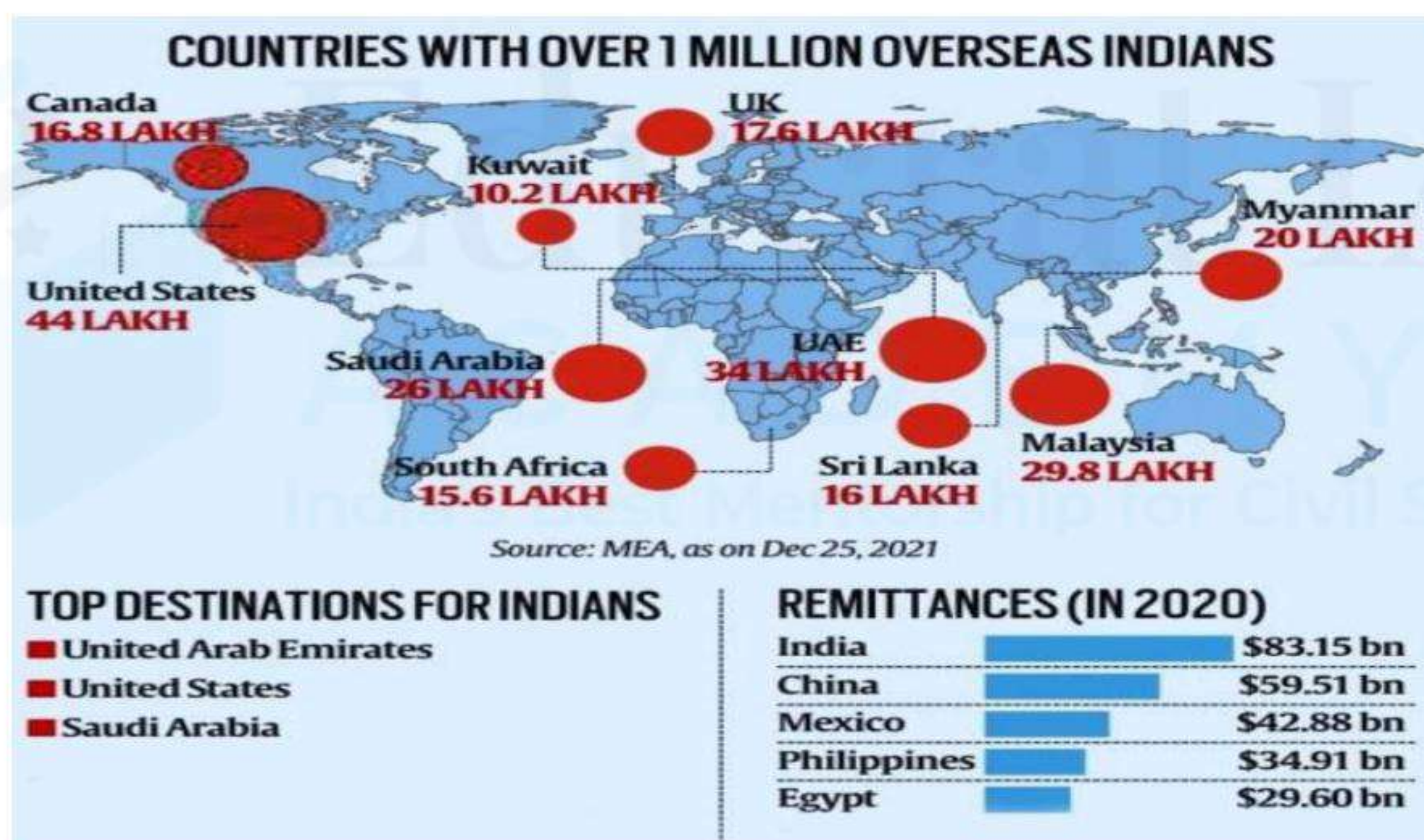
- PIO refers to a foreign citizen (except a national of Pakistan, Afghanistan, Bangladesh, China, Iran, Bhutan, Sri Lanka and Nepal) who:
- At any time held an Indian passport, or who or either of their parents/grandparents was born and permanently resided in India as defined in the Government of India Act, 1935 or who is a spouse of a citizen of India or a PIO.
- The PIO category was abolished in 2015 and merged with the OCI category.

### Non-Resident Indians (NRI):

- NRIs are Indians who are residents of foreign countries. A person is considered NRI if:
- She/he is not in India for 182 days or more during the financial year Or;
- If he/she is in India for less than 365 days during the 4 years preceding that year and less than 60 days in that year.

### Overseas Citizens of India (OCIs)

- An OCI card was given to a foreign national:
- Who was eligible to be a citizen of India on January 26, 1950
- Was a citizen of India on or at any time after January 26, 1950 or belonged to a territory that became part of India after August 15, 1947.
- Minor children of such individuals, except those who were a citizen of Pakistan or Bangladesh, were also eligible for OCI cards.



The opportunities that Indian diaspora brings for India are as follows.

- They serve as an **important 'bridge'** to access knowledge, expertise, resources and markets for the development of the country of origin with the rest of the world.
- **Indian Diaspora is an important part of India's "soft diplomacy" or "diaspora diplomacy"**. For example, Indian Diaspora played a critical role in the fructification of Indo-US Nuclear deal.
- They have also contributed to the **growth and development of the country** of their residence. For example, **Silicon Valley represents the success of Indians**.
- **Trans-national entrepreneurship**: They are a significant source of trade and investment in India.
- **Source of large inflows of remittances**, which has been helping balance the current account. It further aids in socio-economic development and poverty reduction.
- **Diffusion of experience and exposure**: They spread the Indian Culture and traditions abroad benefitting India in general. Example: **Yoga, Ayurveda, Indian Cuisine** etc.



- **NRI's also finance educational institutions or businesses, which again adds to the economy's sectors.** Reports suggest that these NRI's are a major source of Foreign Direct Investment, Market Development (Outsourcing) and technology transfer, that boost the assets of the fiscal system, every day.

#### 4. Issues related to electoral reforms

Recently, the EC proposed using isolated remote voting machines to enable voters who are residents elsewhere to vote in their home constituencies.

- RVM is a modified version of the existing **Electronic Voting Machine (EVM)**.
- The **special remote polling booths** would be set up in different states when elections are on in the home state of migrants.
- The RVM can handle **multiple constituencies from a single remote polling booth**.
- For this, instead of a fixed ballot paper sheet, the machine has been modified to have an electronic dynamic ballot display which will present different candidate lists corresponding to the constituency number of the voter read by a constituency card reader.
- The system would have a device similar to the so voters can verify their votes.
- The units will save the number of votes for each candidate for each of the constituencies, to be tallied on counting day.

##### **What are issues with the proposed remote voting machines?**

- It will have to ensure that all applicants for remote voting are able to do so **without hindrance, and all applications are processed fairly without selective exclusions**.
- There is a need to ensure that all applications and the decisions on them are publicly verifiable, from both remote and home locations. This can only be done with verifiable zero-trust technology that is linked to digitisation of the electoral rolls. It requires a thorough examination.
- Second, it needs to ensure that a person allowed to vote remotely is invalidated for local voting. The two lists will be at different locations. So, the correctness will not be easy to demonstrate in a publicly verifiable way.
- There is a need to decide the place for consolidation and counting of both the **electronic votes and the VVPAT slips**. It needs to decide whether counting happens at the remote location, or at the home constituency after consolidation. In the former case, disclosing the remote voting results will compromise vote secrecy.
- There are questions regarding polling agents at remote locations and their accountability.
- Under the current system, if the voter disputes what they have seen behind the screen, they are allowed a test vote in the presence of an election officer, and if the outcome of the test vote is correct, the voter can be penalized or even prosecuted. The same may persist with remote voting.

##### **Need for Remote Voting:**

- **Decrease in Voting Turnout:** In 2019 general election, over 91% of its eligible citizens were registered with 67% of them coming out to vote, which is the highest voter turnout in the nation's history. It is, however, worrying that a third of the eligible voters, a whopping 30 crore people, do not vote.
- **Internal Migration:** One of the reasons for less voter turnout remained the internal migration that took electors away from their home constituencies.
- **Supreme Court's Direction:** Supreme Court (SC) had in 2015 directed the EC to explore options for remote voting.



- **Increasing Registrations of Unorganised Workers:** There are nearly 10 million migrant workers, which is for the unorganised sector, registered with the government's e-SHRAM portal. If the remote voting project is implemented, it will have far reaching ramifications.

#### Way forward:

- For the voting process to be verifiable and correct, it should be machine-independent, or software and hardware independent, meaning, the establishment of its veracity should not depend solely on the assumption that the EVM is correct.
- The "voter should have full agency to cancel a vote if not satisfied; and that the process to cancel must be simple and should not require the voter to interact with anybody"

## 5. Special address of Governor: Constitutional history

In an escalation in the ongoing tussle with the ruling government in Tamil Nadu, Governor skipped a few words including, the '**Dravidian model of governance**' thereafter the Chief Minister interrupted the speech and expressed regret that the Governor had avoided certain portions of the prepared address.

#### The Conventions of the Governor's Address to the Legislature:

- The Governor is expected to address the first Assembly session of the state every year and the first session of a new Legislature after a general election, under **Articles 175 and 176 of the Constitution**.
- The Governor's address is prepared by the state government. It contains a review of the government's activities and accomplishments in the previous year, its plans for the session, and policy and legislative proposals that the government plans on implementing in the coming year.
- It is prepared and submitted by the state government to the Governor beforehand, and it is the convention for the Governor to read it without any deviations.

#### Do Governors often show their difference of opinion with the address?

- There have been a few incidents where **Governors openly disagreed with the contents of the address composed by the state government**.
- **Kerala's Governor in 2020** while reading the address mentioned that he was only reading out the statement to honour CM's wish and that he did not agree with it.
- **Kerala's Governor in 2018** omitted parts of the address that criticized the Union government for undermining principles of cooperative federalism.
- In 2017, the Tripura Governor skipped parts of his speech drafted by the state government that was critical to the union government.

#### Observations of Court's

- Calcutta High Court in *Andul Gafoor Habibullah v. Speaker, West Bengal Assembly* (1966) held that:
- The **Governor cannot decline to deliver his address and refuse to fulfill his constitutional duty**. Thus, the address under Article 176 is mandatory.
- However, the HC held that when the governor fails to deliver his address under Article 176 and walks out of the House after laying down the address on the table of the House, this is mere irregularity, not illegality.
- Thus, it cannot be questioned under Article 212, wherein the validity of the House proceedings cannot be challenged on the ground of mere irregularity in the procedure.



- In *Yogender Singh Handa v. State of Rajasthan* (1967), the Rajasthan High Court held that some portion read by the governor was good enough to deem the whole address as read.

#### Conclusion and Way Forward:

- **Governor's editing/deleting the speech may create a constitutional crisis.** The chief minister may refuse to defend the address in his response at the end of the debate on the governor's address and with the chief minister commanding a majority, the House may reject the resolution on the governor's speech.
- When the governor's/president's address faces such a defeat, it is considered a no-confidence motion and the chief minister or the prime minister as the case may be, needs to resign.
- The governor reigns but does not rule. His primary role as a learned counsellor is "to be consulted, to warn and to encourage".
- Both governors and chief ministers, as constitutional functionaries, should respect each other and at least have a working relationship.

### 6. There is hardly any autonomy at the panchayat level

Recently, an **up-sarpanch in Telangana's committed suicide due to indebtedness.**

#### How State governments exercise considerable discretionary authority and influence over panchayats?

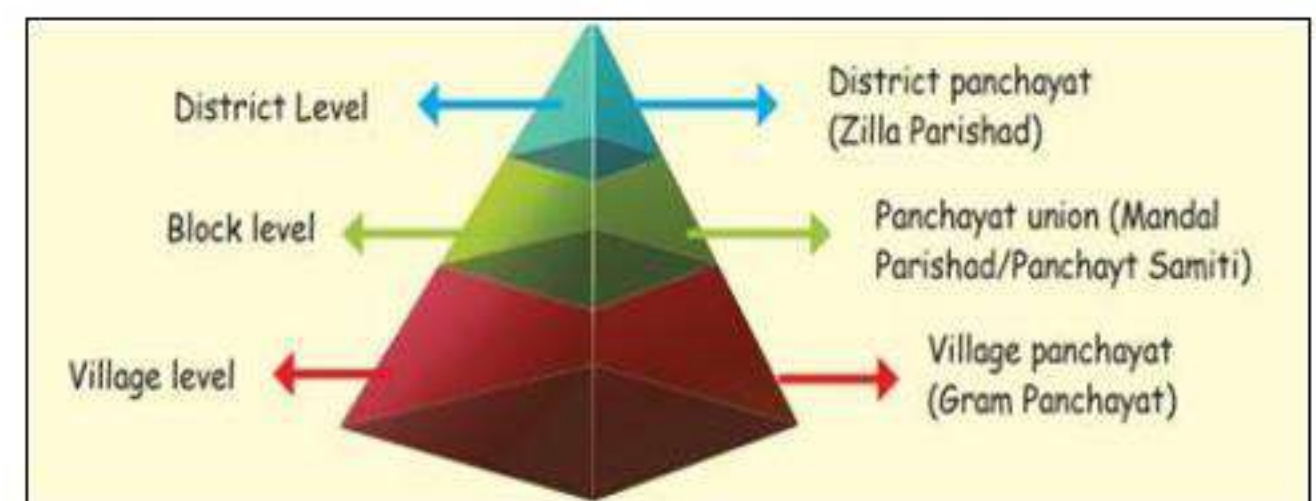
- **Issue of funding– Gram panchayats remain fiscally dependent on grants from the State and the Centre for everyday activities.** Broadly, panchayats have three main sources of funds — their own sources of revenue, grants in aid, and discretionary or scheme-based funds.

• Their own sources of revenue constitute a tiny proportion of overall panchayat funds. In Telangana, less than a quarter of a panchayat's revenue comes from its own sources of revenue.

• Further, access to discretionary grants for panchayats remains dependent on political and bureaucratic connections.

• Even when higher levels of government allocate funds to local governments, sarpanchs need help in accessing them. An inordinate delay in transferring approved funds to panchayat accounts stalls local development.

- **Constraints on panchayats for using the funds allocated:** State governments often impose spending limits on various expenditures through panchayat funds. In almost all States, there is a system of double authorisation for spending panchayat funds. Apart from sarpanchs, disbursement of payments requires bureaucratic concurrence.
- **Interference of higher authorities**—Approval for public works projects often requires technical approval from the engineering department and administrative approval from local officials of the rural development department.
- **Higher-level politicians and bureaucrats** often intervene in selecting beneficiaries for government programmes and **limiting the power of sarpanchs further.**
- **Limited control:** In many States, the recruitment of local functionaries is conducted at the district or block level. Often the sarpanch does not even have the power to dismiss these local-level employees.
- **Dismissal process**—Sarpanch can be dismissed while in office. Gram Panchayat Acts in many States have empowered district-level bureaucrats, mostly district Collectors, to act against sarpanch for official misconduct.





## Way Forward

- **Sarpanch need to have administrative or financial autonomy** for meaningful decentralization.
- The situation in **Telangana is a reminder for State governments** to re-examine the provisions of their respective Gram Panchayat laws and consider greater devolution of funds, functions, and functionaries to local governments.
- **India has limited decentralization** because if local governments get genuine autonomy to allocate the monies, power will shift from the MLAs and State government-controlled bureaucracy to the sarpanch.
- The **role and responsibilities of local governments should be foregrounded by normative values** which have found expression, at least in some regard, in the Constitution

## 7. Living Will Guidelines

(A five-judge SC bench decided to modify the existing rules for “**living wills**” as established in its 2018 decision allowing **passive euthanasia**, in order to make the process of passive euthanasia easier.

**Living will is a person’s right to make an advance directive about the course of his or her treatment, including the removal of life support, if such a situation arises.**

### Evolution of the concept of ‘Living Will’ in India:

- **Law Commission of India (2006) in its 196th Report:** A patient’s decision to not receive medical treatment did not constitute an attempt to commit suicide under Section 309 IPC. Also, a doctor who obeys the instructions of a competent patient to withhold/withdraw medical treatment does not commit a breach of professional duty.
- **Aruna Shanbaug case (2011):** The SC allowed passive euthanasia for the nurse lying in a vegetative state at a hospital in Mumbai.
- **S. Puttaswamy case/ the Right to Privacy case (2017):** – Article 21 includes the concept of individual dignity and thus allows passive euthanasia.
- **Common Cause case (2018):** The SC decided that passive euthanasia will be legally allowed henceforth in India and also laid down guidelines for living wills.

THE CHANGES BROUGHT		
	NOW	EARLIER
<b>Living will</b>	An attestation by a notary or a Gazetted officer to be sufficient for a living will	It was necessary that a judicial magistrate attest or countersign a living will
<b>Access to the living will</b>	Living will a part of national health record which can be accessed by Indian hospitals	Living will was kept in the custody of the district court concerned
<b>Primary board to examine patient’s condition</b>	Three doctors, including treating physician and two other doctors with five years of experience in the specialty, will comprise the primary board of doctors	Primary board of doctors needs at least four experts from general medicine, cardiology, neurology, nephrology, psychiatry or oncology with overall standing of at least 20 years
<b>Time taken to decide</b>	Primary/secondary board to decide within 48 hours on withdrawal of further treatment	The 2018 judgment did not specify any outer limit on withdrawal of treatment
<b>Secondary board</b>	Hospital must immediately constitute a secondary board of medical experts	The district collector had to constitute the second board of medical experts



The term “**euthanasia**” is derived from Greek, literally meaning “**good death**”. Taken in its common usage, however, euthanasia refers to the termination of a person’s life, to end their suffering, usually from an incurable or terminal condition. It is for this reason that euthanasia was also coined the name “mercy killing

For	Against
<p><b>Rights-based argument:</b> it is argued that as part of our human rights, there is a right to make our own decisions and a right to a dignified death.</p> <p><b>Beneficence:</b> Advocates of euthanasia express the view that the fundamental moral values of society, compassion and mercy, require that no patient be allowed to suffer unbearably, and mercy killing should be permissible.</p> <p><b>The difference between active euthanasia and passive euthanasia:</b> Supporters of euthanasia claim that active euthanasia is not morally worse than passive euthanasia – the withdrawal or withholding of medical treatments that result in a patient’s death. In line with this view, it is argued that active euthanasia should be permitted just as passive euthanasia is allowed</p>	<p><b>The sanctity of life:</b> Religious proponents argue that “it is the sole prerogative of God to bestow life and to cause death.</p> <p><b>Euthanasia as murder:</b> Society views an action which has a primary intention of killing another person as inherently wrong, in spite of the patient’s consent</p> <p><b>Abuse of autonomy and human rights:</b> It has also been argued that patients’ requests for euthanasia are rarely autonomous, as most terminally ill patients may not be of a sound or rational mind.</p> <p><b>The role of palliative care:</b> It is often argued that pain and suffering experienced by patients can be relieved by administering appropriate palliative care, making euthanasia a futile measure</p> <p><b>The rights of vulnerable patients:</b> If euthanasia were to become an accepted practice, it may give rise to situations that undermine the rights of vulnerable patients.</p> <p><b>The doctor-patient relationship and the physician’s role:</b> Active voluntary euthanasia and physician-assisted suicide undermine the doctor-patient relationship, destroying the</p>



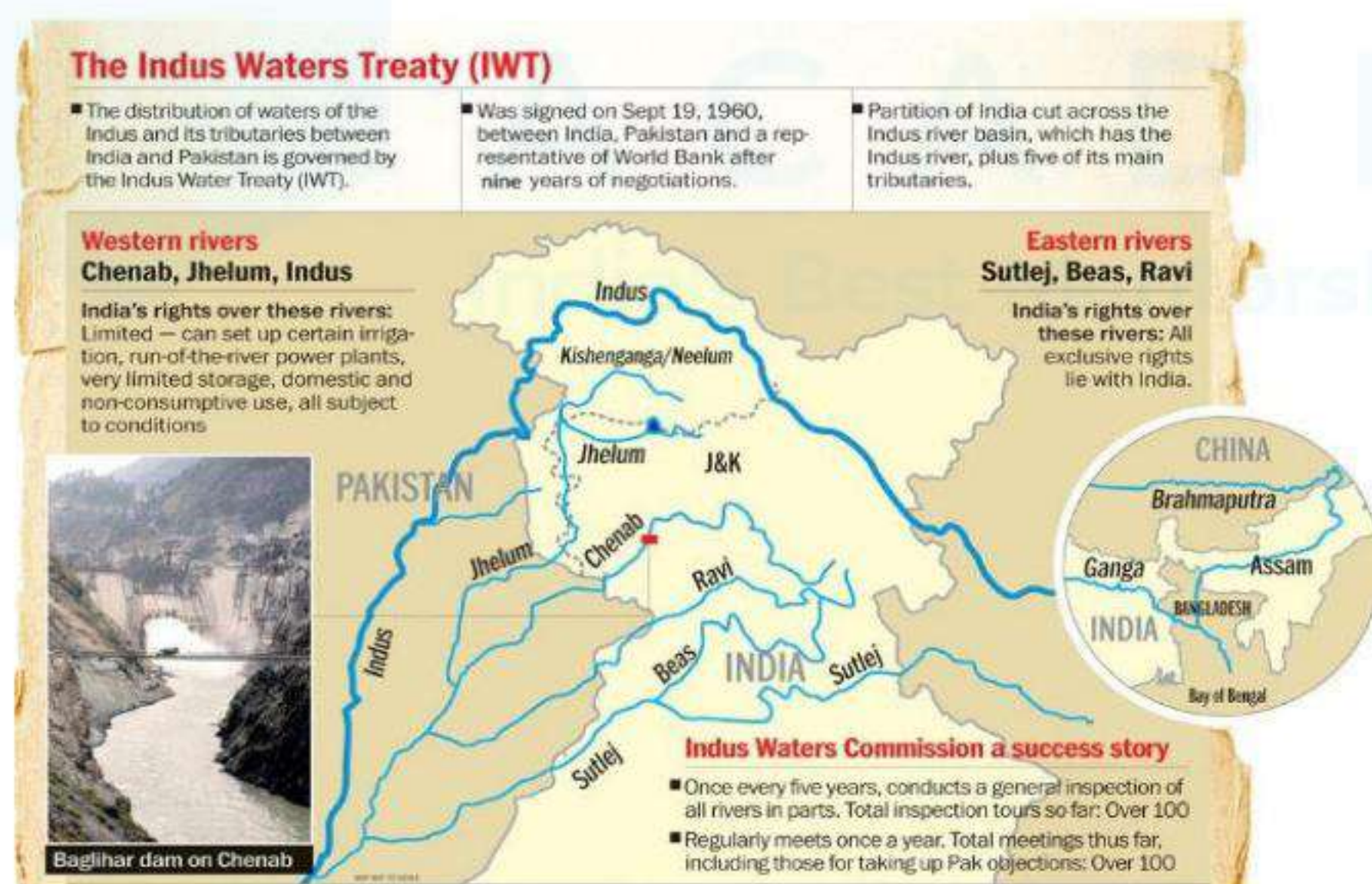
trust and confidence built in such a relationship.

## 8. India's call to modify the Indus Waters Treaty

India has sent a notice to Pakistan calling for the 'modification' of the Indus Waters Treaty owing to Pakistan's persistent objections regarding **India's Kishenganga (KHEP) and Ratle hydropower projects in Kashmir.**

### IWT:

- **India and Pakistan signed the IWT in September, 1960** after nine years of negotiations, with the World Bank being a signatory to the pact.
- The treaty sets out a **mechanism for cooperation and information exchange between the two sides on the use of the water of the Indus River and its five tributaries Sutlej, Beas, Ravi, Jhelum, and Chenab.**
- It allocated the **three western rivers—Indus, Chenab and Jhelum—to Pakistan** for unrestricted use, barring certain non-consumptive, agricultural and domestic uses by India and the three Eastern rivers—Ravi, Beas and Sutlej—were allocated to India for unrestricted usage.
- This means that **80% of the share of water went to Pakistan**, while leaving the rest 20% of water for use by India.
- It also required both the countries to establish a **Permanent Indus Commission constituted by permanent commissioners on both sides.** According to the provisions of the IWT, the Permanent Indus Commission is required to meet at least once a year.



### What is Kishanganga Hydroelectric Project?

The Kishanganga project is located 5 km north of Bandipore in Jammu and Kashmir, India.

It is a run-of-the-river project that includes a 37 m tall concrete-face rock-fill dam.

It requires to divert water from the Kishanganga River through a tunnel to a power plant in the Jhelum River basin.

### Dispute resolution:



- The dispute redressal mechanism provided under the IWT is a graded 3-level mechanism.
- Under the IWT, whenever India plans to start a project, it has to inform Pakistan. The concerns have to be cleared at the levels of the Indus Commissioners → Neutral Expert → Court of Arbitration, in a graded manner.

#### India's Stand:

- **India has not fully utilised its rights over the waters of the Indus system.**
- Over the last few years, especially since the Uri attack, there has been a growing **demand in India to use the IWT as a strategic tool**, considering that India has a natural advantage being the upper riparian state. In the aftermath of the Uri attack, Prime Minister Narendra Modi had said, 'blood & water can't flow together at the same time.'
- Accordingly, India **has been working to start several big and small hydroelectric projects** that had either been stalled or were in the planning stages

### 9. Move to regulate online gaming

**The Ministry of Electronics and Information Technology (MeitY)** has released draft amendments in relation to online gaming.

#### Major Highlights of the proposal

- **Defines an 'online game':** A game that is offered on the internet and is accessible by a user through a computer resource if s/he makes a deposit with the expectation of earning winnings.
- Companies offering such online games will be handled similarly to social media companies in terms of regulatory compliances and obligations.
- **A self-regulatory body:** Online games would be required to **register with a self-regulatory body**, and only games approved by the authority will be permitted to function lawfully in India. MeitY can recognise and derecognise all self-regulated bodies.
- **Mandatory KYC norms:** Online gaming companies would be compelled to follow the same rules as entities regulated by the RBI.
- **Banning bets on the outcome:** Online gaming companies will not be permitted to accept bets on game outcomes.
- **Chief Compliance Officer:** The platforms are expected to appoint a senior employee, who would coordinate with law enforcement agencies to ensure compliance with their orders.
- **Nodal Contact Person:** To facilitate the necessary coordination at any point of the day. Grievance redressal: The platforms must have in place an appropriate mechanism for the receipt and resolution of grievances.

#### Significance

- It will bring **online gaming under comprehensive central regulation.**
- These rules will help **curb the menace of anti-national and illegal offshore gambling platforms.**
- A uniform framework such as this will immensely increase investor confidence.
- The rules, built on principles of **fairness, transparency, and independence**, will help protect players and promote safety in gaming.
- This will help create a more responsive and agile framework to prevent harm and address user grievances



### Online gaming sector in India

- The revenue of the Indian mobile gaming industry is expected to reach \$5 billion in 2025. The industry grew at a compound annual growth rate (CAGR) of 38 percent in India between 2017-2020, as opposed to 8 percent in China and 10 percent in the US.
- The distinction between a game of chance and a game of skill has been maintained for over 150 years. The **Public Gambling Act, of 1867** expressly excluded games of skill from the purview of the expression “gambling”.
- **Courts** have repeatedly held that money involved in the playing of a game of skill would not amount to gambling.
- A serious controversy arose as to whether horse racing was a gambling activity. In a detailed judgment, the Supreme Court held that horse racing was a game of skill and could not be treated as gambling.
- **Parliament** has maintained the distinction between the two categories of games and has continued to hold that games of “mere skill wherever played” will not amount to gambling.
- Online gaming is a state subject

### **Concerns and Challenges**

- The rules still bucket all gaming intermediaries into a broad category irrespective of size or risk. They all require similar compliances, including the need to have India-based officers. This can disproportionately burden young start-ups, and make it difficult for global players to start their services in India.
- It is also possible that many online games in India will shut down and the business will go overseas. The net result will be lower tax revenue and large-scale unemployment.
- The moral dilemma seems to plague the Group of Ministers in deciding whether online games should be subject to tax at the highest rate of 28 percent on the entire collection or only on the platform fee charged by the gaming company.
- Online games are played through servers and electronic equipment that can be located anywhere in the world. It would then lead to unnecessary investigative activity on the part of the GST authorities.

### **Way forward:**

- This is a first step toward comprehensive regulation for online gaming and will hopefully reduce the state-wise regulatory fragmentation that was a big challenge for the industry.
- There should be a widespread public consultation to ensure that economic rights, individual freedoms, and social imperatives remain in balance.

### **10. Jallikattu: cultural practice or cruelty?**

A five-member Constitution Bench of the Supreme Court (SC) is going to announce its verdict on a batch of petitions seeking to **strike down a 2017 Tamil Nadu law that protects Jallikattu.**



Jallikattu is a bull-taming sport.

The festival is a celebration of nature, and thanksgiving for a bountiful harvest, of which cattle-worship is part.

It is a violent sport: and there is only one winner, man or bull.

Traditional event in which a bull such as the Pulikulam or Kangayam breeds is released into a crowd of people, and multiple human participants attempt to grab the large hump on the bull's back with both arms and hang on to it while the bull attempts to escape.

Participants hold the hump for as long as possible, attempting to bring

#### Current issue:

- SC imposed ban on Jallikattu through a judgment (Animal Welfare Board of India vs A. Nagaraja) in May 2014.
- However, in January 2017, people demanded the Central and State governments to come up with a law that would annul the Supreme Court's ban and allow jallikattu.
- This led to the **enactment of the Prevention of Cruelty to Animals (Tamil Nadu Amendment) Ordinance 2017**. It was later replaced by a bill adopted by the Tamil Nadu Legislative Assembly.
- However, some people moved against this law to SC and this issue was referred to a Constitution Bench

For	Against
<p><b>Jallikattu is both a religious and cultural event</b> celebrated by the people of the State- Art 29</p> <p>it is centuries-old and symbolic of a community's identity which <b>can be regulated and reformed</b> rather than completely banning,</p> <p>Any <b>ban on such a practice</b> would be viewed as <b>hostile to culture</b> and against the sensitivities of the community,</p> <p>It is a tool for conserving this precious indigenous breed of livestock and <b>does not violate</b></p>	<p>Liberty is inherent in every living being, whether it be in any form of life- Art 48</p> <p>There were various media reports about deaths and injuries caused to humans as well as bulls which had taken place in several districts of the State while conducting jallikattu.</p> <p>Extreme cruelty is inflicted on the animals.</p> <p>There was no material to justify jallikattu as a part of culture.</p>



**principles of compassion and humanity,**

The critics had equated the event with practices such as sati and dowry, which were also once recognised as part of culture and stopped through legislation.

#### Way forward:

- The court's venture must be to independently construe Article 21, to see whether a finding that the right partakes freedom to live in a society free of animal cruelty fits with India's larger constitutional design.

### 11. Stabilising ties with Nepal in uncertain times

#### India-Nepal ties:

Trade and Economy: India is Nepal's largest trade partner and the largest source of foreign investments, besides providing transit for almost the entire third country trade of Nepal.

connectivity: MOUs have been signed between both governments for laying an electric rail **track linking Kathmandu with Raxaul in India.**

Defence: The **Gorkha Regiments of the Indian Army** are raised partly by recruitment from hill districts of Nepal. India from 2011, every year undertakes a **joint military exercise** with Nepal known as **Surya Kiran.**

Cultural: India has signed **three sister-city agreements** for the twinning of Kathmandu-Varanasi, Lumbini-Bodhgaya and Janakpur-Ayodhya.

• **The two countries have close bonds through marriages and familial ties**, popularly known as Roti-Beti ka Rishta.

• India and Nepal share multiple multilateral forums such as BBIN (Bangladesh, Bhutan, India, and Nepal), **BIMSTEC** (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation), **Non Aligned Movement**, and **SAARC** (South Asian Association for Regional Cooperation) etc.

#### India-Nepal Projects:

- Mahakali Treaty (6,480 MW)
- Upper Karnali Project (900 MW)



- Arun Three projects (900 MW)
- Seti River (SR6) Project



#### Issues:

- **Issues with Peace and Friendship Treaty:** The idea of revising and updating it has found mention in Joint Statements since the mid-1990s but in a sporadic and desultory manner.
- **The Demonetisation Irritant:** The Nepal Rashttra Bank (central bank), held ₹7 crore and estimates of public holdings are ₹500 crore, which was not accepted by India.
- **Territorial Disputes:** Another irritant in the Indo-Nepal ties is the Kalapani boundary issue. These boundaries had been fixed in 1816 by the British, and India inherited the areas over which the British had exercised territorial control in 1947.
- **China's Intervention:** China considers Nepal a key partner in its Belt and Road Initiative (BRI), and wants to invest in Nepal's infrastructure as part of its grand plans to boost global trade.
- **Internal Security:** It is a major concern for India as the Indo-Nepal border is virtually open and lightly policed which is exploited by terrorist outfits and insurgent groups from North Eastern part of India eg. supply of trained cadres, fake Indian currency.
- **Madhesi people:** perceived interference of India to support Madhesi blockade created anti India feelings among hill tribes.

#### Way forward:

- Diverse but balanced and constructive approaches to India-Nepal relations will contribute to a clearer understanding of the past, better awareness of present trends, and new roadmaps for substantive upgrading of ties in the years to come.
- It is the time for fresh thinking on a host of issues, including: economic recovery; bilateral, sub-regional and regional cooperation; restructuring supply chains; human as well as conventional security; energy cooperation; development, people-to-people contacts etc

## 12. Issues Faced by Females in Sports:

Recently, some sportspersons made allegations of sexual harassment against WFI (Wrestling Federation of India)

#### Issues Faced by Sportswomen:

- **Funding and Budget:** Sportswomen face a lack of equal **funding compared to men's athletics**, making it difficult for them to compete and run consistent programs.

#### What is the Treaty of Peace and Friendship of 1950?

The treaty talks about the reciprocal treatment of Indian and Nepali citizens in the two countries, in residence, property, business and movement.

It also establishes national treatment for both Indian and Nepalese businesses (i.e., once imported, foreign goods would be treated no differently than domestic goods).

It also gives Nepal access to weaponry



- **Gender Disparity:** Despite women's efforts to **advocate for their social rights**, they still **do not receive the same level of respect or recognition on the professional front**, particularly in the sports industry, as their male counterparts.
- **Lack of Access and Costlier:** Lack of physical education in schools and limited opportunities to play sports in both high school and college mean **girls have to look elsewhere for sports** –which may not exist or **may cost more money**.
- **Safety and Transportation Issues:** Sports require a place to participate – and for many girls, especially in dense urban environments, that means traveling to facilities through unsafe **neighborhoods or lacking any means to get to a good facility miles away**.
- For example, Manipur is a sporting powerhouse, **but 48% of female athletes travel over 10 km** to reach the practice facility.
- **Social Attitudes and Disfigurement:** During socially fragile adolescence, the **fear of being tagged “gay” is strong enough to push many girls out of the game**.
- **Decreased Quality Training:** The availability of quality, trained coaches **may be lacking in their community or these coaches may be more focused on the boys’ programs** that have more money for training.
- **Lack of Positive Role Models:** Today’s girls are bombarded with images of **external beauty, not those of confident, strong female athletic** role models.
- **Limited Media Coverage:** Women's sports are often **underrepresented in the media**, which can make it harder for female athletes to gain recognition and sponsorship opportunities.
- **Pregnancy and Maternity:** Female athletes often face challenges balancing **motherhood and their sports careers**.

#### Why girls need to be encouraged in sports:

- They learn important life skills such as teamwork, leadership, and confidence.
  - It enhances their self-image
  - Girls’ involvement in sports is related to higher levels of family satisfaction.
  - High school female athletes have more positive body images than non-athletes.
- Reduces chances of diseases in the long run.

#### Inspirational women:

T. Usha(Athlete)- Her 102 medals won at national and international tournaments created a sensation in the country and motivated a generation of young women athletes.

**Karnam Malleswari** – the first Indian woman who won a bronze medal in the 2000 Sydney Olympics in women’s 69 kg category in weightlifting.

**Mary Kom (Boxing) and Saina Nehwal (Badminton)** – **Bronze Medal** in London Olympics in 2012

### 13. Developing schools without barriers

- As per the Census 2011, there are **26.8 million persons** with disabilities in India, making up **2.21 per cent** of the total population.
- The Ministry of Social Justice and Empowerment established the **Department of Empowerment of Persons with Disabilities (Divyangjan)** to ensure focused attention to policy issues related to persons with disabilities and work towards their empowerment.
- There has been no mention of disabled persons in the constitution and the preamble.

#### Status of Children with Disabilities in India:

- A UNESCO 2019 report mentioned that CWD comprises **1.7% of the total child population** in India (Census 2011).



- As per the report, Children with disabilities are faced with physical, institutional, socioeconomic and communication barriers from an early age, more than **70% of five-year-olds** with disabilities in India have never attended any educational institution.

#### Barriers to Accessibility:

- Inaccessible and Inappropriate Infrastructure:** Several barriers impede the participation of CWD in accessing educational opportunities such as inaccessible school buses; inaccessible facilities in schools (drinking water facilities, canteens and toilets); and inappropriate infrastructure in classrooms (uncomfortable seating, slippery flooring and low illumination).
- Misinformed Attitudes and Perceptions:** Misinformed attitudes and perceptions among parents, teachers, staff, and communities further influence the child's emotional development.
- Lack of Teaching and Learning Practices:** The lack of teaching and learning practices that integrate inclusive technologies and digital equipment to engage the child, such as assistive devices, are additional challenges.

#### Constitutional provisions:

- Article 21A** of the Constitution and the Right to Education Act, 2009 outline the fundamental right to education and the right to have free and compulsory education for children aged 6-14 years.
- The Sarva Shiksha Abhiyan** has adopted a 'zero rejection policy'. It emphasises that every child with special needs is provided quality education.
- India has ratified the **UN Convention on the Rights of Persons with Disabilities**. The government launched the Accessible India Campaign in 2015. An important pillar of this campaign is accessibility to the built environment.

#### Way forward:

- There is a need to develop **inclusive and accessible schools**. They will not challenge **perceptions** about children with disabilities and the associated discrimination. It will also help in actualising the **zero-rejection policy** in schools.
- A **multi-pronged participatory approach** for providing an **enabling environment for the empowerment** of future citizens is needed. It will ensure that **stakeholders** in the school ecosystem collectively work towards promoting **accessibility and inclusion** in schools. It includes **awareness and sensitisation programmes** for children, parents, and caregivers
- Trainers are needed for **upskilling** of school faculty and special educators and providing **access to updated teaching toolkits and materials**.
- It is required to provide **technical training** to local government departments; and a **co-learning platform for knowledge-sharing** between all Five principles of **equitability, usability and durability, affordability, cultural adaptability, and aesthetic appeal** are of special importance. It should be embedded from the **planning to implementation to evaluation stages** of providing infrastructure services in schools.





## 14. All India Survey on Higher Education (AISHE) 2020-2021

- **Background:** The Education Ministry has been conducting All India Survey on Higher Education (AISHE) since 2011.
- **Coverage:** AISHE Report 2022 covers all higher educational institutions located in Indian Territory and imparting higher education in the country.
- **Parameters Used:** The AISHE survey collects detailed information on different parameters such as student enrolment, teacher's data, infrastructural information, financial information etc.
- **Objectives:** Main objectives of the All India Survey on Higher Education (AISHE) are to-
  - Identify & capture all the institutions of higher learning in the country
  - Collect the data from all the higher education institutions on various aspects of higher education
- **AISHE 2020-21 Online Data Collection:** For the first time, in AISHE 2020-21, HEIs have filled data using entirely online data collection platform through the Web Data Capture Format (DCF).
- **DCF is developed by Department of Higher Education through the National Informatics Centre (NIC)**

AISHE) 2022-2021 report covers **three broad aspects** of India's Higher Education System. These are- **Student Enrollment, Number of Institutions, Faculty.**

### Major Highlights of the AISHE Data:

#### STUDENT ENROLLMENT:

- **Gross Enrolment Ratio (GER)** for all enrolments (as per 2011 Census) increased by over **2 points to 27.3.**
- The **highest enrolment was seen at the undergraduate level**, which accounted for **78.9%** of all enrolments.
- The **female enrolment in higher education** programmes had increased to **49% of total enrolments in 2020-21** compared to 45% in 2019-20.
- But, the overall figures for **Science, technology, engineering, and mathematics (STEM)** enrolments (at all levels of **higher education**) showed that women lagged behind men, who accounted for over 56% of enrolments in these fields.
- **Gender Parity Index (GPI)**, the ratio of female GER to male GER, has increased from 1 in 2017-18 to 1.05 in 2020-21.
- The number of students in the **Persons with Disabilities category** dropped in **2020-21** to 79,035 from 92,831 in 2019-20.
- The **proportion of Muslim students** enrolling for higher education dropped to **4.6% in 2020-21** from 5.5% in 2019-20.
- **Uttar Pradesh; Maharashtra; Tamil Nadu; Madhya Pradesh; Karnataka and Rajasthan** are the top 6 States in terms of number of students enrolled

#### Faculty:

- Total number of faculty/teachers are 15,51,070 of which about 57.1% are male and 42.9% are female.
- **Under-representation of SC & ST:** At All-India level, 56.2% teachers belong to General category; 32.2% to OBC; 9.1% to SC and 2.5% to ST category.
- **Female per 100 male faculty has improved** to 75 in 2020-21 from 74 in 2019-20 and 63 in 2014-15.

#### UNIVERSITIES:



- During 2020-21, the number of universities has increased by 70, and the number of colleges has increased by 1,453.
- Uttar Pradesh; Maharashtra; Karnataka; Rajasthan; Tamil Nadu; Madhya Pradesh; Andhra Pradesh and Gujarat are the top 8 States in terms of number of colleges.

#### Issues:

- **Faculty Shortage:** AISHE 2020-21 showed that the teacher-pupil ratio was at 27 for all universities, colleges and standalone institutions.
- **Inadequate Infrastructure:** Due to the budget deficit, corruption and lobbying by the vested interest group, public as well as private sector universities in India lack the necessary infrastructure.
- **Regulatory Issues:** Management of Indian higher education faces challenges of lack of accountability, transparency, and professionalism.

As a result of the increase in the number of affiliated colleges and students, the burden of administrative functions of universities has significantly increased and the core focus on academics and research is diluted.

- **Problem of Brain Drain:** Due to cutthroat competition for getting admission in top institutes like IITs and IIMs, a challenging academic environment is created for a large number of students in India, so they prefer going abroad, which makes our country deprived of good talent.

#### Way forward:

- **Education-Employment Corridor:** India's educational setup needs to be enhanced by integrating vocational learning with mainstream education and providing right mentorship at school (especially in government schools) to ensure that students are guided in the right direction from the start and are aware of career opportunities.
- **Taking a Note from Past to Future:** It is important to look to the future while keeping our long-established roots in mind.

## GS 3

### 1. It is crucial for India to embrace multi-domain operations

Recently, India's External Affairs Minister stated that the ongoing incursions and tensions along **the LAC pose a real threat** that necessitates the deployment of Indian armed forces in unprecedented numbers.

The Indian armed forces are capable of confronting the Chinese, but **we must supplement our infrastructure with technological advancements such as multi-domain operations (MDO)**

#### Multi-Domain Operations (MDOs)

- The term MDO comprises operations conducted across multiple domains and contested spaces through **convergence of capabilities** to overcome an adversary's strengths by presenting it with operational and/or tactical predicaments.
- This means having a **common operating system** which covers all the domains and decides which tool is the best tool for a given task.
- Hence, it is not one service using capabilities in multiple domains to do a task but the **best positioned and capable operator** of any service doing it across any domain.
- It is more than just actions on land, in sea, air, cyber, space and in the electromagnetic spectrum.



- For e.g. an Army coastal missile battery could be tasked to strike an enemy naval vessel detected by the radar of an Air Force aircraft.
- Or an Air Force's armed unmanned aerial vehicle on an Intelligence, Surveillance and Reconnaissance mission could be diverted to use its weapons against an Army target detected by a naval/civilian satellite.

#### What are the requirements for MDO?

- It requires the **technical complexity** and the command, control and communication (C3) structure.
- It would have **inputs from all sensors** for optimum engagement solution using artificial intelligence. This demands three things
  - First, all **sensors must be capable** of being hosted on the MDO architecture.
  - Second, all executors must be able **to receive inputs** and instructions from the C3 structure and carry them out.
  - Third, if the link to the main structure is not available, the **distributed control of mission command** should ensure that operations continue.

#### Prerequisites to MDO implementation

- **Expensive and highly advanced scientific technologies:** The MDO architecture can only be built using pioneering advanced scientific technologies and requires highly developed scientific infrastructure along with huge amounts to finance it.
- **Need of a planned and clear execution strategy:** It would require a clear-cut roadmap regarding the planning, acquisition, staffing and training.
- **Tech outsourcing and reliability:** Most of the MDO architecture is built using advanced techs which are available in the USA and India will need to not only outsource such techs but also pour in money and resources into an American concept.

#### What is the need of MDO implementation in India?

- **China threat:** China is attempting to match U.S. military power and is not lagging far which is a real threat to India.
- **Reliability of MDOs use and recent success:** The reliability of MDOs is evident in the current Russia-Ukraine conflict where Western specialists are helping Ukrainians utilise the power of algorithms to fuse reconnaissance from space and choose the best shooters to strike Russian targets.

**The MDOs are highly desirable to maintain the regional peace** because if left behind, India would be deterred by denial during peacetime because if China, which has the technology and finances, masters it will pose a danger to peace and tranquility in the region in a big way.

#### A Four-pronged strategy to implement MDOs is the way forward

•**First**, in the short-term, traditional physical domains must be stabilized, with critical deficiencies of the services being plugged.

•**Second**, our C3 networks need to be hardened and protected against cyber threats. They need to be linked and synchronized so that seamless exchange of data is ensured.

•**Third**, for the long term, a pilot project must be started now so that the true challenge of creating an MDO environment is grasped. The pilot project would identify the technologies required and, equally importantly, an idea of the monies necessary.

•**Fourth**, to get the fundamentals of MDO right, it is vital to train and educate personnel starting now on the lines of the US Air Force which has training courses for such domains.



## 2. Village Defence Committees

Recently, Jammu and Kashmir L-G Manoj Sinha said that the **Village Defence Guards (VDGs) would be set up in the UT.**

- The VDCs have now been renamed as **Village Defence Guards (VDG).**

### **What is a Village Defence Committee (VDC)?**

- The VDCs were first formed in mid 1990s as a force multiplier against militant attacks.
- The then J&K administration decided to provide residents of remote hilly villages with weapons and give them arms training to defend themselves.
- The new scheme to set up VDGs in vulnerable areas of J&K was approved by the Union Ministry of Home Affairs in March 2022.
- Like a VDC member, each VDG will be provided a gun and 100 rounds of ammunition.

### **Why was the need to set up VDCs felt?**

- The militancy that began in Kashmir in the early 1990s had spread to the adjoining Doda district by mid 1990s.
- As the killings increased, prompting the migration of Hindus from villages to nearby towns, the Home Ministry in 1995 decided to set up the VDCs.

How are Village Defence Guards (VDGs) different from VDCs?

- Both VDG and VDC is a group of civilians provided guns and ammunition to tackle militants in case of attack until the arrival of security forces.
- Under the new scheme, the persons leading the VDGs will be paid Rs 4,500 per month by the government, while others will get Rs 4,000 each.
- In the VDCs, only the Special Police Officers (SPOs) leading them were provided a remuneration, of Rs 1,500 monthly.
- The SPOs, the lowest rank in the J&K Police, used to be retired army, para military or police personnel.
- The VDGs will function under the direction of the SP/SSP of the district concerned.

### **What was the contribution of VDCs in the fight against militants?**

- They were the most-feared armed groups among militants in areas where poor road networks delayed the arrival of security forces.
- The villagers, well-versed with the local topography, averted many militant attacks and helped in their capture and killings.

### **Issues:**

- Along with the successes, the VDCs also faced allegations of human rights violations and other crimes, including murder, rape and extortions.
- As per official figures placed on the floor of the erstwhile J&K Legislative Assembly in 2016, 27,924 civilians were serving in 4,248 VDCs across the state.
- After peace returned, there were demands from certain quarters to disband the VDCs in 2002. Over a period of time, the number of VDC members has dropped significantly, either because of their involvement in a criminal case, or the government taking back their weapons once they turned 60.

### **What is the current situation of militancy in J&K?**

- According to official figures, a total of 186 militants, including 56 foreigners, were killed in 98 successful encounters in J&K during 2022.



The year saw a 37 per cent decline in local youth joining terror ranks, from the previous year.

### 3. LEPROSY

Recently, the Minister of Health and Family Welfare has informed the Rajya Sabha about the progress achieved in **National Leprosy Eradication Programme. India has achieved the elimination of leprosy as a public health problem** i.e., defined as less than 1 case per 10,000 populations, at the National level

- **About:** Leprosy/ Hansen's Disease is one of the **Neglected Tropical Diseases**. It is an infectious disease caused by a bacillus, ***Mycobacterium leprae***, which multiplies slowly.
- **Incubation Period:** On average, the disease incubation period is 5 years but symptoms may occur within 1 year. It can also take as long as 20 years or even more to occur.
- **Affects:** Leprosy mainly affects the skin, the peripheral nerves, mucosa of the upper respiratory tract, and the eyes.
- **Transmission:** The bacillus is likely transmitted via droplets, from the nose and mouth, during close and frequent contact with untreated cases.
- **Treatment:** Leprosy is curable with multidrug therapy (MDT). Untreated, it can cause progressive and permanent damage to the skin, nerves, limbs, and eyes.
- **Prevalence:** It is most prevalent in India (69% of cases), Brazil, Indonesia, Nigeria, Democratic Republic of the Congo, Madagascar and East Africa, Mozambique to Ethiopia, Brazil and Nepal.
- **Vaccine:** The BCG vaccine has some preventative effect against leprosy.
- **National Program:** National Leprosy Eradication Programme is a centrally sponsored scheme. Its vision is "Leprosy-free India". Under this, action is taken for early case detection, complete treatment of detected cases and to contain the onset of disease in close contacts. It also includes leprosy awareness campaigns. Under the programme, Reconstructive Surgeries are conducted and welfare allowance is paid to each patient undergoing Reconstructive Surgeries.
- Leprosy is one of the oldest diseases in recorded history, afflicting humanity since time immemorial. A written account of Leprosy date as far back as 600 B.C.\

**Leprosy is classified into two types** based on the number of skin lesions, presence of nerve involvement and identification of bacilli on slit-skin smear.

- **Paucibacillary (PB)** – A case of leprosy with 1 – 5 skin lesions, without the demonstrated presence of bacilli in a skin smear.
- **Multibacillary (MB)** – A case of leprosy with more than 5 skin lesions or with nerve involvement or with the demonstrated presence of bacilli in a slit-skin smear, irrespective of the number of skin lesions.

#### **Steps taken to cure it:**

- The National Leprosy Eradication Programme that was launched that achieved the goal of elimination of leprosy as a public health problem, defined as less than 1 case per 10,000 Population, at the National Level in December 2005.
- In 2017, the SPARSH Leprosy Awareness Campaign was launched to promote awareness and address the issues of stigma and discrimination.
- The measures included in the campaign like contact tracing, examination, treatment, and chemoprophylaxis are expected to bring down the number of Leprosy cases.
- In 2019, Lok Sabha passed a Bill seeking to remove Leprosy as a ground for divorce.



- In commemoration of the 150th birth anniversary of Mahatma Gandhi on 2nd October 2019, the NLEP has prepared the comprehensive plan to reduce the grade to disability to less than one case per million people by October 2019.

#### **Facts:**

- **World Leprosy Day is observed every year on the last Sunday of January.** In India, it is observed on 30th January every year, coinciding with the death anniversary of Mahatma Gandhi, who is known for his fight against the disease.
- India has 52% of the world's new leprosy patients. Uttar Pradesh, Arunachal Pradesh, Madhya Pradesh, Bihar, West Bengal, Chhattisgarh, Odisha, Jharkhand, Maharashtra, Delhi, Dadra Nagar Haveli and Daman Diu and Gujarat, have at least one or more than one district, where they have to realize leprosy elimination target. These states combined together have 90% and more of the total caseload in India.

## **4. The danger of deepfakes**

#### **Deepfakes:**

- They are digital media-video, audio, and images edited and manipulated using Artificial Intelligence.
- Cloud computing, public research AI algorithms, abundant data and availability of vast media have provided the option to manipulate the media. This synthetic media content is referred to as deepfakes.
- Artificial Intelligence (AI)-Generated Synthetic media or deepfakes have benefits in certain areas such as accessibility, education, film production, criminal forensics, and artistic expression.

#### **Impact of Deepfakes- Who are the Victims:**

- **Pornography:** According to a sensity.ai, 96% of deepfakes are pornographic videos, with over 135 million views on pornographic websites alone.
- Deepfake pornography exclusively targets women. Pornographic deepfakes can threaten, intimidate, and inflict psychological harm.
- **Tarnishing the Individual Image:** Deepfake can depict a person as indulging in antisocial behaviors and saying vile things that they never did.
- **Social Harm:** Deepfakes can also cause short-term and long-term social harm and accelerate the already declining trust in traditional media. Such erosion can contribute to a culture of factual relativism, fraying the increasingly strained civil society fabric.
- **Threat to Public Safety:** Deepfake could act as a powerful tool by a malicious nation-state to undermine public safety. Deepfakes can undermine trust in institutions and diplomacy.
- **Use by Terrorist Organizations:** Deepfakes can be used by non-state actors, such as insurgent groups and terrorist organisations, to show their adversaries as making inflammatory speeches or engaging in provocative actions to stir anti-state sentiments among people.
- **Promotes Fake News:** Another concern from deepfakes is the liar's dividend; an undesirable truth is dismissed as deepfake or fake news.
- **Leaders may weaponize deepfakes** and use fake news and alternative-facts narrative to dismiss an actual piece of media and truth.

#### **Way Forward against Deepfakes**

- **Ensure Media Literacy:** Media literacy efforts must be enhanced to cultivate a discerning public.



- **Collaborative Regulatory mechanism:** We also need meaningful regulations with a collaborative discussion with the technology industry, civil society, and policymakers to develop legislative solutions to disincentivising the creation and distribution of malicious deepfakes.
- **Develop Detection Technology:** almost all social media platforms have some policy or acceptable terms of use for deepfakes. We also need easy-to-use and accessible technology solutions to detect deepfakes, authenticate media, and amplify authoritative sources.
- **Mass Campaign against Deepfakes:** To counter the menace of deepfakes, we all must take the responsibility to be critical consumers of media on the Internet, think and pause before we share on social media, and be part of the solution to this 'infodemic'

## 5. Supreme Court's Verdict on Demonetisation

Recently, a majority of four judges on a Constitution Bench of the Supreme Court (SC) found no flaw in the government's process to **demonetise 500 and 1000 banknotes through a gazette notification issued on November 8, 2016**

<b>'NOT RELEVANT WHETHER OBJECTIVES ACHIEVED OR NOT'</b>	
<b>MAJORITY VERDICT OF JUSTICES SA NAZEER, BR GAVAI, AS BOPANNA &amp; V RAMASUBRAMANIAN</b> <ul style="list-style-type: none"> <li>➤ Majority verdict says demonetisation had a "reasonable nexus with its objectives" such as eradicating black money and terror funding and it is not relevant whether those objectives were achieved or not</li> <li>➤ Says government was in consultation with RBI for six months and it is empowered to take such a decision</li> <li>➤ No fresh window to exchange notes, 52 days' time given earlier not unreasonable</li> </ul> <p>“There has to be great restraint in matters of economic policy. Court cannot supplant the wisdom of executive with its wisdom...”</p>	<b>MINORITY VERDICT OF JUSTICE BV NAGARATHNA</b> <ul style="list-style-type: none"> <li>➤ Demonetisation move 'exercise of power' by Union government, <b>contrary to law and vitiated</b> under the RBI Act</li> <li>➤ Carried out in 24 hours, so central bank had no time to consider it</li> <li>➤ Parliament, which is "at the centre of our democracy, cannot be left aloof in a matter of such importance"</li> <li>➤ Around 98% of value of banned currency reported to have been exchanged, so <b>measure may not have been as effective as it was hoped to be</b></li> </ul> <p>“This (use of phrases such as 'as desired' by the Centre in communication to RBI governor) demonstrates that there was no independent application of mind by the Bank</p>

### Majority Ruling:

- **Constitutionally valid:** The majority held that Centre's notification dated November 8, 2016 is valid and satisfies the **test of proportionality**.
- **Valid intention:** The judgment said the decision-making process was not flawed merely because the procedure emanated from the government.
- **No overnight phenomena:** The decision came up after six month consultation between the Reserve Bank of India and the Union government.
- The statutory procedure under Section 26(2) of the RBI Act was not violated merely because the Centre had taken **the initiative to "advise" the Central Board** to consider recommending demonetisation.
- On hasty decision, the court said such measures undisputedly are required to be taken with **utmost confidentiality and speed**

### Minority Ruling:



- The government could have issued a notification under Section 26(2) of the RBI Act **only if the RBI had initiated the proposal** to demonetise by way of a recommendation. Therefore, the government's notification issued under Section 26(2) of the RBI Act was unlawful.
- If the Board's opinion was in the negative, the Centre could still go forward with the demonetisation exercise, but only by promulgating an ordinance or by enacting a parliamentary legislation

#### **Demonetisation issues:**

- **Black money is not just cash:** This sudden demonetization was premised on the idea that "black means cash". And, it is in high-denomination currency notes that black money would be held.
- **Benami transactions whitens black money:** The truth is that illegal cash transaction, though black money, constitute a very small proportion of the black economy.

2016 is not the first instance of demonetization in India.

**1946:** The RBI demonetized Rs. 1,000 and Rs. 10,000 currency notes which were then under circulation.

**1954:** The Government introduced new currency notes of Rs. 1,000, Rs. 5,000, and Rs. 10,000.

**1978:** The Janata Party Government under Morarji Desai demonetized Rs. 1,000, Rs. 5,000, and Rs. 10,000

- **Much cash was accounted:** Much of the prospected cash in circulation including a major chunk of 'black money' was collected back by the RBI.
- **Wealth is dispersed:** The wealth is held in a variety of forms like, in undervalued inventory or balances held in tax havens abroad. A return is expected from this wealth. So, cash, on which there is no return, would be a tiny amount – 1% of the black wealth.
- **Schemes were exploited:** Deposits in Jan Dhan accounts suddenly swelled as the poor were used as cash mules. Some bankers were caught helping their rich clients do this. There was a 30% charge for this. As a result, new black incomes got generated.

#### **Benefits:**

- **Fake Notes and black money** issues were effectively tackled.
- **Digitisation of economy:** In the initial days of trouble conducting business in the face of an acute cash crunch, more and more entities had to shift to digital to do business.  
After the return of the cash, the growth in digital payment had been modest.
- **Supported in the Pandemic:** The creation of digital infrastructure post-demonetisation helped India in coping with the pandemic.  
As the tools for faceless transactions were mostly in place, it became easier to move towards contactless transactions

## **6. Joshimath: the Sinking Land**

Joshimath, the ancient Uttarakhand town has become a cause of concern. Though the town of Joshimath has been witnessing cracks emerging for the past two decades, things have escalated over a few days when the area was declared a disaster prone region

#### **Reasons for Vulnerability of region:**

- Joshimath is built on the deposits of an old landslide, which means the slopes can be destabilised even by slight triggers.
- The town is also in Zone V, denoting highest risk, in India's seismic zonation scheme.



It lies between two thrusts, the Main Central Thrust (MCT) and the Vaikrita Thrust (VT), and thus occupies a seismically active terrain.

#### Main Central Thrust (MCT) line:

In simplest terms, the MCT is a crack or geological fault in Himalayas. It is formed due to the collusion of Indo-Australian plate and Eurasian plate. The area underneath the MCT is particularly very fragile due to frequent tectonic activities. And, therefore, seismic activities are very common in MCT areas. The MCT extends for over 2200 km across the Himalayas in northwest-southeast direction. Joshimath is located above the MCT.

#### Contributing factors for disasters in the region:

- **Role of NTPC:** Locals have blamed the NTPC's 520-MW Tapovan Vishnugad hydropower project, under construction in the area, for exacerbating the Joshimath land subsidence.
- **Char Dham project:** The 6-km Helang-Marwari bypass, being built by the Border Roads Organisation (BRO), is also under scrutiny
- **Inadequate drainage and wastewater disposal:** The 2022 USDMA report pointed to a lack of drainage and wastewater disposal systems as being part of the subsidence problem
- About 85% of buildings in the town, including those owned by the army aren't connected to a sewerage system and have soak pits instead.

#### Why Himalayan region is susceptible to disasters?

The Hindu Kush Himalayan region is prone to numerous types of disasters because of its

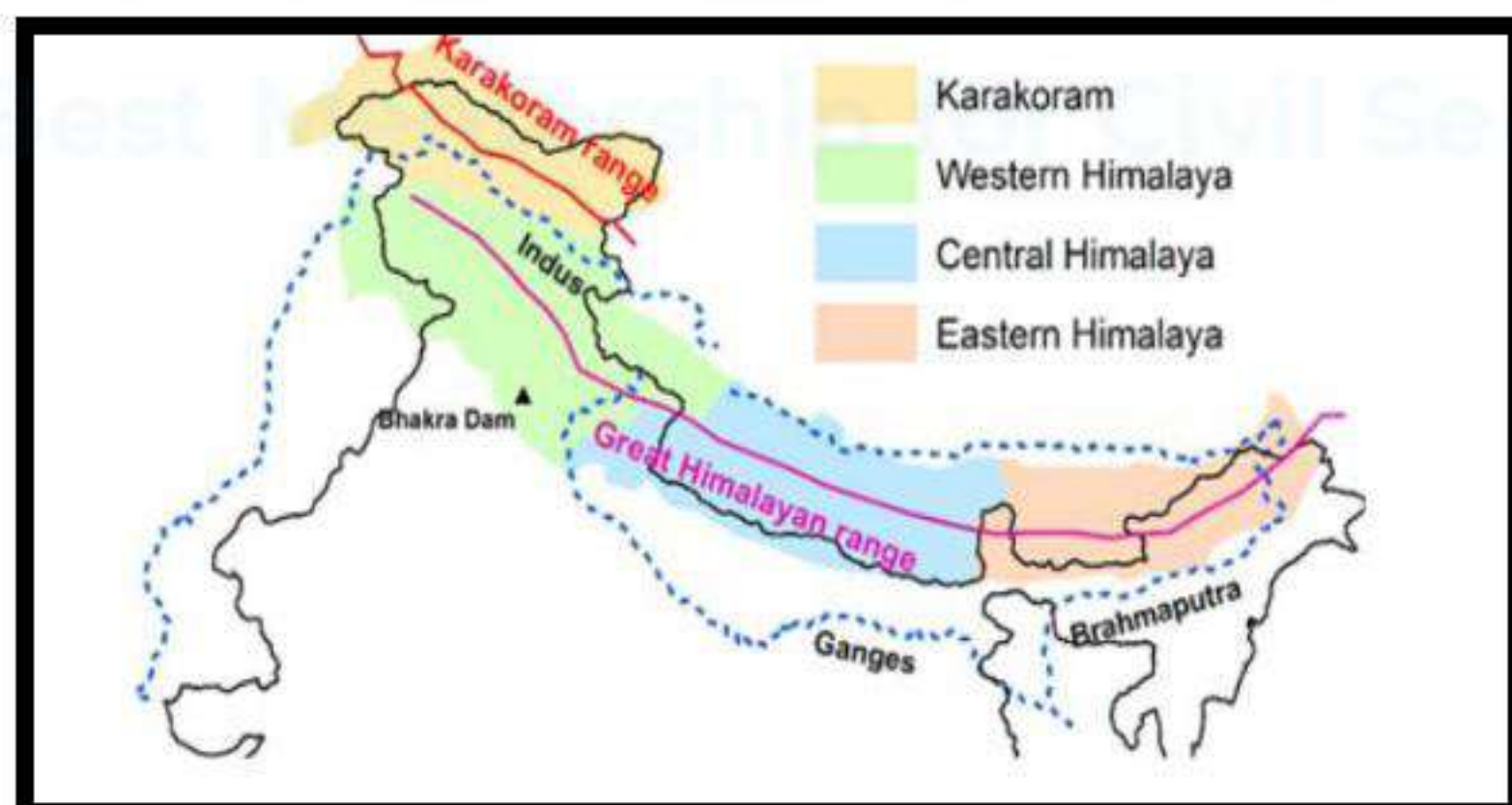
- Steep terrain
- fragile geology
- intense and variable precipitation
- Common incidents of floods and landslides
- Neo-tectonic mountain-building process, like earthquakes, landslides, floods, etc

#### Other factors:

- **Overexploitation of the ecosystem** (tourism, increased consumerism)
- **Exploitative development projects:** The indiscriminate exploitation of the fragile Himalayan region in the name of development projects has extracted a heavy price in terms of environmental damage.
- **Fragmentation of natural resources:** String of hydroelectric and road projects in the Himalayan States have already resulted in the fragmentation of natural systems.

#### Sustainable tourism in Himalayas: Recommendations

- **Regulated tourism practice:** There is need to establish regulated tourism practices with promotion of sustainable agendas for the Indian Himalayan region (IHR).
- **Vigilance and patrolling:** Protected areas require vigilance and regular patrolling to reduce unwanted wildlife-tourist interaction as well as habitat destruction due to off-road driving and encroachment.





- **Early Warning System:** It is important to have early warning and better weather forecast systems in order to forecast the disaster and alert the local population and tourists.
- **Regional Cooperation:** There is a need for a trans-boundary coalition of Himalayan countries to share and disseminate knowledge about the mountains and preservation of the ecology there.

## 7. Ozone Hole filling up now

The ozone 'hole', once considered to be the gravest danger to planetary life, is now expected to be completely repaired by 2066, a scientific assessment has suggested.

- An ozone molecule consists of **three oxygen atoms** instead of the usual two (the oxygen we breathe, O<sub>2</sub>, makes up 21% of the atmosphere).
- It only **exists in the atmosphere in trace quantities** (less than 0.001%), but its effects are very important.
- Ozone molecules are created by **the interaction of ultra-violet (UV) radiation from the Sun with O<sub>2</sub> molecules**.
- Because UV radiation is more intense at higher altitudes where the air is thinner, it is in the stratosphere where most of the ozone is produced, giving rise to what is called the 'ozone layer'.
- The ozone layer, containing over 90% of all atmospheric ozone, extends between about 10 and 40km altitude, peaking at about 25km in Stratosphere.

### Need:

- The ozone layer is very important for life on Earth because it has the property of absorbing the most damaging form of UV radiation, UV-B radiation which has a wavelength of between 280 and 315 nanometres.
- As UV radiation is absorbed by ozone in the stratosphere, it heats up the surrounding air to produce the stratospheric temperature inversion.

### Ozone Hole:

- Each year for the past few decades during the Southern Hemisphere spring, chemical reactions involving chlorine and bromine cause ozone in the southern polar region to be destroyed rapidly and severely.
- The Dobson Unit (DU) is the unit of measure for total ozone.
- The chemicals involved ozone depletion are chlorofluorocarbons (CFCs for short), halons, and carbon tetrachloride.
- They are used for a wide range of applications, including refrigeration, air conditioning, foam packaging, and making aerosol spray cans.
- The ozone-depleted region is known as the "ozone hole"

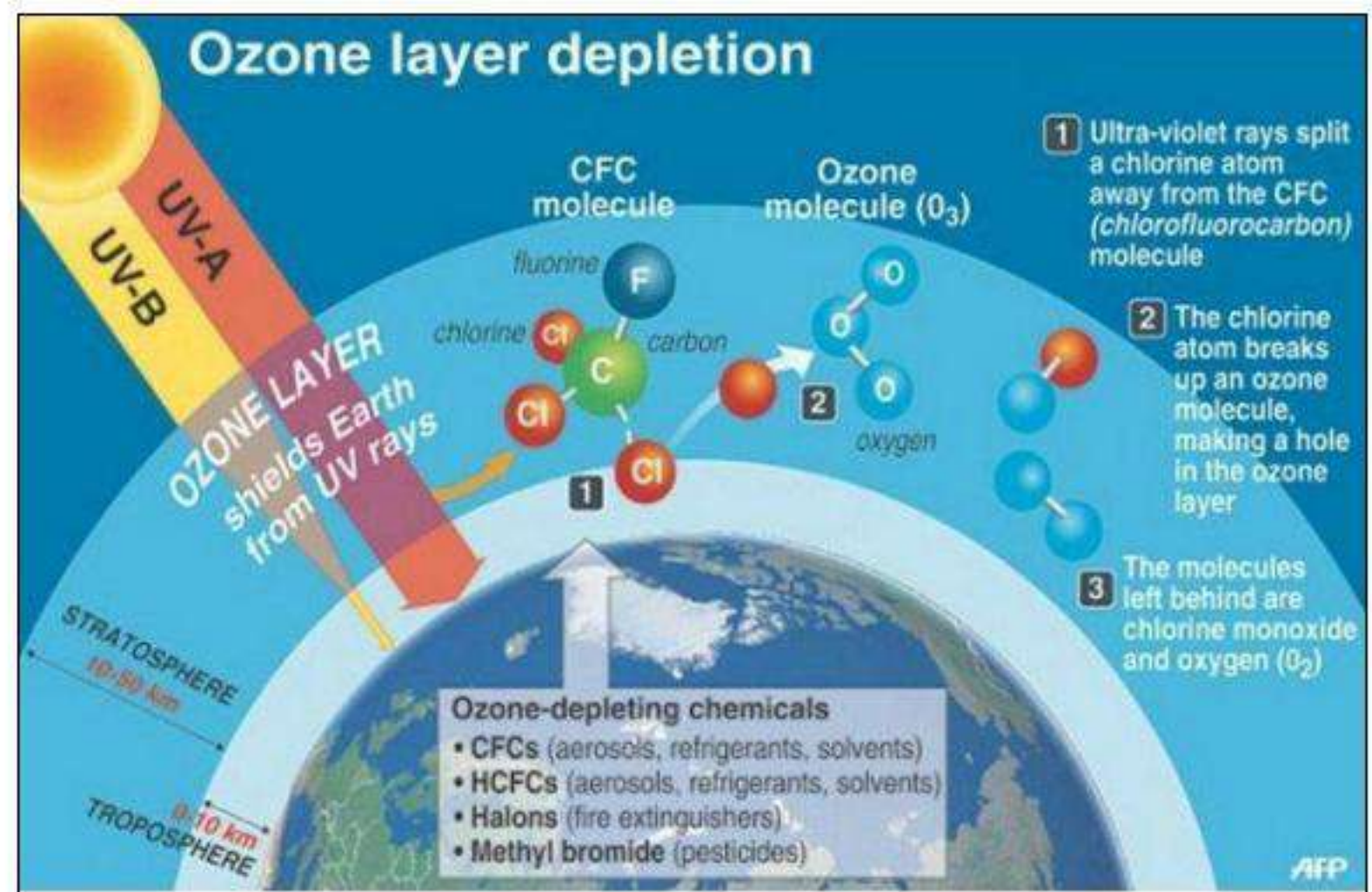
### Tropical Ozone Hole

- According to the study, the ozone hole is located at altitudes of 10-25 km over the tropics.
- This hole is about seven times larger than Antarctica, the study suggested.
- It also appears across all seasons, unlike that of Antarctica, which is visible only in the spring. The hole has become significant since the 1980s. But it was not discovered until this study

### Causes:



- Studies suggested another mechanism of ozone depletion: Cosmic rays.
- **Chlorofluorocarbon's (CFC)** role in depleting the ozone layer is well-documented.
- The **tropical stratosphere recorded a low temperature of 190-200 Kelvin (K).**
- This can explain why the tropical ozone hole is constantly formed over the seasons.



### Key highlights of the report:

- The ozone layer is predicted to return to 1980 levels over Antarctica by 2066, 2045 for the Arctic, and 2040 for the remainder of the planet.
- The ozone hole has been steadily improving since 2000, thanks to the Montreal Protocol's (1987) effective implementation.
- The Montreal Protocol mandates countries to phase out production of all main ozone depleting substances (ODSs).
- The Kigali Amendment (2016) to the Montreal Protocol aims to phase down 80-90% of the hydrofluorocarbons (HFCs) currently in use by 2050.
- HFCs do not cause much ozone layer damage, which is why they were not originally prohibited, but they are extremely powerful greenhouse gases (GHGs).
- Nearly 99% of the Montreal Protocol-banned substances have now been phased out of usage, resulting in a slow but steady rebuilding of the ozone layer.
- The success of the Montreal Protocol in closing the ozone hole is widely mentioned as a model for climate action.

However, the parallels between the eradication of ODSs and the reduction of GHGs are limited because the usage of ODSs (though widespread) was limited to a few specific industries and their replacements were readily available.

## 8. Women to get Command Roles in the Indian Army

As many as **108 women officers in the Army are set to be cleared for the rank of Colonel (selection grade)** which will make them eligible to command units and troops in their respective arms and services for the first time.

The Army, being the largest of the three services, has the largest number of women officers at 1,705, followed by 1,640 women officers in the IAF, and 559 in the Navy.

### Commanding a unit:

- Once promoted to a Colonel, an officer is eligible to command troops directly in the Army, which is an acknowledgment of the leadership qualities of the officer.
- It is considered a coveted appointment because in no other rank — including higher ranks like Brigadier or Major General — does an officer interact directly with troops on the ground.



- Women officers in many streams of the Army, including the Army Air Defence, Signals, Engineers, Army Aviation, EMEs, Army Ordnance Corps, and Intelligence Corps will be commanding units.

#### **Women in commands: Significance**

- Leadership opportunity: Despite working at the grassroots level as junior officers, women officers hitherto did not get an opportunity to prove their leadership skills as they were not eligible to command a unit.
- Gender parity: Most importantly, it grants women officer's parity with their male counterparts.
- Higher ranks: Earlier promotions were staff appointments — which are more administrative in nature and not purely command appointments in which an officer commands troops on ground.
- Benefits after permanent commission: With a longer career in the Army, women officers will be considered for promotions, including to the rank of Colonel and beyond.

#### **Why did their Colonel promotions come so late?**

- An officer in the Army is promoted to the rank of Colonel only after serving between 16 and 18 years, based on certain criteria such as annual confidential reports and various courses.
- Women officers who were inducted into the Army were inducted as Short Service Commission (SSC) officers in 1992 and in the years after did not have the choice to opt for permanent commission.

#### **Supreme Court order affirming Permanent Commission**

- In 2019, the Army changed its rules allowing SSC women officers to opt for permanent commission who would have otherwise retired after 14 years of service.
- However, this was not retrospective and applied only to the batches of women officers starting their career in the Army in 2020.
- With the landmark Supreme Court judgment of February 2020, permanent commission was granted to women officers with retrospective effect.

#### **How are women still discriminated?**

- Women are still not eligible in core combat arms such as Infantry, Mechanised Infantry and Armoured Corps.
- Indian Army is not open to women fighting wars at the borders as foot soldiers.
- Much of this resistance stems from past instances of male soldiers being taken as prisoners of war and tortured by the enemy.
- However, the Army has recently decided to open the Corps of Artillery, a combat support arm, to women.

#### **Navy and Air force:**

- Women officers have been inducted into all branches of the Navy, and they will be eligible for permanent commission in the future.
- Women officers can command shore-based units and, as they join the service and become eligible for permanent commission, they would be able to command ships and air squadrons.
- The IAF has opened all branches for women officers, including the fighter stream and the new weapon systems branch.

### **9. What ails the Ken-Betwa River Link Project?**

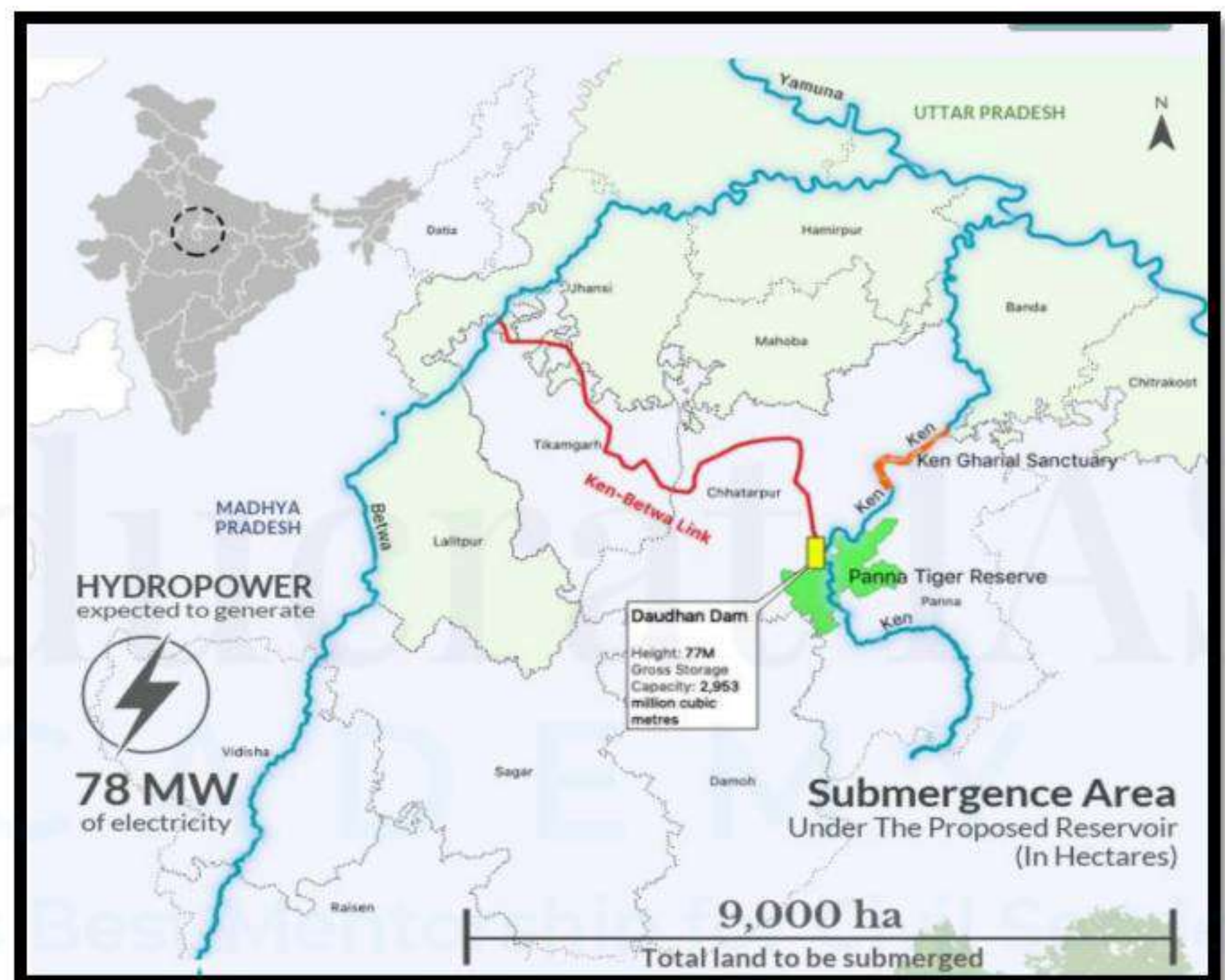


### The project:

- **The Ken-Betwa Link Project is the first project under the National Perspective Plan** for the interlinking of rivers.
- Under this project, **water from the Ken River will be transferred to the Betwa river.**
- Both these rivers are tributaries of the river Yamuna.
- Under Phase-I, one of the components — Daudhan dam complex and its appurtenances like Low Level Tunnel, High Level Tunnel, Ken-Betwa link canal and Power houses — will be completed.
- While in the Phase-II, three components — Lower Orr dam, Bina complex project and Kotha barrage — will be constructed.

### Importance:

- **Irrigation:** The project is slated to irrigate 10.62 lakh hectares annually, provide drinking water supply to 62 lakh people and generate 103 MW of hydropower and 27 MW of solar power.
- **Water supply:** The project will be of immense benefit to the water-starved Bundelkhand region, spread across Madhya Pradesh and Uttar Pradesh.
- **Agricultural boost:** The project is expected to boost socio-economic prosperity in the backward Bundelkhand region on account of increased agricultural activities and employment generation.
- **Addressing Rural Distress:** It would also help in arresting distress migration from this region.



### Issues with the projects

- **Migration:** It will lead to massive displacement of people
- **Topography change:** Since the Ganga basin topography is flat, building dams would not substantially add to river flows.
- **Inundation:** The transfer of such enormous amounts of water will inundate forests and land for reservoirs.
- **Seismic hazards:** The weight of billions of litres of water can have seismic implications in the Himalayan region.
- **Financial expense:** River inter-linking is an expensive business from building the link canals to the monitoring and maintenance of infrastructure.
- **Political will:** Implementation of the project not only needs a huge financial capital but also political support both is scarce commodities as of now.

### Ecological issues with the project



- The government's plan is based on a 'surplus and deficit' model that have little basis in science.
- There may not even be enough water in the Ken, a non-perennial river, to meet the projected needs of the Betwa – forget the needs of the Bundelkhand region.
- The project plans to create a high reservoir-dam on the Ken River in the Panna National Park and Tiger Reserve for the KBLP.

Downstream of the national park lies the Ken Gharial Sanctuary, created to protect the critically endangered Gangetic gharial (*Gavialis gangeticus*).

#### Way Forward

- **Due diligence:** Expert scrutiny during the project-approval stage are cornerstones of sound environmental governance.
- **Independent hydrological study:** of these rivers is necessary

### 10. Generative Artificial Intelligence (AI)

#### Generative AI:

- It is a cutting-edge technological advancement that utilizes machine learning and artificial intelligence to create new forms of media, such as text, audio, video, and animation.
- With the advent of advanced machine learning capabilities: It is possible to generate new and creative short and long-form content, synthetic media, and even deep fakes with simple text, also known as prompts.
- Generative AI works by training a model on a large dataset and then using that model to generate new, previously unseen content that is similar to the training data.
- This can be done through techniques such as:
  - Neural machine translation,
  - Image generation, and
  - Music generation.

#### Benefits:

- **Increased Efficiency:** Generative Artificial Intelligence can be used to automate tasks that would otherwise require manual labor. This can **help businesses save time and money**, as well as increase efficiency e.g., it can be used to generate images and videos quickly and accurately, which can be used in marketing campaigns or other projects.
- **Improved Quality:** It can be used to create high-quality images and videos that are **more visually appealing** than those created manually and generate text that is **more accurate and relevant**.
- **Faster Results:** It can create images and videos in a fraction of the time it would take a human to do the same task
- **Cost Savings:** By automating tasks, businesses can reduce their labor costs and save money.
- **Improved Decision Making:** e.g., it can be used to generate data that can be used to make decisions about marketing campaigns or product development. Applications in the medical field can help in better diagnosis.
- **Increased Creativity:** Businesses can generate new ideas and concepts that can be used to create new products or services.
- **Improved Customer Experience:** Businesses can generate content that is **more accurate and relevant** to their customers. This can help businesses create a better customer experience and increase customer satisfaction.



• **Revenue generation:** Generative AI can craft sales, marketing, and brand messaging.

• **Blogging and reach:** Agencies can generate personalised social media posts, blogs, and marketing text and video copies by providing a text prompt to a Generative AI service, like ChatGPT.

• **Logo and imagery:** DALL.E, a generative image generation service, can also generate original imagery to align with the branding.

• **Coding:** It can suggest entire functions, snippets, and even fully functioning modules and generate code in real-time right in your editor.

• **Synthetic Data:** Generative AI can also be used for generating synthetic data for data augmentation and creating additional training data to train and test AI models to experiment at scale.

• **Medical history and related important data:** It can also help health professionals with their medical diagnosis. AI can generate potential and alternative treatments personalised to patients' symptoms and medical history. For instance, DeepMind AlphaFold can predict the shape of protein.

• **Simplifying complex queries:** ChatGPT can also assist in providing answers to complex queries and augment search algorithms to generate responses to complex search queries.

• **Testing:** It can help speed up the iterative development and testing of novel designs.

• **Interior 3D Plans:** Architecture, machine design, and even house floor plans are all be made by Generative Image and video technology.

### Concerns around AI use

- **Ethical:** It raises ethical concerns about the potential for biased or inaccurate content to be generated and disseminated.
- **Responsible Development:** If not designed and developed responsibly with appropriate safeguards, Generative AI can create harm and adversely impact society through misuse, perpetuating biases, exclusion, and discrimination.
- **Perpetuates biases:** Generative AI systems can perpetuate and amplify existing biases and exclusion If the models are trained on biased, non-inclusive data.
- **Fake news & hate words or speeches:** Generative AI systems can create content for malicious purposes, such as deepfakes, disinformation, and propaganda.
- **Access to privacy:** These systems can potentially access sensitive information, raising concerns about data privacy and security.
- **Incorrect data and diagnosis:** It may also produce low-quality and less accurate information, specifically in the context of complex engineering and medical diagnosis.
- **Accountability can not be fixed:** It can be challenging to determine who is responsible for the content generated by a generative AI system — the acquisition and consent model around the training data and intellectual property issues make it difficult to hold anyone accountable for any harm resulting from its use.

### **Way forward:**

- First, to address bias and fairness, researchers can use techniques such as de-biasing and fair representation learning, which can help to remove biases present in the training data.
- Second, Researchers can also use techniques such as counterfactual data generation, which can help to generate more diverse and representative training



- Third, there is need to add rigour and responsibility to developing AI technology, develop and enforce ethical guidelines, conduct regular audits for fairness, identify and address biases, and protect privacy and security.
- Fourth, There is need to add adequate policy, regulation, awareness, and education guardrails to develop and use Generative AI services ethically and responsibly. China has proposed a policy for the same. EG: the regulation mandates people using the technology to edit someone's image or voice, to notify and take the consent of the person in question.
- Fifth, Intellectual property law must find a way to protect artists from copies that erode the value of their original work, but at the same time encourage them to continue to be inspired by others

## 11. Fukushima Wastewater Problem

Japan is expected to start flushing **1.25 million tonnes of wastewater from the embattled Fukushima nuclear power plant into the Pacific Ocean** this year, as part of a \$76-billion project to decommission the facility.

- Currently, the radioactive water is treated in a complex filtration process that removes most of the radioactive elements, but some remain, including tritium - deemed harmful to humans only in very large doses.

### What are the concerns with this move?

- **No threshold level** - There is no known threshold below which radiation can be considered safe.
- **Health impacts** - Any discharge of radioactive materials will increase the risk of cancer and other known health impacts to those who are exposed.
- **Effect on marine resource** - Experts expect the affected water to poison the fish.
- **South Korea** banned seafood imported from around Fukushima from 2013.
- **Presence of radionuclides** - TEPCO hasn't removed tritium from the water. Tritium is easily absorbed by the bodies of living creatures and rapidly distributed via blood.
- In 2018, it was reported that there were other radionuclides including isotopes of ruthenium and plutonium in the treated water that could persist for longer in the marine creatures and on the seafloor.

### Alternatives:

- **Longer storage** - The Japanese government can store the water for longer and then discharge it as tritium's half-life (time it takes for its quantity to be halved through radioactive decay) is 12-13 years.
- The quantity of any other radioactive isotopes present in the water will also decrease in this time so that the water could be less radioactive at the time of discharge.
- **Tanks in uninhabitable land** - The tanks to hold the water can be situated in the land around the Fukushima facility which was declared to be uninhabitable by the Japanese government.

**Discharge into the sea** – In 2020, International Atomic Energy Agency (IAEA) officials said the discharge would be technically feasible and would allow the timeline objective to be achieved.

## 12. Digital Agriculture

The world's population will grow to 10 billion by 2050; agricultural land has halved in the last 50 years; 20-40% of crop yield is lost to pests and disease and another 10-25% is lost post-harvest. Take into account geo-political factors like the Ukraine war in account, and food security is a big problem facing



mankind. In all this, digital technologies may be the answer to ills in agriculture; vitally, they can help achieve sustainability if we overcome challenges.

### **Agriculture's digital drive**

- **Use of modern technology:** Farming is witnessing the use of modern technology for higher productivity and profitability. Today, farmers use digital tools for farm management, financial services, market services, information and much else.
- **Smart agriculture use of AI and IOT:** 'Smart agriculture' uses software for remote sensing, apart from big data, the Internet of Things (IoT) and artificial intelligence (AI). IoT in agriculture comprises sensors, drones and computer imaging integrated with analytical tools to generate actionable insights.
- **Use of data and ML:** Predictive analytics allows quick decision-making based on information drawn from data mining, data modelling and machine learning (ML).
- **Digital adoption of Supply chain:** Digital adoption can add value across the entire farm-to-fork (F2F) supply chain, covering the journey from planting to harvesting (of fruits, vegetables, grains, etc) till it arrives on one's plate. This journey's stakeholders include farm suppliers, farmers, food processors, traders, retailers and finally end consumers.
- **Precision farming:** Precision farming helps raise crop yields while minimizing the use of resources. It measures and analyses the needs of different fields and crops to aid waste management, reduce production costs, make optimal use of water and minimize environmental impacts.

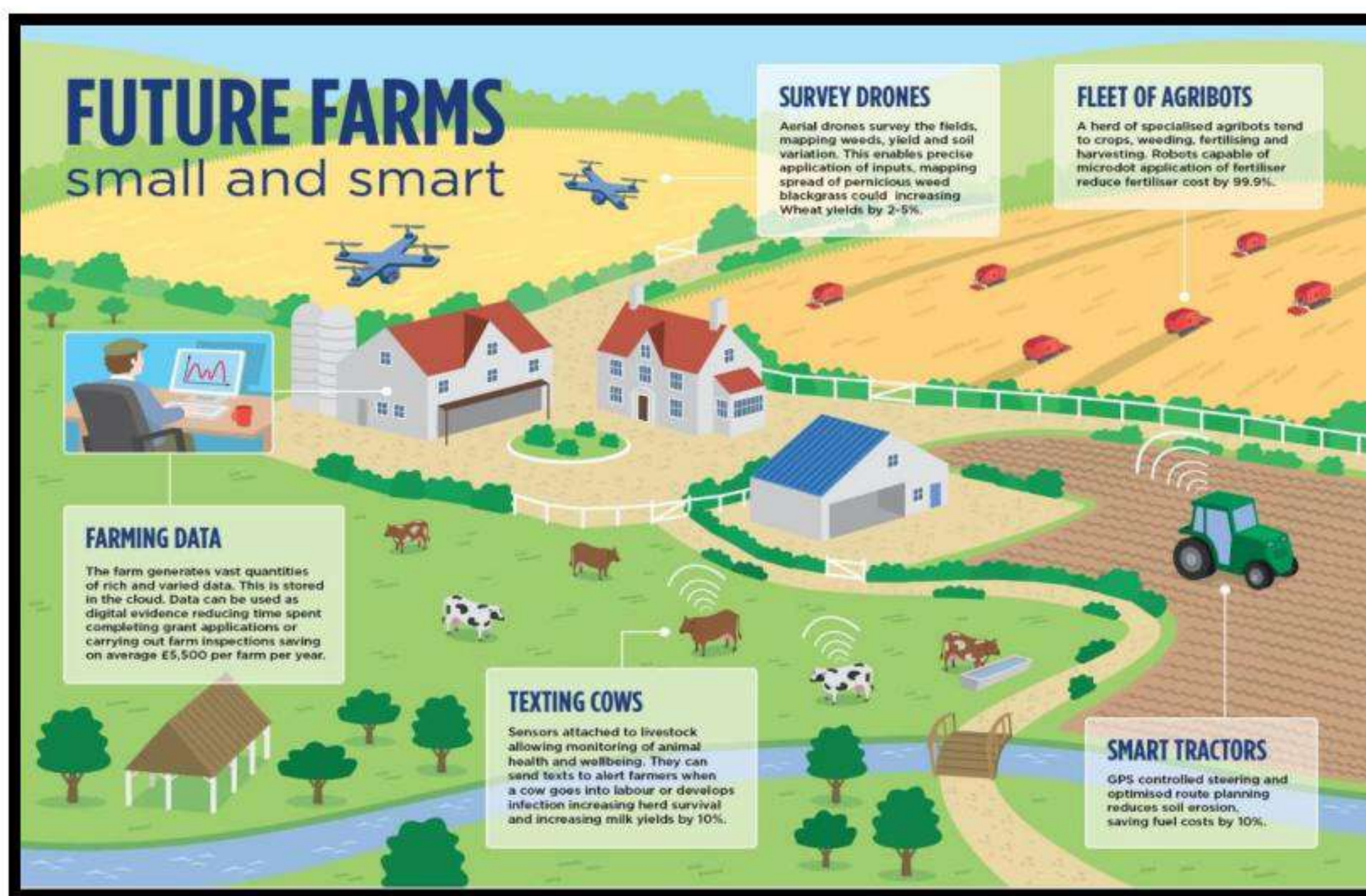
### **Challenges:**

- **Risks concentrated on farmer:** For example, all risk is concentrated on the farmer, who is encumbered by the vagaries of weather, selection of profitable products, poor access to crop insurance, etc. We need to provide more value to the farmer in compensation for that burden.
- **Trust deficit in the overall functioning of the F2F model:** Over time, decision-making in food production, crop marketing, transport, etc, has got heavily concentrated in the hands of large agricultural entities or producers. While production has risen, the democratization of decision-making has suffered.
- **Digital inequalities:** The sector's digital transformation is characterized by digital inequalities between large and small farmers, or between high- and low-income countries.
- **Challenges in the supplier ecosystem:** A fertilizer or agriculture equipment manufacturer may want to help farmers but is handicapped in creating the right ecosystem to provide a holistic solution.
- **Capital expenditure a major challenge:** Subsistence farmers cannot afford capital expenditure, and other farmers have financial constraints too. This is a major challenge at the farm level.

### **Government initiatives:**

- **AgriStack:** The **Ministry of Agriculture and Farmers Welfare** has planned to create 'AgriStack' – a collection of technology-based interventions in agriculture. It will create a unified platform for farmers to provide them end-to-end services across the agriculture food value chain.
- **Digital Agriculture Mission:** This has been **initiated for 2021 -2025** by the government for projects based on new technologies like artificial intelligence, blockchain, remote sensing and GIS technology, use of drones and robots, etc.
- **Unified Farmer Service Platform (UFSP):** UFSP is a combination of Core Infrastructure, Data, Applications, and Tools that enable seamless interoperability of various public and private IT systems in the agriculture ecosystem across the country.
- **National e-Governance Plan in Agriculture (NeGP-A):** A **Centrally Sponsored Scheme**, it was **initially launched in 2010-11 in 7 pilot States**, which aims to achieve rapid development in India through the use of ICT for timely access to agriculture-related information to the farmers





### 13. Padma Awards

The Padma Awards are one of the highest civilian honours of India announced annually on the eve of Republic Day.

- The Awards are given in three categories: **Padma Vibhushan (for exceptional and distinguished service)**, **Padma Bhushan (distinguished service of higher order)** and **Padma Shri (distinguished service)**. The award seeks to recognize achievements in all fields of activities or disciplines where an element of public service is involved.
- **Padma Awards, which were instituted in the year 1954**, is announced every year on the occasion of Republic Day except for brief interruption(s) during the years 1978 and 1979 and 1993 to 1997.
- The award is given in three categories, namely,
  - Padma Vibhushan for exceptional and distinguished service
  - Padma Bhushan for distinguished service of a high order; and
  - Padma Shri for distinguished service.
- All persons without distinction of race, occupation, position or sex are eligible for these awards. However, Government servants including those working with PSUs, except doctors and scientists, are not eligible for these Awards.
- The award is normally not conferred posthumously. However, in highly deserving cases, the Government could consider giving an award posthumously.
- A higher category of Padma award can be conferred on a person only where a period of at least five years has elapsed since conferment of the earlier Padma award. However, in highly deserving cases, a relaxation can be made by the Awards Committee.
- The awards are presented by the President of India usually in the month of March/April every year where the awardees are presented a Sanad (certificate) signed by the President and a medallion.



- The recipients are also given a small replica of the medallion, which they can wear during any ceremonial/State functions etc., if the awardees so desire. The names of the awardees are published in the Gazette of India on the day of the presentation ceremony.
- The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) should not be more than 120.
- The award does not amount to a title and cannot be used as a suffix or prefix to the awardees' name

#### WHO DECIDES?

- All nominations received for Padma Awards are placed before the Padma Awards Committee, which is constituted by the Prime Minister every year.
- The Padma Awards Committee is headed by the Cabinet Secretary and includes Home Secretary, Secretary to the President and four to six eminent persons as members.
- The recommendations of the committee are submitted to the Prime Minister and the President of India for approval.

#### BHARAT RATNA

- Bharat Ratna is the highest civilian award of the country. It is awarded in recognition of exceptional service/performance of the highest order in any field of human endeavour. It is treated on a different footing from Padma Award.
- The recommendations for Bharat Ratna are made by the Prime Minister to the President of India.
- No formal recommendations for Bharat Ratna are necessary.
- The number of Bharat Ratna Awards is restricted to a maximum of three in a particular year. Government has conferred Bharat Ratna Award on 45 persons till date.

## GS4

### 1. A step towards fighting corruption

Corruption is dishonest behavior by those in positions of power.

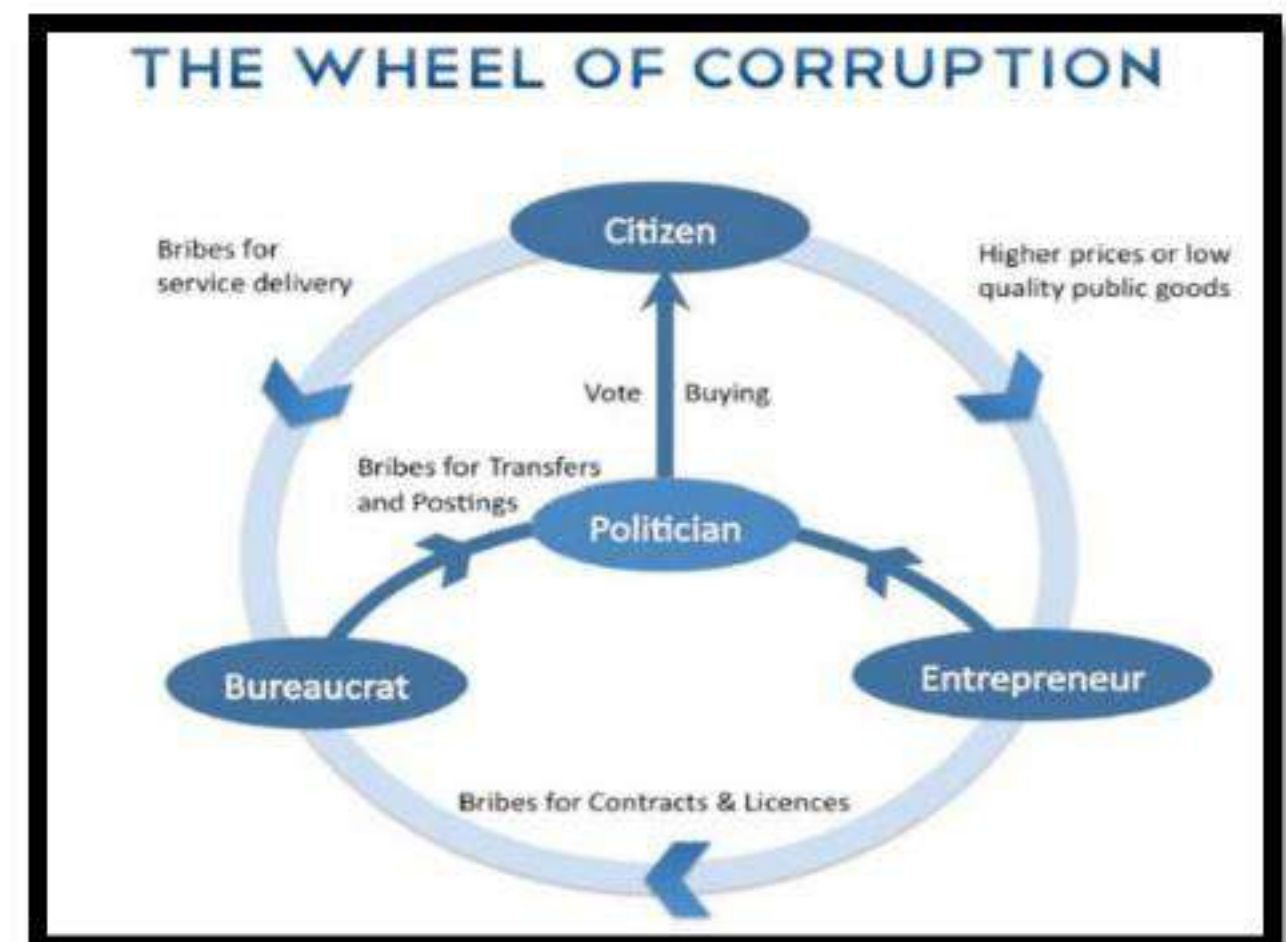
- Those who abuse their power may be individuals or they may belong to organizations, such as businesses or governments.
- India was ranked 85 among 180 countries in the corruption perception index 2021.

#### Causes of corruption

- **Legacy issues:** Pre liberalization license permit raj catered by Monopolies and restrictive trade practices facilitated the corruption. The lack of economic freedom led to abuse of the system.
- **Political system:** Election funding is **not transparent** making it prone to the usage of black money and funding based on quid pro quo. It leads to **crony capitalism**, an unholy nexus between politicians and corporates.
- **Criminalization of politics-** when the rule-breakers become rule makers, the casualty is the rule of law.
- **Low levels of formalization** (merely 10%) of the economy breed black money.
- **Unequal distribution of wealth** – Transparency International data suggests that corruption is directly proportionate to the economic gap in a nation.
- **Legal lacunae:** Archaic laws like IPC 1860 don't capture the complexities of administration and lead to the escape of wrongdoers.



- **Dilution of the RTI act and political misuse of CBI and other agencies.**
- **Judicial delays**
- **Lack of protection** to good Samaritans, Near non-existent whistleblowers protection
- **Social problems:** The mindset of the citizenry that doesn't look at the problems seriously and even accepts it as a necessary part of the system.
- **Failure of social morality,** education system to inculcate the values



### Way forward:

Recommendation	Examples
Corruption risk mapping	<ul style="list-style-type: none"> <li>Identifying corruption risks</li> <li>Evaluating extent of corruption</li> <li>Developing a corruption complaints system</li> </ul>
Registers and sunset clauses	<ul style="list-style-type: none"> <li>Clarification of regulation, ownership, funding systems and obligations</li> <li>Publishing contracts and improving the ability of the energy sector to predict changes</li> </ul>
Transparency initiatives	<ul style="list-style-type: none"> <li>Strengthening the right to information and formal reporting requirements</li> <li>Dissemination of information on plans, proposals, and projects</li> <li>Involvement of media and free press</li> <li>Assisting with socially responsible corporate reporting</li> <li>Making publicly available conflict of interest roles</li> </ul>
Enhanced enforcement of anti-corruption laws	<ul style="list-style-type: none"> <li>Strengthening regulatory and justice systems</li> <li>Potential restructuring and the unbundling of energy assets</li> <li>Mandatory audits of finances</li> <li>Implementing a whistleblowing system with adequate protections</li> <li>Developing a punishment system for abuses, or enhancing enforcement to increase investigations and convictions</li> <li>Signing the UN Convention Against Corruption (UNCAC) and other efforts (e.g., Foreign Corrupt Practices Act, Bribery Act)</li> <li>Enforcing international human rights norms</li> </ul>
Shared-ownership models	<ul style="list-style-type: none"> <li>Balancing stakeholder interests in policymaking</li> <li>Ensuring the participation of local actors or civil society</li> <li>Addressing disparities and the interests of vulnerable groups</li> </ul>



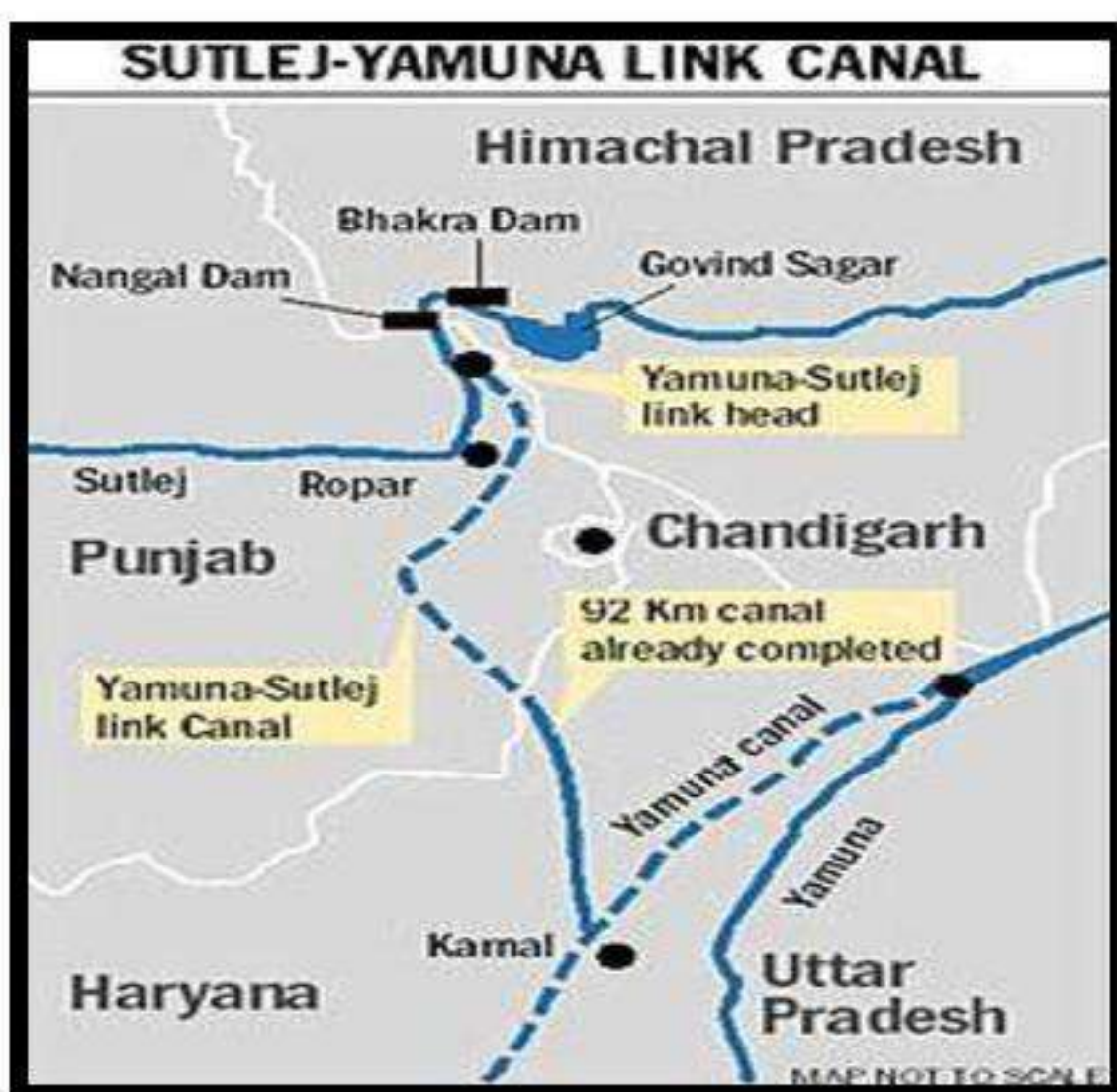
## Places in news:

### 1) Missing monuments:

- **Guns of Emperor Sher Shah:** tinsukia (Assam)
- The Ruins of Copper Temple, Paya, Lohit (Arunachal Pradesh)
- Kos Minar, Mujesar, Faridabad (Haryana)
- Kutumbari Temple, Dwarahat, Almora (Uttarakhand)
- Rock Inscription, Satna (Madhya Pradesh)
- Old European Tomb, Pune (Maharashtra)
- 12th Century Temple, Baran (Rajasthan) and Telia Nala Buddhist ruins, Varanasi (Uttar Pradesh).

### 2) Sutlej Yamuna Link Canal (SYL) Dispute: SYL is an under-construction canal to connect the Sutlej and Yamuna rivers.

- It is supposed to carry water from Punjab to Haryana through sharing of **Ravi-Beas water**.
- The river Beas joins river Sutlej in Punjab.
- The dispute regarding sharing of river water emerged after Punjab was reorganised in 1966, and the state of Haryana was created (out of Punjab).
- After this, Punjab refused to share waters of Ravi and Beas with Haryana



### 3) Sunni Dam Hydro Electric Project: It is a Run of River project. It was being executed on the Sutlej in Shimla.

### 4) Silent Valley National Park: is located in the Southwestern corner of Nilgiris, Kerala

- **A perennial river named Kunthipuzha** is passing through the western side of the park, from north to south direction finally merging into **Bharathapuzha**.
- **Fauna:** Silent Valley Park is known for many highly endangered species such as lion-tailed macaque, tiger, gaur, leopard, wild boar, panther, Indian Civet and Sambhar.
- **The indigenous tribal groups that live within park boundaries include Irulas, Kurumbas, Mudugas and Kattunaikkars.**

### 5) Deepor Beel: It is a permanent freshwater lake and also a bird sanctuary in Assam.

- It is a **riverine wetland**, lying in a former channel of the Brahmaputra River, it lies to the south of the main river channel.
- It was designated as a **Ramsar site in 2002 and it is the only Ramsar site in Assam.**
- This lake is a **staging site on migratory flyways and some of the largest concentrations of aquatic birds** in Assam can be seen, especially in winter.
- Some **globally threatened birds are supported**, including Spot-billed Pelican, Lesser Greater Adjutant Stork and Baer's Pochard.

### 6) Nilgiri Biosphere Reserve (NBR):

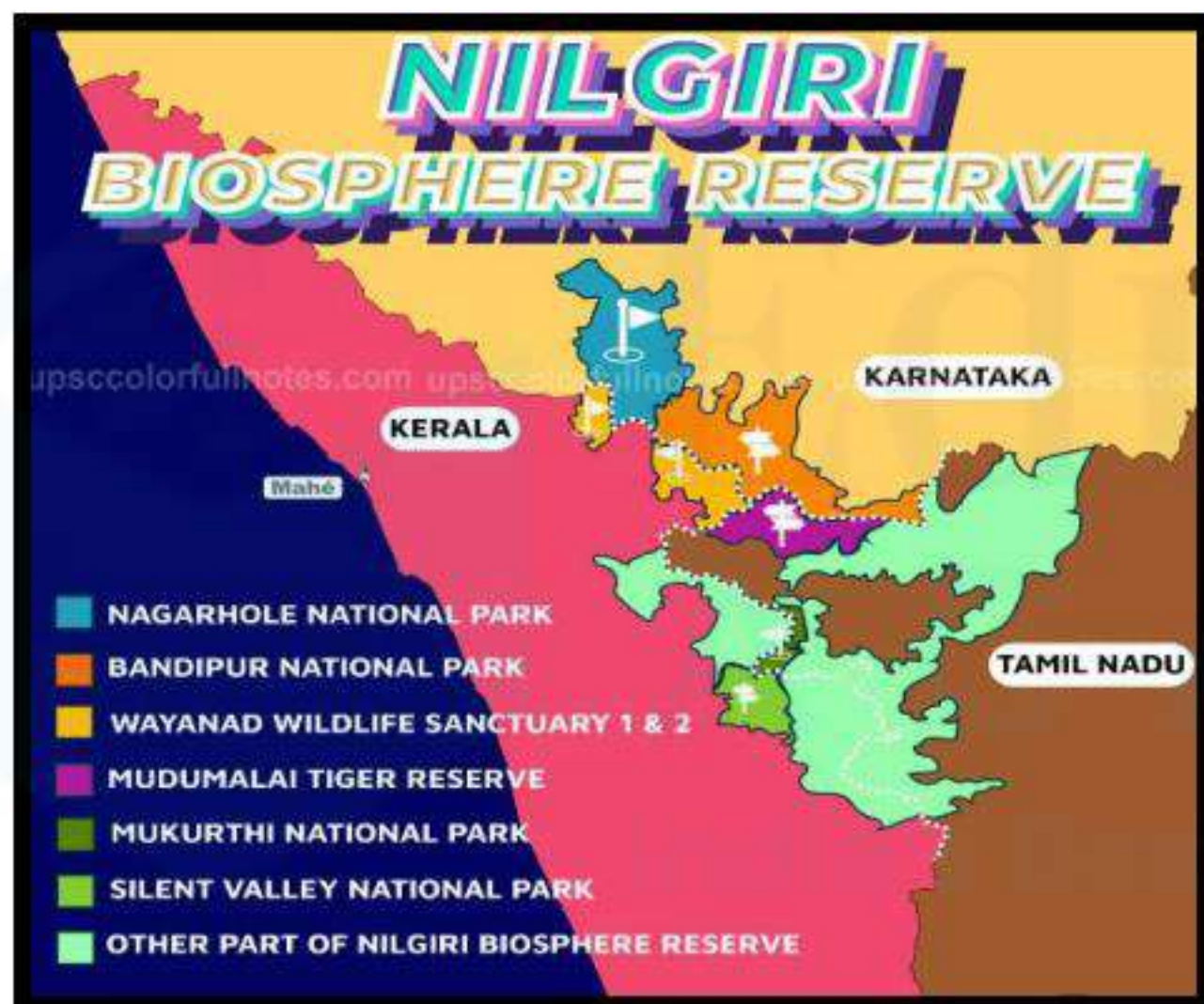
- **Name Origin:** From the blue flower-clad mountains of the Nilgiris plateau (TN)
- It was the **first biosphere reserve in India established in the year 1986.**
- It is located in the Western Ghats and encompasses parts of Tamil Nadu, Kerala and Karnataka.
- **The confluence of Biotic zones:** It is at the confluence of Afro-tropical and Indo-Malayan biotic zones of the world.
- It is a **Biodiversity Hotspot**



- **Tribal:** Todas, Kotas, Irullas, Kurumbas, Paniyas, Adiyans, Edanadan Chettis, Cholanaickens, Allar, Malayan, etc., are native to the reserve.
- **Protected Areas in NBR:** Mudumalai Wildlife Sanctuary, Wayanad Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, Mukurthi National Park and Silent Valley are the protected areas present within this reserve.

**7) Kangla Nongpok Thong: in Manipur.**

- The Nongpok Thong was **dismantled by the British after the 1891 Anglo-Manipur War.**
- The opening of **Kangla Nongpok Thong** has a **very important cultural significance.**



- The Eastern Gate of Kangla is considered to be the pathway to peace, prosperity and happiness for the people of Manipur.

**8) Coringa Wildlife Sanctuary:** It is a wildlife sanctuary and estuary situated in Andhra Pradesh.

- Between this sanctuary area and the sea Hope Island blocks the **direct confluence of the sea and Godavari.** As a result, about 40% of the sanctuary is only sea backwaters and the rest of the area is intermingled with creeks and gets inundated with tidal waters.
- **Flora:** It has extensive mangrove and dry deciduous tropical forests. It is the second-largest stretch of mangrove forests in India.

- **Fauna:** It is home to the critically endangered white-backed vulture and the long-billed vulture.

**9) Chanaka-Korata Barrage:** It is a **Telangana-Maharashtra joint project on the Penganga river to irrigate 6,677 hectares of land.**

- **Penganga River:** It originates in the Ajantha ranges in Aurangabad district in Maharashtra.
- It is a major **tributary of the Wardha River** (part of Godavari river basin).
- The river flows along the State border between Maharashtra & Telangana before converging into Wardha river.
- **Tributaries:** The main tributaries of the river are **Adan, Kas, Arunavati Kayadhu & Pus.**
- The famous **Sahastrakund** falls on this river.

**10) Tapovan Vishnugad hydropower project:** It is a 520 MW run-of-river project being constructed on **Dhauliganga River in Chamoli District of Uttarakhand, India.**

- NTPC is developing the project

**11) Katarniaghat Wildlife Sanctuary (KWS):** It is situated in the Upper Gangetic plain falling in the **Terai of Bahraich district of Uttar Pradesh.**

- It is part of Dudhwa Tiger Reserve Lakhimpur kheri.
- The **Katarniya Ghat Forest** provides strategic connectivity between tiger habitats of India and Nepal.
- **Flora:** The sanctuary has a mosaic of Sal and Teak forests, lush grasslands, numerous swamps and wetlands.

**12) Yucatan Peninsula:** it is Mexico's southeastern projection, extending into the Atlantic Ocean.

- It separates the Gulf of Mexico to the north and west and the Caribbean Sea to the east.



**Mesoamerica:** It refers to a geographical and cultural area which extends from central Mexico down through Central America, including the territory which is now made up of the countries of Guatemala, Belize, Honduras, and El Salvador



### 13) Medog Project:

- It is a **proposed Chinese project to build the world's biggest hydroelectric dam over the Yarlung Tsangpo** (name of Brahmaputra in Tibet) river in Tibet close to the Arunachal Pradesh border.
- The **proposed dam will be built in Medog County, where the Yarlung Tsangpo/Brahmaputra Grand Canyon** (world's deepest and longest canyon) is located.

**14) Three Gorges Dam:** It is a **hydroelectric gravity dam** that spans the Yangtze River located in Hubei province, China. The Three Gorges Dam is the **world's largest power station in terms of installed capacity (22,500 MW)**.

**15) Seshachalam Hills:** The Seshachalam Hills are a part of the Eastern Ghats in Andhra Pradesh.

- They are a **group of seven hills** namely, Seshadri, Neeladri, Garudadri, Anjanadri, Vrishabhadri, Narayanadri and Venkatadri.
- The Seshachalam hills consist of sandstone and shale along with limestone.
- **Tirupati which is considered as one of the major Hindu pilgrimage towns** in India is located in the hills.
- The **Srivenkateshwara National Park** is also located in this mountain range.
- Seshachalam was designated as a Biosphere Reserve in the year 2010
- It has large reserves of **red sandalwood**.

### 16) Etalin Hydroelectric Project (EHEP):

- It is a 3,097 MW hydropower project planned in the Dibang Valley of Arunachal Pradesh.
- It is one of the **largest hydropower projects** proposed in the country in terms of installed capacity.
- EHEP is proposed to be developed as a combination of two run-of-the-river schemes.
- The project involves the construction of concrete gravity dams on the Tangon and Dri rivers which are tributaries of Dibang river.
- The project area is dominated by indigenous population belonging to Idu-Mishmi tribes.



## Prelims Booster

### 2.1.23

**1) Remote Electronic Voting Machine:** The new RVM prototype will **enable a voter, who is listed in constituencies, to exercise voting rights from a single machine.**

- The multi-constituency remote EVM, developed by **Bharat Electronics Limited (BEL) and the Electronics Corporation of India Limited** (under dept of atomic energy), can handle up to **72 constituencies from a single remote polling booth.**
- It will be a **standalone device which doesn't need connectivity to operate.**
- The **Representation of the People Act, The Conduct of Election Rules** and The Registration of Electors Rules will need to be amended to introduce remote voting.

**2) Nilgiri Tahr Conservation Project:** Tamil Nadu government plans to develop a better understanding of the Nilgiri Tahr population through **surveys and radio telemetry studies**, reintroduce the Tahrs to their historical habitat, address proximate threats etc.

- Nilgiri Tahr is the **only Caprinae species** found in the tropical mountains of southern
- They are **endemic to the Western Ghats** and used to inhabit a large part of the Western Ghats between Kerala and Tamil Nadu.
- **IUCN – Endangered, Wildlife (Protection) Act of India, 1972 - Schedule I**

**3) Polar Vortex:** it is a large area of low pressure and cold air surrounding both of the Earth's poles. It was also known as the Polar Pig.

- **"Vortex" refers to the counterclockwise flow of air that helps keep the colder air near the Poles.** It always exists near the poles, but weakens in summer and strengthens in winter.
- However, many times during winter in the northern hemisphere, the polar vortex will

expand, sending cold air southward. This occurs fairly regularly during wintertime

- It is also not a feature that exists at the Earth's surface, rather it exists in upper atmosphere.
- The only danger to humans is the magnitude of how cold temperatures will get when the polar vortex expands, sending Arctic air southward into areas that are not that cold.

**4) European Union:** The EU is a **group of 27 countries that operate as a cohesive economic and political block.**

- 19 of these countries use **EURO as their official currency.** 8 EU members (Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden) do not use the euro.
- The predecessor of the EU was created in the aftermath of the Second World War to foster economic cooperation. The result was the European Economic Community (EEC), created in 1958. A name change from EEC to the European Union (EU) was happened in 1993.
- The EU has developed an **internal single market through a standardised system of laws** that apply in all member states in matters, where members have agreed to act as one.
- Croatia becomes a fully integrated member of EU as it switched to the euro.

**5) King Penguin:** They are the **2nd largest penguin species.**

- **Habitat:** They live on **Antarctic and sub-Antarctic islands.** Major colonies: Crozet, Prince Edward Island, Kerguelen Island, Heard Island, South Georgia and Macquarie Island.
- **King penguins don't make a nest** and they carry their egg around with them at all times on top of their feet by taking turns.
- **IUCN status:** Least Concern.



- **Threats:** Climate change, habitat shifting and southward shifting of the Antarctic Polar Front.

### 3.1.23

**1) Indian rhinoceros:** Assam Chief Minister has recently announced that no rhinos were poached in the state in 2022.

- They are found only in the **Brahmaputra valley, North Bengal, and southern Nepal.**
- It has a single black horn (can grow up to 60 cm), a tough, grey-brown hide with skin folds.
- The Indian rhino is **listed as vulnerable** (it was earlier placed in the endangered category.)
- **Assam's Kaziranga National Park (KNP) alone has 2,613 animals** out of 3500 rhinos in India.

**2) FAME India Phase II:** Faster Adoption and Manufacturing of Electric Vehicles in India Phase II is launched by Department of Heavy Industry for promotion of electric and hybrid vehicle in the country by offering upfront Incentive on purchase of Electric vehicles and by establishing charging Infrastructure for electric vehicles.

- The scheme with total outlay of Rs 10,000 Crores over the period of three years (2019-20 to 2021-22) will be implemented with effect from 1st April 2019.
- Target is to support 10 Lakhs e-2Wheeler, 5 Lakhs e-3Wheelers, 55000 4Wheelers and 7000 Buses.

**3) Lumpi-ProVacind Vaccine:** It is safe in animals and induces **LSDV-specific antibodies and cell-mediated immune response.** The vaccine is used for the prophylactic immunization of animals against **Lumpy Skin Disease**, which illicit protection for about one year

- The vaccine is a homologous, live attenuated vaccine to protect against Capripoxvirus
- The virus is genetically similar to Goatpox and sheeppox. It is **transmitted by flies and mosquitoes or ticks (blood-feeding insects).** LSD doesn't affect humans

- Agrinnovate India Limited, the commercial arm of DARE, Ministry of Agriculture granted "Non-Exclusive Rights" for Commercial production of "Lumpi-ProVac", to Institute of Veterinary Biological Products (IVBP), Pune

**4) Unexploded Ordnance (UXO):** A military ammunition or explosive device that remains unexploded even after it has been primed and fired is known as **Unexploded Ordnance (UXO) in military parlance.** Such UXO can be left-overs from a war, a military battle inoculation exercise, field firing exercises etc.

- All unexploded munitions are treated as potentially dangerous and capable of detonating till proven otherwise by professional assessment by military ammunition experts.

**5) Higher Education Financing Agency (HEFA):** HEFA, which was set up as a non-profit Non-Banking Financing Company (NBFC), is a joint venture between **the Union Ministry of Education and the Canara Bank to finance infrastructure development in educational institutions** through long-term loans. While the premium is paid by the institute, interest is paid by the government.

- The government expanded the scope of HEFA in 2018 under **the Revitalizing Infrastructure and Systems in Education or RISE by 2022 initiative**, bringing schools and medical colleges under its ambit, and making it the nodal body in infrastructure financing in the education sector.
- HEFA will have an authorized capital of 2,000 crore rupees and the government equity would be 1,000 crore.
- It also mobilizes CSR funds from Corporates/PSUs which will, in turn, be released for promoting research and innovation in these institutions on a grant basis.

### 4.1.23

**1) Centrally Protected Monuments:** Recently, The Ministry of Culture reported to



Parliament that **50 of India's 3,693 centrally protected monuments were missing.**

- The **Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act) 1958** regulates the preservation of monuments and archaeological sites of national importance.
- The Act protects monuments and sites that are more than 100 years old, including temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons and mile pillars that may be of historical significance.
- The Archaeological Survey of India (ASI), which is under the aegis of the Union Ministry of Culture, functions under this Act.

**2) Dieback Disease:** The dieback disease is mainly caused by the **fungi Phomopsis azadirachtae**.

- The dieback disease affects **leaves, twigs and the inflorescence of neem trees of all ages and it causes almost 100% loss of fruit production** in severely infected trees.
- The dieback is a **fungal disease but the neem trees are sometimes hit by insect infestation** and the combination of both increases its impact.
- The appearance of symptoms starts with the **onset of the rainy season** and becomes progressively severe in the later part of the rainy season and early winter.

**3) Rani Velu Nachiyar:** Born In Tamil Nadu, She was the **first queen to fight against the British colonial power in India.** She is known by Tamils as **Veeramangai**.

- She was trained in **war match weapons usage, martial arts** like Valari, Silambam (fighting using the stick), horse riding and archery.
- She was a scholar in many languages like French, English and Urdu.
- In collaboration with **Hyder Ali and Gopala Nayaker, she waged a war against the British** and emerged victoriously in 1780.
- She proudly ruled **Sivagangai** for more than 10 years. During her reign, the queen also created a women's only army called **Udaiyaal**.

**4) Utkarsh 2.0:** The Reserve Bank of India (RBI) has launched **Utkarsh 2.0 from 2023-25, the second phase of its medium-term strategy for strengthening regulatory and supervisory mechanisms.**

- The six vision statements are excellence in performance of its statutory and other functions, strengthened trust of citizens and institutions in the RBI, enhanced relevance and significance in national and global roles, **transparent, accountable and ethics-driven internal governance, best-in-class and environment-friendly digital and physical infrastructure**, and innovative, dynamic and skilled human resources will guide the strategy.

**5) Sammed Shikharji Temple:** It is believed that **20 out of 24 Tirthankars (Jain spiritual leaders) attained salvation at Sammed Shikharji**, located on the Parasnath Hills Jharkhand. It is **the biggest pilgrimage of the Jain community.**

- It is important for both the **Digambara and Swethambara sects of Jainism.** The hill is known to be the **highest mountain in Jharkhand.** The Hill is named after Parasnath (the 23rd Tirthankar)
- **Shetrunjay hill:** Situated on the banks of the Shetrunji river around 164 feet above sea level, Shetrunjaya Hills in Gujarat are home to 865 Jain temples and are a holy place for Shwetambara Jains.

### 5.1.23

**1) Missing monuments:** The Ministry of Culture recently told Parliamentary Standing Committee that **50 of India's 3,693 Centrally Protected Monuments (CPM) were missing**

- **How can a monument go "missing":** Government focus on the social issue rather than heritage: In the decade following the independence, the focus of **successive governments was on health, education and infrastructure, rather than protecting heritage.** Rapid urbanization, submergence by reservoir/dams, difficulties in tracing in remote locations: 24 are untraceable



**2) National Green Hydrogen Mission:** Ministry of New and Renewable Energy Aims to make **India a Global Hub for the production, utilization and export of Green Hydrogen** and its derivatives components of the scheme:

- **The Strategic Interventions for Green Hydrogen Transition Programme (SIGHT):** Under this, two distinct financial incentive mechanisms will be provided
- Targeting domestic manufacturing of electrolyzers and Production of Green Hydrogen
- The Mission will also support pilot projects in emerging end-use sectors and production pathways.
- **Regions capable of supporting large-scale production and/or utilization of Hydrogen will be identified and developed as Green Hydrogen Hubs.**
- **A public-private partnership framework for R&D** (Strategic Hydrogen Innovation Partnership – SHIP) will be facilitated under the Mission.
- A coordinated skill development programme will also be undertaken under the Mission.

### 3) Types of hydrogen:



### 4) RBI Integrated Ombudsman Scheme:

- **It amalgamates three ombudsman schemes of RBI** – the banking ombudsman scheme of 2006, the ombudsman scheme for NBFCs of 2018 and the ombudsman scheme of digital transactions of 2019.
- The unified ombudsman scheme will provide redress of customer complaints involving deficiency in services rendered by RBI-regulated entities banks, NBFCs (Non-

banking Financial Companies) and pre-paid instrument players if the grievance is not resolved to the satisfaction of the customers or not replied within a period of 30 days by the regulated entity.

**5) Heat Dome:** Recently, Several parts of Europe witnessed an unprecedented winter heat wave and experts said that temperatures increased 10 to 20 degrees Celsius above normal.

- **A heat dome occurs when an area of high-pressure traps warm air over a region, for an extended period.** The longer that air remains trapped, the more the sun works to heat the air, producing warmer conditions with every passing day.
- The heat dome's formation is **related to the behaviour of the jet stream**; an area of fast-moving air high in the atmosphere.
- The jet stream is believed to have a wave-like pattern that keeps moving from north to south and then north again.
- When these waves get bigger, they move slowly and sometimes can become stationary. This is when a heat dome forms.

### 6.1.23

**1) Broadcasting Infrastructure and Network Development (BIND) Scheme:** a Central Sector Scheme BIND by ministry of Information and Broadcasting (2025-26)

- It will financially support **Prasar Bharati in the expansion and upgradation of its broadcasting infrastructure, content development, and civil works** and widen the reach in Left Wing Extremism, border, and strategic areas. This will also provide high-quality content
- The BIND scheme will **increase coverage of AIR FM transmitters in the country to 66 percent by geographical area**, up from current 59 per cent, and 80 per cent by population, up from present 68 percent coverage.

**2) Sodium tetrafluoroborate (NaBF<sub>4</sub>):** Scientists from the **Institute of Nano Science and Technology (INST) Mohali**, an



autonomous institute of the Department of Science and Technology (DST), have **introduced a new electrolyte called (NaBF<sub>4</sub>)** which can help make electrochemical ammonia synthesis more efficient and will be useful for industries producing green energy or hydrogen.

- It is a salt that forms **colourless or white water-soluble rhombic crystals and is soluble in water** but less soluble in organic solvents.
- NaBF<sub>4</sub> not only acts as an N<sub>2</sub> carrier in the medium but also works as a full-fledged “co-catalyst” along with active material transition metal-doped nanocarbon (MnN<sub>4</sub>) to deliver high-yield of ammonia (NH<sub>3</sub>) at absolutely ambient experimental conditions

**3) National Single Window System:** NSWS is a **digital platform to guide you in identifying and applying for approvals according to business requirements.** The portal hosts applications for approvals from 26 Central Departments and 19 State Governments.

- NSWS is providing a **single interface to apply for all G2B clearances from various Ministries and Departments** as well as eliminating duplication of work by auto-populating form fields across different approvals based on single investor profile.
- The platform is built to serve as an advisory tool and is an epitome of the ‘Whole of Government’ approach.

**4) Eat Right Station:** It’s **certification is awarded by FSSAI (under the Ministry of Health and Family Welfare)** to railway stations that set benchmarks in providing safe and wholesome food to passengers. It has 240 parameters concerning food storage and hygiene, based on which the certification is accredited.

- They are also rated on a scale of one to five—five being the highest level of compliance with the standards and regulations in place. India has so far 34 ‘Eat Right’ certified stations

**5) Kala-azar:** There has been a 98.7 per cent decline in cases of Kala-azar from 2007 to 2022 in India

- India is committed to **eliminating Kala-Azar from the country by 2023**
- Visceral leishmaniasis (VL), or kala-azar, is the **most severe form of leishmaniasis and, is associated with high fatality.** It is also a neglected tropical disease (NTD)
- Spread: **Caused by protozoan parasites of the Leishmania genus (transmitted through the bite of Sand flies), migrates to internal organs like liver, spleen (hence “visceral”), and bone marrow.** It is considered the second deadliest parasitic killer in the world after Malaria
- **Kala-azar is endemic to Bangladesh, Bhutan, India and Nepal**
- It is endemic to four states Bihar, Uttar Pradesh, Jharkhand and West Bengal
- It is a treatable disease with anti-leishmanial medicines

### 7.1.23

**1) Sagol Kangjei:** Modern polo is said to have originated from Sagol Kangjei, a sport indigenous to Manipur, in which players ride horses, specifically the Manipur Ponies, which are referenced to the 14th century. Marjing is considered the God of polo and features a pony as his carrier.

- The **Lai-Haraoba festival of the state depicts the life and times of Khori-phaba, the polo-playing god of sports.** There are no goalposts in this game. Goal lines determine the end of the two boundaries of the rectangular field.
- **The Manipur Pony is one of five recognised equine breeds of India** and has a powerful cultural significance for Manipuri society.

**2) One Week One Lab Campaign:** Through this, CSIR will highlight India's global excellence in technology, innovation and Start-ups. Each of CSIR's 37 constituent laboratories, spread nationwide, will showcase their legacy, exclusive innovations and breakthroughs every successive week.

- CSIR: It is the largest research and development (R&D) organisation in India which was set up in 1942. It is funded by the Ministry of Science and Technology
- The Prime Minister of India (Ex-officio) is the President of this organisation.



- Vice President: Union Minister of Science and Technology (Ex-officio)

**3) Veer Guardian-2023:** India and Japan are all set to hold the joint Air Exercise, 'Veer Guardian-2023' involving the Indian Air Force and Japan Air Self Defence Force (JASDF) at Hyakuri Air Base, Japan. They will undertake multi-domain air combat missions in a complex environment and will exchange best practices.

**4) New Umbrella Entity (NUE):** RBI is said to have put on hold licensing of the **New Umbrella Entity (NUE) network**, a fintech institution planned as a rival to the National Payments Corporation of India

- NUE is an entity (under the Companies Act 2013) that will manage and operate the new payment system in the retail sector such as ATMs, POS, UPI etc.
- It will also manage **clearing and settlement systems that could be an alternative to the bank-promoted NPCI**. It will be allowed to charge fees for transactions (unlike the existing NPCI)
- The RBI had in 2020 issued guidelines for corporates to create for-profit NUEs with an aim to foster competition and “de-risk” India’s burgeoning digital payments ecosystem, where much of the settlement burden has fallen on the non-profit NPCI over recent years

**5) Floatovoltaics:** Floating solar plants, or **FSPV (floating solar photovoltaic)** are panel structures that are installed on water bodies like **lakes, basins, and reservoirs** instead of on solid structures like a roof or terraces.

- The biggest impetus behind the rise of **large-scale FSPV** has been that it doesn’t take up any land space, which could be then used for construction and agriculture.
- **The world’s first large-scale FSPV system was installed in 2011, in Napa Valley, California.**
- India: Currently less than 1% of solar installations are floating.
- **The largest floating solar power plant in India is currently the Ramagundam in Peddapalli district of Telangana, with a capacity of 100 MW.**

- **Currently a plant is being built on the Narmada’ Omkareshwar Dam in Khandwa, Madhya Pradesh** is being built with a capacity of 600 MW, which will soon be the largest floating solar power plant in the world.

#### 9.1.23

**1) Parshuram Kund Festival:** It is a **Hindu pilgrimage site situated on the Brahmaputra plateau** in the lower reaches of the Lohit River in Arunachal Pradesh, India.

- Devotees and sadhus take a holy dip in its water each year on the occasion of Makar Sankranti, in January. **It is also known as the Kumbh of the Northeast.**
- **Religious significance:** It is dedicated to a **mythological figure sage Parshuram**. This popular festival attracts pilgrims from **Nepal, from across India, and from nearby states of Manipur and Assam.**

**2) Manufactured sand:** **M-sand** is a **substitute of river sand for concrete construction** and is produced from hard granite stone by crushing.

- **Benefits:** It can be dust free, the sizes of m-sand can be controlled easily so that it meets the required grading for the given construction. It is well graded in the required proportion.
- **It does not contain organic and soluble compounds** that affect the setting time and properties of cement, thus the required strength of concrete can be maintained.
- Usage of M-sand prevents dredging of river beds to get river sand which may lead to environmental disaster like ground water depletion, water scarcity.

**3) Nazul land:** Land or buildings in or near towns or villages which have escheated to the Government; property escheated or lapsed to the State. **Escheat is the right of a government to take ownership of estate assets or unclaimed property in the event there are no heirs or beneficiaries.**

- **It includes the type of Government land used for non-agricultural purpose such as building, road, or any other public purpose**



or the nazul land which has potential for such use in future including such lands granted on long or short term lease or on no compensation agreement.

- Living on a land denoted as Nazul land is illegal unless you get it on lease.

**4) Technical Textiles:** They are **functional fabrics** that have applications across various industries including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety, personal protection etc.

- The **penetration level of technical textiles is low in India** varying between 5-10% against the level of 30-70% in developed countries.
- **National Technical Textiles Mission:** approved in 2020 for four years period (FY 2020-21 to FY 2023-24) to position India as a global leader in Technical Textiles.
- **It further aims to increase the domestic market size of technical textiles** from USD 40 billion to USD 50 billion by 2024.
- **It has four components:** R&D; Development of the market for technical textiles; export promotion, and focus on education, training and skill development.

**5) Sovereign Green Bonds:** RBI for the 1<sup>st</sup> time will issue SGB of 5 and 10 year tenure worth 16000 cr.

- A **sovereign green bond is a debt instrument issued by the central or state government to borrow money from investors.**
- Green bonds are issued by companies, countries and multilateral organisations to exclusively fund projects that have positive environmental or climate benefits and provide investors with fixed income payments.
- The projects can include **renewable energy, clean transportation and green buildings, among others.**

#### 10.1.23

**1) Young Professionals Scheme:** It was conceived as part of an **India-U.K. Migration and Mobility MoU signed in May 2021** and

was announced in November at the G20 summit in Bali.

- It will permit up to **3,000 of their degree-holding citizens aged between 18 and 30** to live and work in each other's countries for two years.
- The programme will be **reciprocal, also allowing UK professionals in the same position to participate in a professional exchange** by living and working in India.
- This scheme makes **India the first visa-national country** to benefit from the scheme.

**2) SPRINT Scheme:** To achieve 'Aatmanirbharta' in defence, **Naval Innovation and Indigenisation Organisation (NIIO), in conjunction with the Defence Innovation Organisation (DIO),** aims to induct at least 75 new indigenous technologies/products into the Indian Navy till August 2023.

- This collaborative project is named **SPRINT {Supporting Pole-Vaulting in R&D through Innovations for Defence Excellence (iDEX)}**
- It was launched in **2022 and will transform Navy from a 'Buyer's Navy' to a 'Builder's Navy.**

**3) Article 176:** The Governor shall address the **Legislative Assembly or both Houses** (in the case of a State having a Legislative Council), assembled together at the

- Commencement of the first session after each general election to the Legislative Assembly and Commencement of the first session of each year
- Provision shall be made by the rules regulating the procedure of the House or either House for the allotment of time for discussion of the matters referred to in such address.

**4) Duchenne Muscular Dystrophy:** It is the **most common and fatal type of muscular dystrophy marked by progressive muscle degeneration and weakness** due to alterations of a protein called "dystrophin" that helps keep muscle cells intact.

- Patients: usually **children have reduced bone density** (mostly boys, and rarely girls)



- India has over 5 lakh patients. The current therapeutic options available to treat DMD are minimal and highly expensive treatment and are mostly imported from abroad.
- A research team is working to **replace Antisense Oligonucleotide (AON)-based therapeutics' idea** (to mask specific exons in a gene sequence) with molecular tags, so that customised/personalised medicine can be developed.
- Researchers have made progress in the development of generic Utrophin Modulators.
- Utrophin and Dystrophin can co-localise in human muscle. Utrophin overexpression could act as a surrogate, compensating for the lack of dystrophin.

#### 5) Appointment of High court judges:

APPOINTMENT OF HC JUDGES (2018-2022)				
Categories	Bar	Service	Total	%
General	213	211	424	79
Other Backward Classes	28	29	57	11
Minority	8	6	14	2.6
Scheduled Castes	7	8	15	2.8
Scheduled Tribes	3	4	7	1.3
Information not available	12	8	20	
Total	271	266	537	

Till 19/12/2022

11.01.2023

#### 1) Section 6A of the Citizenship Act, 1955:

Entered due to Assam Accord. It **created a special provision for Assam by which persons who entered between January 1, 1966, and March 25, 1971, and who are residing in the state, upon being detected foreigners, will be allowed to register**

- Upon registration, such a person will have the same rights and obligations as a citizen of India, but will not be entitled to be included in any electoral roll for a period of 10 years.
- **Foreigners who had entered Assam before January 1, 1966, and been "ordinarily resident" in the State, would have the rights**

and obligations of Indian citizens including the right to vote.

**2) Horizontal Reservation:** It refers to the **equal opportunity provided to other categories of beneficiaries such as women, veterans, the transgender community, and individuals with disabilities, cutting through the vertical categories.**

- For example, if **women have 50 per cent horizontal quota, then half of the selected candidates will have to necessarily be women in each vertical quota category**-ie, half of all selected SC candidates will have to be women, half of the unreserved or general category will have to be women, and so on. While a vertical reservation applies separately for each of the groups specified under the law, the horizontal quota is always applied separately to each vertical category, and not across the board.
- **Uttarakhand Public Services (Horizontal Reservation for Women) Bill 2022, provides women with 30 per cent horizontal reservation in public services and posts.**

**3) Delegated Legislation:** Parliament routinely delegates **certain functions to authorities established by law** since every aspect cannot be dealt with directly by the law makers themselves.

- **This delegation of powers is noted in statutes, which are commonly referred to as delegated legislations**
- **The delegated legislation would specify operational details, giving power to those executing the details**
- **Classic examples of delegated legislation are regulations and by-laws under legislation.**

**4) Tamizhakam:** Tamilkam, refers to the deep south- the land situated south of Krishna river and divided into 3 kingdoms:



**Chera, Chola and Pandya.** This includes the territories under today's Tamil Nadu, Kerala, Lakshadweep, Pondicherry, South Andhra Pradesh, parts of southern Karnataka and Maldives.

**5) Blackbuck: The Indian Antelope, is found only on the Indian subcontinent** (native to Nepal and India). It is considered as the epitome of grassland. It is a diurnal antelope (active during the day).

- **It is State Animal of Punjab, Haryana, and Andhra Pradesh.**
- It is a **symbol of purity for Hinduism** as its skin and horns are regarded as sacred objects. For Buddhism, it is a symbol of good luck.
- **WPA 1972: Schedule 1, IUCN Status: Least Concern, CITES: Appendix III**
- Data has shown an **increasing trend in blackbuck population numbers**. The animals are seen in 3 clusters across India- Northern, Southern and Eastern regions.
- The horns of the blackbuck are ringed with one to four spiral turns and the female is usually hornless

### 12.1.23

**1) White Tufted Royal Butterfly:** Recently, a team of butterfly observers have found the **White Tufted Royal Butterfly, a rare butterfly species in Kannur, Kerala** which was earlier spotted in **Agasthyakoodam in 2017 and Shendurney Wildlife Sanctuary in 2018.**

- **The butterfly is protected under Schedule 2 of the Wildlife Protection Act, 1972.**

**2) Indian Skimmers:** Recently around **250 Indian Skimmers were sighted in Coringa Wildlife Sanctuary** during the Asian Waterbird Census-2023.

- It is found in the **coastal estuaries of western and eastern India.**
- **Also called Indian scissors bill, they are more widespread in winter** About 20% of

the total population of fewer than 2,500 birds nest along river Chambal. IUCN: Endangered

- **Asian Waterbird Census-** This **citizen-science programme supports the conservation and management of wetlands and waterbirds worldwide.**
- The AWC is an integral part of the global waterbird monitoring programme, the International Waterbird Census (IWC), coordinated by Wetlands International.

**3) Curative Petition:** The concept of was first evolved by the **Supreme Court of India in Rupa Ashok Hurra vs. Ashok Hurra and another case (2002) on the question whether an aggrieved person is entitled to any relief against the final judgement/order of the Supreme Court**, even after the dismissal of a review petition.

- **It's objectives are twofolds- avoid miscarriage of justice and to prevent abuse of process.**
- It may be filed after a review plea against the final conviction is dismissed. It must be rare rather than regular.
- **A curative petition must be first circulated to a Bench of the three senior-most judges, and the judges who passed the concerned judgment, if available.** Only when a majority of the judges conclude that the matter needs hearing should it be listed before the same Bench.
- It is usually decided by judges in the chamber unless a specific request for an open-court hearing is allowed.

**4) NOTAM:** It is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means.

- **NOTAMs indicate the real-time and abnormal status of the National Airspace System (NAS)** impacting every user. NOTAMs concern the establishment, condition, or change of any facility, service, procedure or hazard in the NAS.
- NOTAMs have a **unique language using special contractions to make communication more efficient.** Without NOTAMs, aeroplanes are at risk of running



into flocks of birds or remaining unaware of slippery conditions on runways, for example.

- **NOTAMs are listed location-wise with pilots needing to check “25 nautical miles to either side of your full route of flight” for relevant NOTAMs.**

**5) Very Short-Range Air Defence System or VSHORAD:** Meant to kill low altitude aerial threats at short ranges, **VSHORADS is a man portable Air Defence System (MANPAD).**

- It is **designed and developed indigenously by DRDO**
- The missile is propelled by a dual thrust solid motor—incorporates many novel technologies including miniaturised Reaction Control System (RCS) and integrated avionics, which were successfully proven during the tests conducted last year.

### 13.1.23

**1) Holocene Epoch:** It is the **current period of geologic time.**

- The Holocene Epoch began 12,000 to 11,500 years ago at the close of the Paleolithic Ice Age and continues through today.
- The **Holocene begins at the end of the last major ice age and marks a "warm period" between ice ages.**
- The Holocene is characterized with variable climate changes, from both natural and anthropogenic (human) causes.
- Another term that is sometimes used is the Anthropocene Epoch, because its primary characteristic is the global changes caused by human activity.

**2) Magh Bihu:** Cultural event of Assam celebrating the changing seasons.

- The festival of Bihu has three forms: **Bohag Bihu, Kati Bihu and Magh Bihu.** Each of these falls in the agriculture calendar.
- **This day is considered auspicious in the Hindu lunar year as well and is known as the Makar Sankranti, i.e., the day when the sun begins its northward journey or Uttarayan and transitions into the Hindu zodiac sign of Makara.**
- On this day the **Sun God is worshipped in various parts of India** in the form of different

festivals such as **Pongal (Tamil Nadu), Maghi (Punjab) and Uttarayan (Gujarat).**

**3) Central Consumer Protection Authority (CCPA):** It is a **regulatory body established under the Consumer Protection Act, 2019.** Nodal Ministry: The Ministry of Consumer Affairs.

- It will have a **Chief Commissioner as head**, and only two other commissioners as members one of whom will deal with matters relating to goods while the other will look into cases relating to services.
- The CCPA will have an **Investigation Wing that will be headed by a Director General**
- District Collectors too, will have the power to investigate complaints of violations of consumer rights, unfair trade practices, and false or misleading advertisements.

**4) Digital India Awards:** DIA aims to **encourage and honour innovative digital solutions and initiatives by various government entities and startups** (included in 2022 awards)

- **Nodal Agency:** Ministry for Electronics and Information Technology. Implementation Agency: National Portal of India

**5) National Mineral Exploration Trust (NMET):** NMET is a Trust set up as a **non-profit body by the Central Government for the purposes of regional and detailed exploration of minerals** using the funds accrued to it and in such manner as prescribed by the Central Government.

- The Mines and Minerals (Development & Regulation) Amendment Act, 2015, (MMRDA) mandated the setting up of the NMET. NMET has a two-tier structure.
- **The apex body/Governing Body, chaired by Minister of Mines.** It has control of the Trust.
- The Executive Committee, chaired by the Secretary, Ministry of Mines, administers and manages its activities.
- **Funding:** To implement mandated activities an NMET Fund has been established. The NMET Fund receives money from holders of mining lease or a prospecting license-cum-mining lease, an amount equivalent to two percent of royalty paid in terms of the Second Schedule of the MMDR Act.



#### 14.1.23

**1) Green steel:** It is the **manufacturing of steel using renewable or low-carbon energy sources** such as hydrogen, coal gasification, or electricity instead of the traditional carbon-intensive manufacturing route of coal-fired plants.

- **To move towards 'Green Steel'**, the Petroleum and Natural Gas Ministry launched Pradhan Mantri Urja Ganga Project in Eastern India in 2019 to provide gas to all steel plants located in the area.
- At present, the country's iron and steel sector is financially weak. However, Green Steel manufacturing is an expensive process involving high cost.

**2) Neelakurinji:** It is a shrub that grows in the shola forests of the Western Ghats in South India.

- **The plant is named after the famous Kunthi River which flows through Kerala's Silent Valley National Park**, where the plant occurs abundantly. It is found at an altitude of 1,300-2,400 metres. This flower blooms once in 12 year as the pollination of flowers needs a longer period. It is mainly found in the states of Kerala, Tamil Nadu, and Karnataka.
- **It is under Schedule III of the Wildlife (Protection) Act, 1972**

**3) Galactic halo:** It is a nearly spherical volume of thinly scattered stars, globular clusters of stars, and tenuous gas observed surrounding spiral galaxies, including the Milky Way.

- **Galactic halo is dominated by invisible dark matter**, whose presence is only measurable through the gravity that it exerts.
- Only about 1% of a galaxy's stellar mass resides in its halo, and due to this low luminosity, the observation of halos in other galaxies is extremely difficult.
- **Stellar halo:** It is the visible portion of a galactic halo.
- It is composed of globular clusters and field stars which have high space velocities that can take them far out of the galactic disk. They may hold some of the best preserved fossils of the formation history of galaxies.

**4) Gangasagar Mela:** It is known as the world's second largest human congregation after Kumbh.

- It happens every year during **Makar Sankranti**. The mela is held at Sagar Island.
- It has been mentioned in **Indian epics such as the Ramayana and Mahabharata**, putting its existence as early as 400 BCE.
- **The pilgrims after taking a dip in Ganga also visit the temple of Kapil Muni.**
- **Kapila or Maharishi Kapila is a Vedic sage (rishi)** traditionally considered to be the **original proponent of the Samkhya system of Indian philosophy**, around 6<sup>th</sup> or 7<sup>th</sup> century C.E.
- Kapila is described within the Puranas as an incarnation of Vishnu.
- He is known for teaching a process of liberation known as bhakti yoga.

**5) MAARG PLATFORM:** It is the **National Mentorship Platform by Start-up India to help and guide new start-ups** to grow and flourish.

- **It is a one-stop platform** to facilitate mentorship for start-ups across diverse sectors, functions, stages, geographies, and backgrounds.
- **Nodal Ministry:** Launched by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.

#### 16.1.23

**1) Nicobar long-tailed Macaque:** It is a subspecies of the larger family of long-tailed macaques found across South-East Asia. It is distinct from its cousins in appearance, behaviour and geographical location. **The macaque is found in only three of the Nicobar islands—Katchal, Little Nicobar, and Great Nicobar**—with GNI being home to the largest population. IUCN: Vulnerable

**2) Duty drawback scheme (DDS):** It provides exporters with a refund of customs duty paid on unused imported goods, or goods that will be treated, processed or incorporated into other goods for export. **Claims must be lodged within 4 years from the date the goods were exported.** Duty drawback can



be only claimed for compensating unrebated taxes and duties, not for GST.

**3) Karen ethnic people:** They are a large and dispersed ethnic group of Southeast Asia.

- They trace their origins to the **Gobi Desert, Mongolia, or Tibet.**
- **Karen settled in Burma/Myanmar's southern Irrawaddy river Delta area** and in the hills along the Salween River in eastern Myanmar and in neighbouring Thailand.
- The **vast majority of Karen are Buddhists** (over two thirds), although large numbers converted to Christianity during British rule and constitute about 30 per cent among the Karen.
- In Karen society women are often considered inferior or subservient to men and **both women and men are encouraged to adhere to strict gender roles.**
- The languages of the Karen are generally considered to be of the **Tibeto-Burman family** and the main dialects are Pwo and Sgaw.

**4) Votive Stupa:** Archeological Survey of India (ASI) has recently discovered **two 1200-year-old miniature votive stupas during landscaping activities near Sarai Tila mound** on the premises of 'Nalanda Mahavihara', a world heritage site in Nalanda district.

- These are forms of the stupas, with their distinctive domelike drum, originating in eight cylindrical structures in which the Buddha's relics were placed after his death.
- The stupa shape has become associated with the Buddhist goal of release from the cycles of suffering and rebirth.
- In addition to the drum, this stupa has a tiered base and is crowned with a series of stylized umbrellas that symbolize royalty and divine status.

**5) Tharu people:** They are an ethnic group indigenous to the Terai region of the Himalayan foothills, located in southern Nepal and in the state of Uttar Pradesh in India.

- They speak **various dialects of Tharu**, a language of the Indo-Aryan subgroup of the

Indo-Iranian group of the Indo-European family, and they are largely Indian in culture.

- **Most Tharu practice agriculture, raise cattle, hunt, fish, and collect forest products.**
- Although they are Hindu, the Tharu use their own traditional ritual specialists in addition to the Hindu Brahman priests.
- Forest officials of the Katarniaghat division say a plan is in the works for the financial inclusion of the Tharu groups that live near the Katarniaghat Wildlife Sanctuary (KWS) and are much affected by human-wildlife conflicts.

### 17.1.23

**1) SHUKRAYAAN-1:** Also called the **Venus Mission**, it will be an orbiter mission.

- Its scientific payloads currently include a high-resolution synthetic aperture radar and a ground-penetrating radar.
- It will investigate surface process and shallow subsurface stratigraphy. Until now, no prior observation of the sub-surface of Venus has been done.
- **The mission is expected to study Venus's geological and volcanic activity**, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.
- **Optimal launch windows from Earth to Venus occur once every 19 months.**

**2) Black Box/Flight Recorder:** It is an instrument that records the performance and condition of an aircraft in flight. Governmental regulatory agencies require these devices on commercial aircraft to make possible the analysis of crashes or other unusual occurrences.

- **A black box refers to two pieces of equipment together – the Cockpit Voice Recorder (CVR) and the Flight Data Recorder (FDR).**
- The FDR records many variables, not only basic aircraft conditions such as **airspeed, altitude, heading, vertical acceleration**, and pitch but also hundreds of individual
- The CVR records **verbal communication** between crew members within the aircraft's



cockpit as well as voice transmissions by radio.

- In spite of the popular name black box, flight recorders are painted a highly visible vermilion color known as "international orange".

**3) Mayan Civilization:** They are probably the best-known of the classical civilizations of Mesoamerica.

- Originating in the Yucatán peninsula around 2600 B.C., they rose to prominence around A.D. 250 in present-day southern Mexico, Guatemala.
- Maya developed **astronomy, calendrical systems and hieroglyphic writing**.
- They had elaborate and highly decorated ceremonial architecture, including temple-pyramids, palaces and observatories, all built without metal tools.
- **They were also skilled farmers, weavers and potters.** The Maya remain in contemporary Mesoamerican societies, and maintain a distinctive set of traditions and beliefs, combined with more recent practices such as the almost total adoption of Roman Catholicism.
- The Maya made paper from the inner bark of wild fig trees- the books are called codices.

**4) Default bail:** Also known as **statutory bail**, this is a right to bail that accrues when the police fail to complete investigation within a specified period in respect of a person in judicial custody.

- **This is enshrined in Section 167(2) of the Code of Criminal Procedure (CrPC)** where it is not possible for the police to complete an investigation in 24 hours, the police produce the suspect in court and seek orders for either police or judicial custody.

**5) LHS 475 b:** It is an **exoplanet located just 41 light-years away**.

- **The planet orbits very close to a red dwarf star** and completes a full orbit in just two days.
- It's roughly the same size as Earth.
- Exoplanets are planets that orbit other stars and are beyond our solar system. According

to NASA, to date, more than 5,000 exoplanets have been discovered.

### 18.1.23

**1) AK-203:** These rifles are manufactured in a joint venture between India and Russia.

- These are **high-quality, convenient and modern small arms**.
- This model combines excellent ergonomics, adaptability to different shooters and high-performance characteristics. **It is considered to be the latest and most advanced version of the AK-47 rifle.** These rifles never get jammed as these belong to AK series.
- The joint venture plans for 100% localisation of the production of AK-203 rifles in India.

**2) Rule 14 in the new Electricity (Amendment) Rules, 2022:** It permits distribution companies (Discoms) to automatically recover from consumers, on a monthly basis, the expenses arising out of variations in fuel price and power purchase costs.

- It requires **the State electricity regulatory commission to specify a price adjustment formula** for automatically passing on the costs through the consumer tariff on a monthly basis.
- Fuel and power purchase adjustment surcharges shall be calculated and billed to consumers, automatically, without going through the regulatory approval process, on a monthly basis, according to the formula, prescribed by the respective State Commission.

**3) Manjuvirattu:** Literally meaning '**bull chasing**', it is a **type of Jallikattu practiced in Tamil Nadu**. It involves an array of bulls being released one after another from an enclosure with an opening, with attempts by one person to cling to the hump of the bull. To win the prize, the participant is expected to hold the running bull for a predetermined time and distance to win the prize.

- **Multiple players are involved.** (jallikattu has a single player)
- In Vaadi Jallikattu the bull will be released from a closed space (vadi vasal), while in



**Manjuvirattu, the bull will be tied to a small post or to a hook or to a big stone.** There are no other physical restrictions for the bull and hence it can move freely anywhere

**4) Jamnalal Bajaj:** He was an **Indian industrialist, social reformer, philanthropist, and Indian independence fighter.** He was also a close associate of Mahatma Gandhi. He was the **President of Gandhi Seva Sangha**, a group of workers who dedicated their time to constructive work.

- **He gave up the title of Rai Bahadur** conferred on him by the British government and joined the non-co-operation movement in 1921.
- In 1933 he was elected a **member of the Congress Working Committee (CWC).**
- He involved himself in constructive programs of Gandhi- like Dalit, khadi, Goseva (preserving cattle wealth). So much so that Mahatma Gandhi adopted him as his 5<sup>th</sup> son.

**5) Office of the COP President of climate change conference:** The announcement from Abu Dhabi that **Dr. Sultan al Jaber, CEO of the Abu Dhabi National Oil Company (ADNOC)** has been designated president of COP28 has drawn a barrage of criticism from well-intentioned climate change activists

- The government of the host country usually names one of its ministers as the president.
- His role is to guide negotiations and they don't usually have any special power. The president will however play a key role in prioritising the agenda of discussions and help develop consensus.
- They also **engage in preconference diplomacy**, travelling all over the world to discuss priorities.
- Decisions are however taken by consensus and even if a single member disagrees, the COP has to accommodate its views.

### 19.1.23

**1) Spot Bellied Eagle Owl:** It was recently spotted in **Seshachalam forest of Andhra Pradesh for the first time.** It is also known as

the forest eagle-owl. They are large, powerful and bold predatory birds.

- It is a forest-inhabiting species found in India, Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar, China, Thailand, Laos, Cambodia and Vietnam in altitudes from 300 to 3000m
- **IUCN Status:** Least Concern, Wildlife (Protection) Act, 1972: Schedule IV, CITES :Appendix II.

**2) Greenback:** It refers to the **first paper money issued by the United States government in the 19th century.** It was legal tender by law backed by the United States government.

- The **issuance was primarily intended to cover up the expenses of the American Civil War.**
- Since the backside of this paper money is inked in green color, it got the name greenback.
- **Greenback trading:** Traders in the foreign exchange market use the term greenback to refer to the United States Dollar.

**3) Annual Status of Education Report (ASER):** It is a **citizen-led household survey that provides estimates of the enrolment status of children aged 3-16** and the basic reading and arithmetic levels of children aged 5-16 at the national, state and district level.

- ASER is published by **NGO Pratham**, and the survey has been conducted every year since 2005. The survey reaches children in the age group of 3-16 in almost all rural districts of India. It uses household rather than school-based sampling.
- **Enrollment has gone from 97.2 per cent in 2018 to 98.4 per cent in 2022.**
- As many as 72.9 per cent of the surveyed students go to government schools.
- **In only three states**, the number of girls not going to school is above 10% – **Madhya Pradesh (17%), Uttar Pradesh (15%), and Chhattisgarh (11.2%).**

**4) Halteria:** Microscopic ciliates (a single-celled organism with minuscule hairs) that populate freshwater worldwide — can thrive wholly on a virus-only diet or 'virovory'.



- **Plankton of the genus Halteria can each consume 10,000 to a million virus particles a day**, increase their population using the metabolised energy, and provide more food for the zooplanktons that consume the Halteria. They are found in freshwater bodies.
- **They are heterotrophs meaning they can't produce their own food.** Instead, they are well-known bacterivores — they consume bacteria to power themselves.
- They infect and kill both bacteria and plankton, releasing organic matter that dissolves in the water.

**5) Non-NATO Ally:** A US Congressman has recently moved a Bill in the **House of Representatives to revoke Pakistan's designation as a Major Non-NATO Ally.**

- Major Non-NATO Ally (MNNA) status is a designation under US law that provides foreign partners with certain benefits in the areas of defense trade and security cooperation.
- **While MNNA status provides military and economic privileges**, it does not entail any security commitments to the designated country.
- **Benefits of Major non-NATO ally status:** Entry into cooperative research with the Department of Defense (DoD), Participation in certain counter-terrorism exercises, Delivery of military surplus on a priority basis, Loans of equipment and materials for development projects, Permission to use U.S. financing to purchase certain defense equipment etc.

### 20.1.23

**1) Hybrid immunity:** It is gained from a previous infection plus vaccines – either the primary doses or both primary and booster doses. **A study by Lancet said that a hybrid immunity offers a “higher magnitude and durability” of protection** as compared to infection alone, emphasising the need for vaccination.

- **Getting a natural infection** – best after vaccination so that the risk of death is lower – provides better protection than vaccines alone because it prepares the body against

the entire virus, rather than say just the spike protein.

**2) National Export Co-operative Society:** registered under the Multi-State Cooperative Societies (MSCS) Act, 2002, it will act as an umbrella organisation for carrying out and promoting exports.

- **It will help cooperatives in getting benefits of various export-related schemes** and policies of different ministries in a focussed manner through the 'Whole of Government Approach'.
- **Dividends will be shared with the manufacturer** instantly and without any brokerage fee.
- The society will have an authorised share capital of ₹2,000 crore with the area of operation all over the country. It will have its registered office in Delhi.
- **Leading cooperatives like IFFCO, KRIBHCO, NAFED, Amul and National Cooperative Development Corporation (NCDC)** will be the promoters of the Society. They will contribute ₹100 crore each.

**3) Chamundi Hills:** located in the city of Mysore, Karnataka.

- **The famous Sri Chamundeshwari Temple is situated on top of Chamundi hills.**
- In the earlier days, the Hill was identified as 'Mahabaladri' in honour of God Shiva who resides in the 'Mahabaleswara Temple'. This is the oldest temple on the hills.
- These hills have been mentioned in the ancient Hindu scriptures such as 'Skanda Purana'.
- **Sri Chamundeshwari Temple:** It is dedicated to the **Goddess Chamundeshwari (Chamundi), deity of the Mysore Royal Family.** It is built in the Dravidian style of temple architecture.
- The temple has a **quadrangular structure.**
- It has an impressive seven-tier tower called 'gopuram' or 'gopura' and an equally imposing entrance which is known as 'dwara'.

**4) Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD) Scheme:**



- **Ministry of Tourism launched the PRASHAD scheme in the year 2014-2015 as a Central Sector Scheme for developing and identifying pilgrimage sites across India for enriching the religious tourism experience.**
- For improved sustainability of the project, it also seeks to involve Public Private Partnership (PPP) and Corporate Social Responsibility (CSR) as well.
- The projects identified under this scheme shall be implemented through the identified agencies by the respective State/ Union Territory Government.

**5) Indian Star Tortoise:** A recent study on the Indian star tortoise distributed across South Asia has revealed that the genetic diversity of the species as well as its habitat has suffered major losses because of rampant illegal trade.

- It is found in **the central and Southern parts of India, in West Pakistan and Sri Lanka.**
- **IUCN Status:** Vulnerable, CITES: Appendix I, Wild Life Protection Act 1972: Schedule IV

### 21.1.23

**1) Additional Tier-1 (AT1) bonds:** These bonds are **unsecured bonds that have perpetual tenors**, are issued by banks and have no maturity date.

- **They have a call option, which can be used by the banks** to buy these bonds back from investors. These bonds are typically used by banks to bolster their core or tier-1 capital.
- These AT1 bonds are subordinate to all other debt and only senior to common equity.
- These bonds were introduced by the Basel accord after the global financial crisis to protect depositors.

**2) ASMI Machine Pistol:** ASMI (meaning pride/ self-respect) is India's first indigenous 9mm machine pistol. Developed jointly by **DRDO** (Defence Research and Development Organisation) and Indian Army. It weighs under 2kg and can fire at a range of 100 metres.

- **The 3D printing process was used to design and prototype the pistol's various parts, including its trigger components.**

- **Machine pistol:** It is a relatively small, self-loading automatic handgun with a high rate of fire and can fire in intermittent or sustained bursts.

**3) Egypt: Egyptian President Abdel-Fattah al-Sisi is India's Chief Guest for Republic Day 2023 celebrations.** It is a transcontinental country situated in northeastern Africa and the Sinai Peninsula in Western Asia (Middle East). Capital: Cairo

- The country borders the Mediterranean Sea to the north and the Gulf of Suez and the Red Sea to the east.
- The famous **River Nile is the only river that flows in Egypt throughout the year.** Around 98% of the country's population resides in the Nile River Valley.
- **Exercise Cyclone-I:** It is the first ever joint exercise between the special forces of the Indian Army and the Egyptian Army.

**4) Kanha Tiger Reserve:** It stretches over an area of 940 square km in the two districts - **Mandla and Balaghat** - of Madhya Pradesh. **It is the largest National Park in Central India.**

- **The State animal of Madhya Pradesh - Hard Ground Barasingha** is found exclusively in Kanha Tiger Reserve. It is best known for its evergreen Sal forests (*Shorea Robusta*).
- **It is the first tiger reserve in India to officially introduce a mascot, "Bhoorsingh the Barasingha".**

**5) Hakku Patra:** The word 'Hakku' means "the right", and 'Patra' means a "paper" or "document".

- It is a **legal document that states an individual's rightful inheritance of a property.**
- It is issued to the nation's underprivileged section, including scheduled castes, scheduled tribes, urban slum dwellers, handicapped, and other disadvantaged populations.
- In most cases, the land on which the Hakku Patra is issued is government-owned with a specific set of conditions attached.
- **It is a part of the Ambedkar Rural Housing Scheme of Karnataka.**



- Under this, the government offers free registration of Hakku Patra land in the beneficiary's name. Any house built on the Hakku Patra land should be used as the beneficiary's house and not for rental purposes.

### 23.1.23

**1) Planet Parade:** This is the phenomenon wherein the planets **Mercury, Venus, Mars, Jupiter, and Saturn** were visible to the naked eye from Earth.

- **This planetary meet-up, also known as a conjunction,** makes the two planets appear close together or even touch in the Earth's night sky.
- Despite being millions of kilometres apart, the planets seem to occupy the same space in the night sky because of their alignment.

**2) 13th Amendment to the Constitution of Sri Lanka:** It is an **outcome of the India-Sri Lanka Peace Accord of July 1987, to resolve Sri Lanka's ethnic conflict** that had aggravated into a full-fledged civil war, between the armed forces and the Liberation Tigers of Tamil Eelam.

- **The 13th Amendment, led to the creation of Provincial Councils.**
- It assured a power sharing arrangement to enable all nine provinces in the country, including Sinhala majority areas, to self-govern.
- **Subjects such as education, health, agriculture, housing, land and police are devolved to the provincial administrations.**
- It made Tamil one of Sri Lanka's official languages and English, a link language.
- The amendment has never been fully implemented because of the overriding powers given to the President.

**3) Gold Exchange Traded Funds (Gold ETFs):** They are **commodity-based exchange-traded funds with an underlying asset as gold.** They are passive investment instruments that are based on gold prices and invest in gold bullion.

- **Gold ETFs are units representing physical gold which may be in paper or dematerialised form.**

- Gold ETFs combine the flexibility of stock investment and the simplicity of gold investments.
- They are **listed and traded on the National Stock Exchange of India (NSE) and Bombay Stock Exchange Ltd. (BSE)** like a stock of any company.
- It can be bought and sold continuously at market prices.
- There is a **complete transparency** on the holdings of a Gold ETF due to its direct gold pricing.
- ETFs have much lower expenses as compared to physical gold investments.

**4) SAFAR:** It is an **air quality monitoring system, introduced by the Ministry of Earth Sciences (MoES)** to provide location specific information on air quality in near real time and its forecast upto 3 days in India. It is developed by Indian Institute of Tropical Meteorology (IITM), Pune.

- **Objective:** To increase awareness among the general public regarding the air quality changes in their city well in advance so that appropriate mitigation measures and systematic action can be taken up for betterment of air quality and related health issues.
- AQI is calculated based on the average concentration of a particular pollutant measured over a standard time interval (24 hours for most pollutants, 8 hours for carbon monoxide and ozone).

**5) Haiderpur wetland:** It is a human-made wetland that was formed in 1984 by the construction of the Madhya Ganga Barrage on a floodplain of the River Ganga in Uttar Pradesh.

- It is located within the boundaries of Hastinapur Wildlife Sanctuary.
- It has been recognised as the 47th Ramsar site of India in 2021.

### 24.1.23

**1) Co-location trading:** The National Stock Exchange 2009 started to offer co-location services to members of the exchange.

- It allows a member to set up his server in a specifically earmarked data centre within



the NSE's exchange premises for a certain price.

- The relative proximity allows members wishing to gain access to the entirety of buy and sell orders sent because of the reduced time taken for order execution.
- Is it Illegal? : Stock exchanges across the world allow the practice to flourish as a paid service. The SEBI allowed exchanges to offer co-location in 2008.

**2) Param Vir Chakra:** It is **India's highest military decoration awarded for the highest degree of valour or self-sacrifice in the presence of the enemy.**

- The Param Vir Chakra was introduced on **January 26, 1950, on the first Republic Day with retrospective effect from 15 August 1947.**
- Literally, Param Vir Chakra means 'Wheel (or Cross) of the Ultimate Brave'.
- It can be awarded posthumously.
- **Till now, only 21 people had been given the Param Vir Chakra award of which 14 are posthumous.**
- India's Gallantry Awards in the order of precedence: Param Vir Chakra, Ashoka Chakra, Mahavir Chakra, Kirti Chakra, Vir Chakra, Shaurya Chakra.

**3) Yellow Band Disease:** named for the colour it turns corals before destroying them—was first spotted decades ago and has caused widespread damage to reefs in the

- **There is no known cure for this disease and unlike coral,** bleaching corals will not be restored once they get infected by this disease.
- Scientists believe overfishing, pollution and rising water temperatures because of climate change may be making the reefs more vulnerable to yellow-band disease.

**4) INS Vagir:** it is **the fifth submarine of the first batch of six Kalvari-class submarines for the Indian Navy.** It is a diesel-electric attack submarine based on the Scorpène class, designed by French naval defence and manufactured by Mazagon Dock Limited.

- The submarine inherits its name from INS Vagir (S41) which served in the Navy from

1973–2001, and was named after a species of sandfish.

- They need atmospheric oxygen to run the diesel generator which in turn charges the batteries.

**5) Immune imprinting:** it is the human body replicating its immune system. During immune imprinting, rather than producing new and more powerful antibodies (cells that fight viruses), the immune system creates "cross-reactive" antibodies which are not effective.

- Scientists say that **immune imprinting is to become a hinder to the performance of Booster doses of COVID.**
- When we take a vaccine for the first time, our body produces strong antibodies, let's say X. Now say a variant GGG has entered. Now our immune system should create a new and stronger antibody to kill the variant. But due to immune imprinting, the human body uses the memory cells of X to form new antibodies rather than creating new antibodies. These antibodies formed from X, that is, from the memory are called cross-reactive antibodies.

#### 25.1.23

**1) Paris Club:** It is an **informal group of creditor nations whose objective is to find workable solutions to payment problems faced by debtor nations.** It has 22 permanent members, including most of the western European and Scandinavian nations, the United States, the United Kingdom, and Japan. The group is organized around the principles that each debtor nation be treated case by case, with consensus, conditionality, solidarity, and comparability of treatment.

- The Paris Club stresses the informal nature of its existence. **As an informal group, it has no official statutes and no formal inception date,** although its first meeting with a debtor nation was in 1956, with Argentina.

**2) Norovirus:** also called "**winter vomiting bug**", it is a **group of viruses that leads to gastrointestinal illness.** It causes inflammation of the lining of the stomach



and intestines, in addition to severe vomiting and diarrhoea.

- **Norovirus is resistant to many disinfectants and can heat up to 60°C.** Therefore, merely steaming food or chlorinating water does not kill the virus. The most common infective agent is contaminated water or food. The virus spreads via faeces to the mouth. It affects particularly children, the elderly, and people suffering from other illnesses.

**3) Olive Ridley turtle:** They are the smallest and most abundant of all sea turtles found in the world.

- **They are best known for their unique mass nesting called Arribada,** where thousands of females come together on the same beach to lay eggs. They are carnivores
- They are mainly found in the warm waters of the **Pacific, Atlantic and Indian oceans.**
- Odisha's Gahirmatha Marine Sanctuary is known as the world's largest rookery.
- **IUCN Red List: Vulnerable, Wildlife Protection Act, 1972: Schedule 1, CITES Appendix I**
- **Recently, Hundreds of Olive Ridley turtles were found dead in their breeding grounds in the Godavari region** due to effluents being released from the aqua ponds along the coastline and the discharges from the pipelines of the onshore oil exploration facilities.

**4) Tethered Drones:** it is an **unmanned aerial vehicle tethered to the ground consisting of a base station on the ground and the drone, which is connected to the station through the tether (cable).**

- Tethered drones dramatically reduce technical and human error crashes in flight.
- It also does not require GPS navigation. Many tethered drones have longer flight times compared to free-flying, battery-operated drones. Due to the restricted movement of a tethered drone, the operator does not need piloting skills and can mainly focus on their tasks.

**5) Charaideo Moidams:** Central government has decided to put forth the name of Assam's Charaideo moidams burial

sites in addition to UNESCO World Heritage Sites list for 2023-24.

- If selected it will be the only cultural heritage site in the North East to get the coveted status
- **It is also known as the 'Pyramids of Assam' and was the original capital of the Ahom Kings.** It contains sacred burial grounds of Ahom kings and queens and is also the place of the ancestral Gods of the Ahoms.
- "Che" means city or town, "Rai" means "to shine" and "Doi" means hill. In short, Charaideo means, "a shining town situated on a hilltop." A moidam is a tumulus – a mound of earth raised over a grave Built by: Chaolung Sukhapa (founder of the Ahom dynasty in 1253 CE)
- It comprises a massive underground vault with one or more chambers having domical superstructure and covered by a heap of earthen mounds and externally it appears a hemispherical mound.

#### 26.1.23

**1) BharOS Software:** It is an **indigenous mobile operating system (OS), like Android or iOS developed by an IIT Madras-incubated company.** It is focused on privacy and security.

- **It would support Native Over The Air (NOTA) updates as well as No Default Apps (NDA).**
- **NOTA updates,** meaning that security updates and bug fixes will be automatically installed rather than users having to check for updates and implementing them on their own.
- **No Default Apps (NDA) setting,** means that users do not have to keep or use pre-installed apps in this mobile operating system.
- It will use a system known as **Private App Store Services (PASS), which will examine and curate the apps that are safe for the users.**

**2) Doomsday clock:** It is a **symbolic timepiece showing how close the world is to ending.**

- The hands of the clock are moved closer to or further away from midnight based on the



scientists' reading of existential threats at a particular time.

- Bulletin of the Atomic Scientists (non-profit organisation) updates the time annually based on information regarding catastrophic risks to the planet and humanity
- **At 90 seconds to midnight, the "Doomsday Clock" is now the closest it has ever been to midnight.** It is the first time it has moved since it was set at 100 seconds to midnight in 2020.
- Its setting reflects the revived fears of a nuclear war due to Russia's invasion of Ukraine.

**3) Light Tank Zorawar:** It is an **indigenously designed and developed Light Tank by DRDO in collaboration with Larsen & Toubro Limited.**

- It is designed to operate in varying terrain from high altitude areas to island territories.
- It will be highly transportable for rapid deployment to meet any operational situation.
- It will be equipped with all the modern technologies such as Artificial Intelligence, Drone Integration, a high degree of situational awareness, and amphibious operation capability.
- It will weigh less than 25 tonnes with a high power-to-weight ratio as well as superior firepower and protection.

**4) Trans Fat:** They are **unsaturated fatty acids that come from either natural or industrial sources.**

- Naturally-occurring trans-fat comes from ruminants (cows and sheep).
- **Industrially-produced trans-fat is formed in an industrial process that adds hydrogen to vegetable oil converting the liquid into a solid, resulting in "partially hydrogenated" oil (PHO).** Partially hydrogenated oils (PHO) are solid at room temperature and prolong the shelf life of products.
- World Health Organisation launched a REPLACE campaign in 2018 for global-level elimination of trans-fats in industrially produced edible oils by 2023.

**5) Eravikulam National Park:** Located in Idukki District, Kerala.

- **This is the land of "Neelakurinji",** the flower that blooms once in twelve years.
- The highest peak south of the Himalayas – The Anamudi is situated in this park.
- The major part of the park is covered with rolling grasslands, but several patches of shola forests are also found in the upper part of the valley.
- **Half the world population of the endangered Nilgiri Tahr lives here.**
- The Atlas moth, the largest of its kind in the world is seen in this Park.

### 27.1.23

**1) Etikoppaka Toys:** The government has conferred **Padma Shri in the art category to Etikoppaka Wooden Toy Craft maker.** Etikoppaka is a village (known as the toy village) on the banks of Varaha River in Andhra Pradesh which has obtained their GI tag for these toys.

- **The toys are made out of soft wood** (thus called Turned wood Lacquer craft) and are coloured with natural dyes derived from seeds, lacquer, bark, roots and leaves.
- While making the Etikoppaka toys, lac, a colourless resinous secretion of numerous insects, is used. The toys are also called as lacquer toys because of application of lacquer coating.

**2) States fall short of targets to improve Forest Cover, Quality:** According to the data accessed via the RTI, against the target of increasing tree cover by around 53,000 hectares (between 2015-16 and 2021-22) under the Green India Mission (GIM), only around 26,000 ha has been achieved.

- Similarly, forest quality improved in only 1.02 lakh ha against target of 1.6 lakh ha under the GIM, which is one of the eight Missions under NAPCC.
- **National Mission for a Green India:** It is one of the eight Missions under the NAPCC (launched in 2014 for a 10-year period), and which aims at protecting, restoring and enhancing India's forest cover and responding to Climate Change.
- The target under the Mission is 10 million ha (5 + 5) on forest and non-forest lands for



increasing the forest/tree cover and to improve the quality of existing forest.

### 3) National Investigation Agency (NIA):

Established under the National Investigation Agency Act 2008, it is the Central Counter Terrorism Law Enforcement Agency under Ministry of Home Affairs.

- **It is a central agency to investigate and prosecute offences:** affecting the sovereignty, security and integrity of India, security of State, friendly relations with foreign States, against atomic and nuclear facilities and smuggling in High-Quality Counterfeit Indian Currency.
- A State Government may request the Central Government to hand over the investigation of a case to the NIA, provided the case has been registered for the offences as contained in the schedule to the NIA Act. Central Government can also order NIA to take over investigation of any scheduled offense anywhere in the India.

**4) Electronic Supreme Court Reports (e-SCR) Portal:** The portal is the repository of the electronic version of Supreme Court Reports (SCR). It provides free access and an elastic search facility to about 34,000 of its judgments.

- The move has benefitted law students, young lawyers who cannot afford expensive books which record apex court judgments and even the public.
- Developed with the help of the National Informatics Centre (NIC), which uses elastic search techniques in the database of e-SCR

**5) Short Selling:** or shorting, is a **trading strategy based on the expectation that the price of the security will fall**. While fundamentally it is based on the “buy low, sell high” approach, the sequence of transactions is reversed in short selling — to sell high first and buy low later. Also, in short selling, the trader usually does not own the securities he sells, but merely borrows them. Short selling was banned for much of the first decade of the 21st century, but both retail and institutional investors had the option to go short in 2008. Even though Indian authorities lifted the restrictions on

short selling, naked shorting remains illegal. This occurs where the seller doesn't deliver shares within the settlement period.

### 28.1.23

**1) Ramcharitmanas of Tulsidas:** Tulsidas, wrote the Ramcharitmanas in the 16th century in the Awadhi dialect on the banks of the Ganga in Varanasi.

- He was a contemporary of Emperor Akbar and is thought to have corresponded with Abdurrahim Khan-e-Khanan, the son of Akbar's commander Bairam Khan.
- **The Ramcharitmanas is based on the Ramayana – sage Valmiki's great epic.** It is divided into seven chapters (Kand) that tell the story of Lord Ram from birth to his becoming King of Ayodhya.

**2) Kashmir's Pashmina shawls:** It is a **GI-certified wool that has its origin in the Kashmir region of India**. Due to the high quality of the wool used and the labour-intensive process required to make each individual piece, pashmina shawls are quite expensive.

- **The Changthangi goats (Capra Hircus), domesticated in Ladakh, are the source of the wool used to weave Pashmina Shawls.**
- The Changpa tribes of Ladakh who herd the Changthangi goats harvest the raw Pashm.
- **Shahtoosh:** It is the name given to the wool of the Tibetan chiru (Endangered in the IUCN Red List) antelopes.

**3) Black Vulture:** They are most abundant at low elevations. They breed in dense woodlands but usually forage in open habitats. **It is mainly found in the north eastern United States to Peru, Central Chile and Uruguay South America.** They typically avoid crossing large bodies of water and do not cover long distances. IUCN Red List: Least Concern

**4) Emergency Credit Line Guarantee Scheme:** ECLGS was rolled out in 2020 as part of Aatmanirbhar package in response to the Covid-19 crisis to support small businesses struggling to meet their operational liabilities due to the imposition of a nationwide lockdown.



- **A 100% guarantee is provided by the National Credit Guarantee Trustee Company (NCGTC) to Member Lending Institutions (MLIs)** - banks, financial institutions and Non-Banking Financial Companies (NBFCs). There is no guarantee fee to be charged by MLIs or NCGTC.
- **ECLGS 1.0: for MSME units, Business Enterprises, Mudra Borrowers, and individuals**
- ECLGS 2.0: for borrowers in the 26 sectors named by the Kamath Committee
- ECLGS 3.0: for hospitality and related sectors (hotels and restaurants, marriage halls, canteens, etc.), travel and tourism, civil aviation etc.
- ECLGS 4.0: for qualified hospitals, nursing homes, clinics, medical colleges

**5) World Economic Situation and Prospectus 2023 report:** UNDESA (in partnership with UNCTAD and five regional UN commission) have produced this report.

- World output growth will decelerate to 1.9% in 2023 (from 3% in 2022)
- On South Asia: The economic outlook has "significantly deteriorated due to high food and energy prices, monetary tightening and fiscal vulnerabilities" with average GDP growth projected to moderate to 4.8% in 2023 from 5.6% in 2022
- On India: Economic growth in India is projected to moderate in 2023, with higher interest rates weighing on investment and slower global growth weakening exports
- It recommends Reprioritization of public expenditures esp. in education, health and digital infrastructure; more social protection,

### 30.1.23

**1) Beating Retreat:** The Beating Retreat Ceremony was held at the end of Republic Day celebrations.

- **It is a military ceremony that was performed for the first time in India in the 1950s.**
- The ceremony consists of musical performances by the bands.
- According to the Union Ministry of Culture website "It traces its origin to the early 1950s

when Major Roberts of the Indian Army indigenously developed this unique ceremony of display by the massed bands". the idea was inspired by a centuries-old military tradition when the troops ceased fighting, sheathed their arms and withdrew from the battlefield to return to their camps at sunset at the sound of the Retreat.

**2) Dhole: or Asiatic Wild Dog is found in three clusters** across India namely the Western and Eastern Ghats, the central Indian landscape and North East India. The Western and Eastern Ghats are stronghold regions for dholes.

- **IUCN Red List:** Endangered, The Wildlife Protection Act 1972: Schedule II, CITES: Appendix II
- Recently a partial albino dhole has been photo-documented in Cauvery Wildlife Sanctuary.
- Albinism is the result of cells that can't produce melanin, the pigment needed to colour skin, scales, eyes and hair. This genetic condition gets passed to offspring when both parents carry the recessive gene. When albinism is present, the animal can appear white or pink.
- The production of melanin occurs within melanocytes, specialized cells that are present but not fully functional in albino mammals.

**3) Asian golden cat:** It is a medium sized cat with relatively long legs. Called the "fire cat" in Thailand and Burma, and the "rock cat" in parts of China.

- Found in Southeast Asia, from Nepal and Tibet to Southern China, Sumatra and India.
- It prefers forest habitats that are interspersed with rocky areas, being found in deciduous, tropical and subtropical evergreen rainforests.
- **IUCN: "Near threatened", Wildlife (Protection) Act of India, 1972: Schedule 1**
- **Recently found in Buxa Tiger Reserve.**

**4) Buxa Tiger Reserve (BTR):** Located in Alipurduar sub-division of Jalpaiguri district of West Bengal.

- It is contiguous to Phibsoo Wildlife Sanctuary in Bhutan in the north while

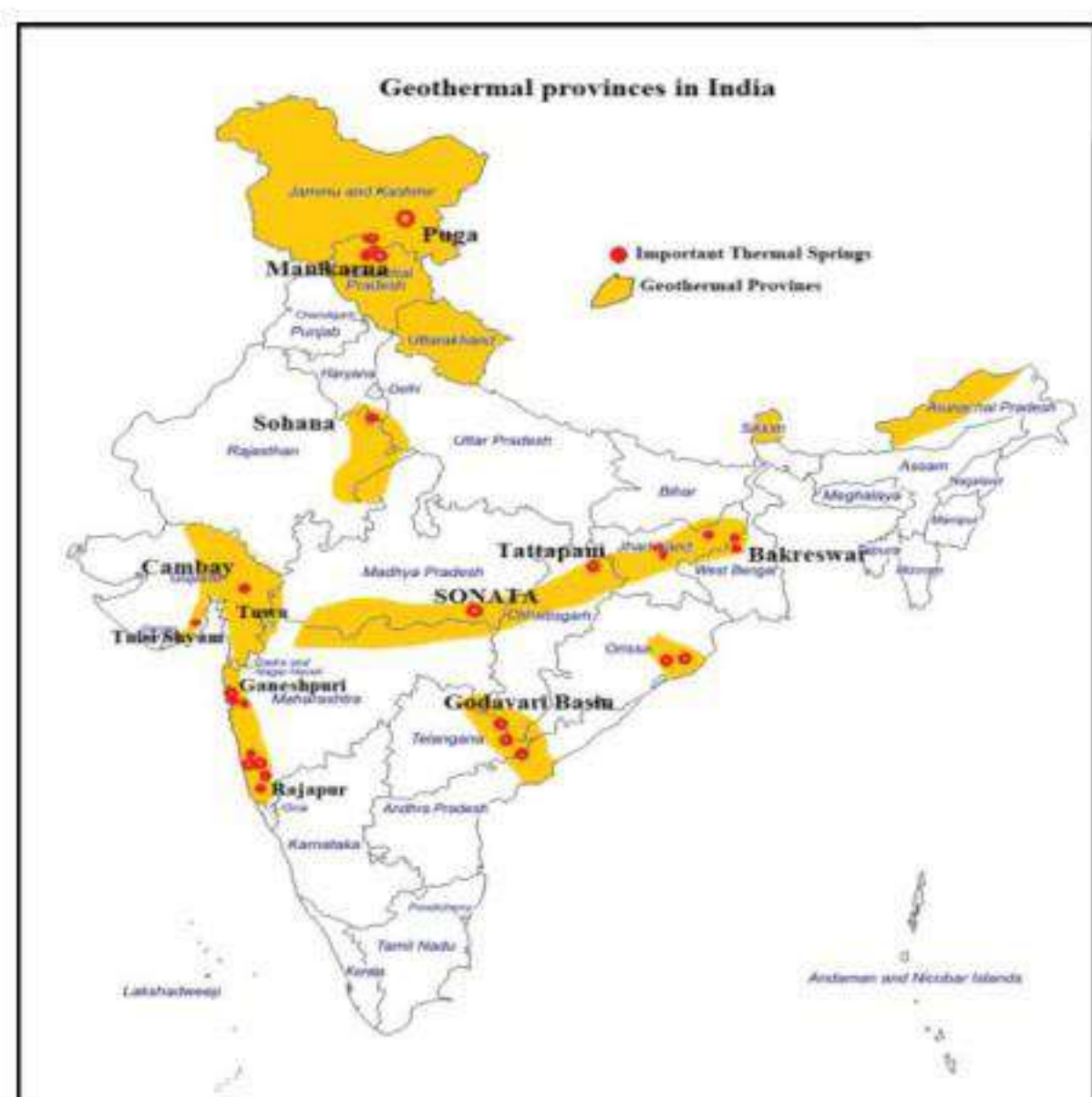


Manas National Park of Assam lies in the east.

- It is the easternmost extension of extreme bio-diverse North-East India & represents the highly endemic Indo-Malayan region. The fragile "Terai Eco-System" is a part of this Reserve.
- **BTR serves as an international corridor for elephant migration between India and Bhutan.**
- The reserve encompasses as many as eight forest types.
- **Tiger Census report 2018 stated: "Tigers were not recorded from Buxa (West Bengal) and Dampa (Mizoram)".** However, tigers have been sighted here now, after 23 years.

**5) Geothermal Energy:** It is an energy source that is stored in the form of heat beneath the earth's surface, which is clean, renewable, sustainable, carbon-free, continuous, uninterrupted, and environment-friendly. It is the only renewable energy available 24×7 to mankind not requiring storage and unaffected by day-night or seasonality variance.

- **Geothermal resources in India have been mapped by the Geological Survey of India (GSI) and a broad estimate by the Ministry of New and Renewable Energy (MNRE) suggests that there could be 10 GW of geothermal power**



31.1.23

**1) Senna Spectabilis:** It is an invasive species introduced as an ornamental species and for use as firewood from South and Central America. IUCN: Least Concern. Invasion is most severe in Wayanad Wildlife Sanctuary

- Kerala has recently come out with a management plan to eradicate Senna spectabilis in Periyar Tiger Reserve which is located in Western Ghats in Kerala and drained by the rivers Mullayar and Periyar. Flora: tropical evergreen, semi-evergreen, moist deciduous forests .

**2) Neglected Tropical Diseases:** The "Global report on neglected tropical diseases 2023" report has been published on World NTD Day — January 30, 2023, by World Health Organization (WHO)

- **NTDs are a group of 20 conditions mainly prevalent in tropical areas where people do not have access to clean water or safe ways to dispose of human waste.**
- They are caused by various pathogens, including viruses, bacteria, parasites, fungi, and toxins. NTDs are most common among marginalized communities in the developing regions of Africa, Asia, and the Americas.
- London Declaration on NTD was adopted on 30th January 2012 to recognize the global burden of NTDs.

**3) Nitrate Radicals:** It is an oxide of nitrogen that consists of three oxygen atoms bound to a nitrogen atom. Nitrogen oxides are reactive gases that regulate the formation of air pollutants, including ozone and PM 2.5 particles. Nitrate radicals will oxidize gas pollutants such as volatile organic compounds (VOCs), which will then generate ozone and secondary organic aerosol.

- Recently, a new study has found that parts of India and China are hotspots for the night-time production of nitrate radicals.

**4) Assets under management (AUM):** AUM is the **total market value of investments a financial institution (such as a bank, mutual fund, or hedge fund) owns or manages on behalf of its clients.**



- AUM can be calculated in different ways, depending on the firm's discretion.
- The calculation is done on the basis of either the total capital that the firm handles or calculating the Individual client's money.
- AUM fluctuates daily reflecting the variable returns from stocks, mutual funds and change in prices of fixed investment. AUM helps to build the market value of the firm. It can be used as a market tool to attract potential new customers.

**5) Project ELLORA (Enabling Low Resource Languages):** Microsoft Research is helping preserve 'rare' Indian languages with its Project ELLORA in India by creating digital ecosystems for Indian languages that do not have enough presence online. 3 languages have been taken up:

- **Gondi Language** it is a **South-Central Dravidian language**. The Gondi script is perhaps the only script in the country besides Urdu which is written right to left.
- In northern and central India, it is the only language, barring Gujarati, which has a script of its own. All other north and central Indian languages use the Devnagri script.
- **Mundari (Mundari)** is a **Munda language of the Austroasiatic language family spoken by the Munda tribes in the eastern Indian states of Jharkhand, Odisha and West Bengal**.
- The Idu Mishmi language is a small language spoken by the Mishmi people in the Dibang Valley district, of the Indian state of Arunachal Pradesh speakers in China 1994.
- **It is considered an endangered language.**



1. **VIRAASAT Festival:** The second phase of the Sari Festival, **Celebrating 75 handwoven Saris of India will begin soon in January 2023.**

The event is organised by **the Ministry of Textiles**. The event is likely to bring renewed focus on the **age-old tradition of Sari weaving and thereby improve earnings of the handloom community**. Handloom sector is a symbol of our country's rich and varied cultural heritage, besides being one of the key sectors providing employment to a large number of people, especially women.

2. **Indian Science Congress:** The Prime Minister will inaugurate the 108th Indian Science Congress.

**Indian Science Congress is a major focal point for scientists, researchers and academicians interested in various aspects of scientific discoveries and technologies.** The theme of the event this year is "Science and Technology for Sustainable Development with Women Empowerment." The Indian Science Congress Association (ISCA) owes its origin to the foresight and initiative of two British Chemists, namely, Professor J. L. Simonsen and Professor P.S. MacMahon. **The first meeting of the Congress was held from January 15-17, 1914 at the premises of the Asiatic Society, Calcutta.**

3. **Draft Amendments to IT Rules:** The Ministry of Electronics and Information Technology today released draft amendments to the IT intermediary rules 2021, pertaining to **Online Gaming**. The Ministry has also been designated as the nodal ministry for online gaming recently. The draft rules have strict provisions against betting and wagering. The draft furthers the online gaming ecosystem to expand & grow and be an important catalyst to India's One trillion dollar Digital economy goal by 2025-26. The draft has proposed a self-regulatory mechanism which may ensure that the games do not have violent, addictive or sexual content. Around 40 to 45 percent of the gamers in India are women, and therefore it is all more

important to keep the gaming ecosystem safe.

4. **SMART Programme:** The National Commission for Indian System of Medicine (NCISM) and the Central Council for Research in Ayurvedic Sciences (CCRAS), the two prominent institutions under the Ministry of Ayush, Government of India for regulating medical education and conducting scientific research respectively, have launched 'SMART' (Scope for Mainstreaming Ayurveda Research in Teaching Professionals) program **aimed to boost scientific research in priority healthcare research areas through Ayurveda colleges and hospitals**. This program has the potential to transform clinical research in Ayurveda.
5. **Defence Research and Development Organisation:** The DRDO marked the 65th Foundation Day of the Organisation, which is celebrated on 1st January every year. The DRDO is the premier agency under the Department of Defence Research and Development in Ministry of Defence charged with the military's research and development, headquartered in Delhi, India. It was formed in 1958 by the merger of the Technical Development Establishment and the Directorate of Technical Development and Production of the Indian Ordnance Factories with the Defence Science Organisation. DRDO is India's largest and most diverse research organisation
6. **Agnipath Scheme:** The Government had launched Agnipath scheme on **June 15, 2022 to recruit both male and female aspirants into 'below the officer's rank' cadre of the three services for a period of four years as Agniveers**. Candidates between the age group of 17.5 to 21 years are eligible to apply for the scheme. These Agniveers would undergo optimised basic military training and specialised trade training followed by up-skilling courses. **Upon the completion of the 4-years of service, a one-time 'Seva Nidhi' package of Rs 11.71 lakhs will be paid to the Agniveers.**



7. **RISE Campaign:** The President of India, Smt Droupadi Murmu graced the launch of the National Campaign on 'RISE-Rising India through Spiritual Empowerment', organized by Brahma Kumaris at Mount Abu, Rajasthan. RISE campaign would contribute in making India a leading nation by spiritually empowering its people and supporting the welfare of the entire humanity.

**Through the spirit of service based on peace, non-violence and love,** this organization has made significant contributions in many fields like holistic education, rural development, health, women empowerment, disaster management, welfare of divyangjans and orphans and environment protection.

8. **Indian Rhinoceros:** Assam reported zero poaching incidents in 2022 under the Rhino conservation Programme. The Indian rhinoceros (*Rhinoceros unicornis*) is found only in the Brahmaputra valley, parts of North Bengal, and parts of southern Nepal. It has a single black horn that can grow up to 60 cm, and a tough, grey-brown hide with skin folds, which gives the animal its characteristic armour-plated look.

**The Indian rhino is listed as vulnerable in the IUCN Red List;** it was earlier placed in the endangered category.

9. **Savitribai Phule:** Savitribai Phule was an Indian social reformer, educationalist, and poet from Maharashtra. Along with her husband, Mahatma Jyotiba Phule in Maharashtra, she played an important and vital role in improving women's rights in India. She is considered to be the pioneer of India's feminist movement. Savitribai and her husband founded one of the early modern Indian girls' school in Pune, at Bhide wada in 1848. She worked to abolish the discrimination and unfair treatment of people based on caste and gender. She also actively participated in the activities of Satya Sodhak Samaj. She was known for Girls Education and Women's emancipation.

10. **Asian Pacific Postal Union:** India will take over the leadership of the Asian Pacific Postal Union (APPU) having its Headquarters in Bangkok, Thailand from this month. Asian Pacific Postal Union (APPU) is an intergovernmental organization of 32-member countries of the Asian-Pacific region. APPU is the only Restricted Union of the Universal Postal Union (UPU) in the region, which is a specialized agency of the United Nations. The goal of APPU is to extend, facilitate and improve postal relations between member countries and to promote cooperation in the field of postal services.

11. **Hydrogen:** Hydrogen is the lightest and first element on the periodic table. The weight of hydrogen is lesser than air and thus it rises in the atmosphere. It is therefore not found in its pure form.

**Hydrogen is a nontoxic, nonmetallic, odorless, tasteless, colorless, and highly combustible diatomic gas.**

**Hydrogen fuel is a zero-emission fuel burned with oxygen.** It can be used in fuel cells or internal combustion engines. It is also used as a fuel for spacecraft propulsion.

12. **National Hydrogen Energy Mission:** The Union Budget for 2021-22 has announced a National Hydrogen Energy Mission (NHM) as an energy source. The mission aims in generation of hydrogen from green power resources and to link India's growing renewable capacity with the hydrogen economy.

The usage of hydrogen will not only help India in achieving its emission goals under the Paris Agreement, but will also reduce import dependency on fossil fuels.

13. **BIND Scheme:** The Cabinet Committee on Economic Affairs approved the proposal of the Ministry of Information and Broadcasting regarding Central Sector Scheme "Broadcasting Infrastructure and Network Development" (BIND) for infrastructure development of Prasar Bharati i.e. All India Radio (AIR) and Doordarshan (DD).



The BIND scheme of the Ministry is the vehicle for providing financial support to Prasar Bharati for expenses related to expansion and upgradation of its broadcasting infrastructure, content development and civil work related to the organization.

- 14. FCV Tobacco:** Centre provides a special interest free loan to FCV tobacco growers affected by cyclone Mandous in Andhra Pradesh.

**FCV tobacco (a variety of tobacco) is a major commercial crop grown in 10 districts of Andhra Pradesh.** FCV tobacco is the major exportable tobacco variety of the total unmanufactured tobacco exports from India. FCV Tobacco growers sell their produce through e-auction platform developed and operated by Tobacco Board. The interest-free loan to the eligible FCV Tobacco farmers will be administered by Tobacco Board, a statutory body under Ministry of Commerce and Industry, Government of India.

- 15. Kala-azar disease: Kala-azar or Visceral Leishmaniasis is a protozoan parasitic disease, spread by sandfly bites.** The flies are infected with the parasite called 'leishmania donovani'. The disease affects some of the poorest people and is linked to malnutrition, population displacement, poor housing, a weak immune system. Anti-leishmanial medicines are available for treatment. Vector control is also recommended by the WHO through insecticide spray, use of insecticide-treated nets, etc.

- 16. Youth20 Summit:** Union Minister of Youth Affairs and Sports will launch the themes, logo and website of Y20 Summit in New Delhi. **India is hosting the Y20 summit for the first time.**

**At Y20 Engagement group, India's key focus is to bring young leaders from all across the globe together and discuss ideas for a better tomorrow and draft an agenda for action.** The activities to be undertaken by

Y20 will focus on global youth leadership and partnership.

- 17. Purple Fest:** The first-of-its-kind inclusive festival in India, '**Purple Fest: Celebrating Diversity**' is set to begin in Goa. The festival aims to showcase how we can come together to create a welcoming and inclusive world for everyone.

**Aimed at furthering the spirit of inclusion, the Purple Fest will feature a variety of exciting live performances, sporting events, grand exhibitions,** immersive experience zones, accessible movie screenings, & discussions on vital subjects like inclusive education, tourism, employment, & independent living.

- 18. Eco-Sensitive Zones:** The National Wildlife Action Plan (2002-2016) of the Ministry of Environment, Forest and Climate Change (MoEFCC) stipulated **that state governments should declare land falling within 10 km of the boundaries of national parks and wildlife sanctuaries as eco-fragile zones or Eco-Sensitive Zones (ESZs) under the Environmental (Protection) Act, 1986.**

While the 10-km rule is implemented as a general principle, the extent of its application can be declared beyond 10 km. The basic aim is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities.

- 19. Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):** PMBJP is a campaign launched by the Department of Pharmaceuticals in 2008 under the name Jan Aushadhi Campaign. The campaign was revamped as PMBJP in 2015-16.

Bureau of Pharma PSUs of India (BPPI) is the implementation agency for PMBJP.

**The Bureau of Pharma Public Sector Undertakings (PSUs) of India works under the Ministry of Chemicals & Fertilisers.**

**Objective:** To make available quality medicines, consumables and surgical items at affordable prices for all and reduce out of pocket expenditure of consumers/patients.



**20. Sweet Revolution:** Sweet Revolution in India also known as Honey Mission or Mithi Kranti is launched to **increase the promotion of the development of scientific beekeeping and production of honey.** PM Modi called for Sweet Revolution in 2016 **with the vision to double the income of the farmers by 2024.** It was launched to promote beekeeping and associated activities.

In 2020, the government launched the National Beekeeping and Honey Mission to give Sweet Revolution a push (under the Ministry of Agriculture and Farmers Welfare).

**21. Indian Telegraph (Infrastructure Safety) Rules 2022:** The Department of Telecommunications under the Ministry of Communications has formulated the Indian Telegraph (Infrastructure Safety) Rules 2022. **The rules is to address the issues of safety to the existing telecom infrastructure.**

**Advantages (For Government):** Many utilities can be saved from unwanted cuts and wasteful cost towards restoration, thus saving thousands of crores for businesses and associated tax loss to Govt.

**Advantages (For Citizens):** Inconvenience caused to citizens because of frequent breakdown may be reduced due to better synergy between the agencies.

**22. Indira Point:** Indira Point, the southernmost point of India's territory, is a village in the Nicobar district at Great Nicobar Island of Andaman and Nicobar Islands in India. It is located in the Great Nicobar tehsil. **Indira Point is along the Great Channel, popularly referred to as the 'Six Degree Channel', which is a major shipping lane for international traffic.** This place got the name Indira Point after Indira Gandhi visited the place during her tenure as the Prime Minister of India. **It was previously known as Pygmalion Point and Parsons Point.**

**23. Digital India Awards:** It is to encourage and honour innovative digital initiatives by government entities at all levels. **DIA 2022 aims to inspire and motivate not only the**

**government entities but also start-ups and grassroots level digital initiatives in fulfilling the Digital India vision.** DIA are instituted under the aegis of National Portal of India which provides single-window access to information & services being offered by Indian government entities at all levels. The selection process includes nomination of digital initiatives by Government entities through the Rashtriya Puraskar Portal managed of the Ministry of Home Affairs.

**24. DHARMA Application:** DHARMA (Dam Health and Rehabilitation Monitoring) is a system to monitor the health of dams. It is web-based tool developed to capture important data for all dams and use it for appropriate monitoring and development of rehabilitation protocols.

**This is a step to move towards application of Artificial Intelligence (AI) in dam safety to smartly manage existing water assets.** At present, it is being used by 18 states.

**25. Pravasi Bharatiya Diwas Convention:** Pravasi Bharatiya Divas (PBD) Convention is the flagship event of the Government of India. **It provides an important platform to engage and connect with the overseas Indians and to enable the diaspora to interact with each other.** The 17th Pravasi Bharatiya Divas Convention is being organized in partnership with the Madhya Pradesh Government in Indore.

**The theme of this PBD Convention is "Diaspora: Reliable partners for India's progress in Amrit Kaal".** Over 3,500 diaspora members from nearly 70 different countries have registered for the PBD Convention.

**26. 13th India-US Trade Policy Forum:** Trade Policy Forum is a platform for continuous engagement between two countries in the area of trade and to further the trade and investment relations between the two countries. **The TPF is chaired by the Commerce and Industry Minister from the Indian side and USTR from the US side.**

Both India and USA are natural partners and have trade complementarities, long



standing strategic and economic relationship, people to people contact, and both are vibrant democracies too. **The two countries are also collaborating under the QUAD, I2U2 (India-Israel/ UAE-USA) and IPEF (Indo-Pacific Economic Framework).**

**27. Protein (Ccn2a) from Zebrafish:** Recently, a study found that a protein called **Cellular communication network factor 2a secreted from intervertebral disc cells (Zebrafish)** induces disc regeneration in aged degenerated discs by promoting cell proliferation and cell survival. It is a protein found in the backbone of zebrafish that plays a positive role in disc maintenance.

In humans, discs degenerate naturally, leading to many related health concerns, including low back, neck, and appendage pain.

**28. Exercise Veer Guardian 2023:** It is an **air defence cooperation exercise between India and Japan** involving the Indian Air Force and Japan Air Self Defence Force (JASDF). India and Japan agreed to step up bilateral defence cooperation and engage in more military exercises, including holding the first joint fighter jet drills, reflecting the growing security cooperation between the two sides. This exercise will thus be another step in deepening strategic ties and closer defence cooperation between the two countries.

**29. Dhara event:** Ministry of Culture and Ministry of Education organized the **Dhara on Sangeet and Natya Parampara at SASTRA (Deemed-to-be University) in Thanjavur, Tamil Nadu.**

Dhara is a series of conferences under the aegis of Azadi Ka Amrit Mahotsav to create awareness, preserve and promote multiple domains of Indian Knowledge Systems.

The aim of the event was to create a Vision Document 2047 to revitalise and popularise our performing art traditions and effectively address the challenges that this ecosystem faces.

**30. e-NAM Portal:** e-NAM, a flagship initiative of the Ministry of Agriculture and Farmers

Welfare, has won the Platinum Award in the Digital Empowerment of Citizens Category in Digital India Awards 2022 held in New Delhi. e-NAM is a digital platform integrating 1260 APMC mandis across 22 States and 3 UTs to facilitate online trading of 203 agriculture and horticulture commodities to enable farmers to realize better remunerative prices for their produce.

e-NAM is catalysing the digital transformation of mandi operations and e-trading of agricultural commodities.

e-NAM is empowering citizens by way of digitalization through ease of operation, accessibility, transparency and efficiency of operations for better price discovery for farmers.

**31. National Science Day:** Union Minister of Science and Technology unveils the theme for National Science Day 2023, titled **"Global Science for Global Wellbeing"**. As India enters 2023, the theme indicates India's emerging global role and rising visibility in the international arena.

**National Science Day (NSD) is celebrated every year on 28 February to commemorate the discovery of the 'Raman Effect'.** Theme of "Global Science for Global Wellbeing" is perfectly in sync with India assuming the Presidency of G-20, where she will become the voice of the Global South, comprising of developing countries of Asia, Africa and South America.

**32. Value-based service under PM-JAY:** With an objective to shift the focus of measuring performance of hospitals from volume of services provided to the value of healthcare services, **National Health Authority (NHA) is introducing a new system to measure and grade hospital performance under the flagship scheme Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).** The performance of AB PM-JAY empanelled hospitals will be measured based on five performance indicators such as: 1. Beneficiary Satisfaction; 2. Hospital Readmission Rate; 3. The extent of Out-of-Pocket Expenditure; 4. Confirmed



Grievances and 5. Improvement in-patient's Health-Related Quality of Life.

**33. Jai Hind Show: The new Light and Sound Show at Red Fort by ASI is titled as 'Jai Hind'.**

**The Light and Sound Show 'Jai Hind' at Red Fort will be showcased in Hindi and English Languages.** It will be a dramatic presentation of the bravery and the history of India from the 17th century to the present day. The show is a one-of-its-kind visual and cultural treat highlighting the India's rich history and heritage to newer generations through interactive techniques.

**34. Bureau of Indian Standards:** BIS is the National Standard Body of India for the harmonious development of the activities of **standardization, marking and quality certification of goods.** BIS has been providing traceability and tangibility benefits to the national economy in a number of ways by:

Providing safe reliable quality goods,  
Minimizing health hazards to consumers,  
Promoting exports and imports substitute,  
Control over proliferation of varieties etc through standardization, certification and testing.

**35. MV Ganga Vilas Cruise:** The launch of world's longest river cruise with MV Ganga Vilas by the Prime Minister Shri Narendra Modi on 13 January, 2023 in Varanasi will herald a new age of river cruise tourism for India. The luxury cruise will cover a distance of more than 3,200 kms across 27 river systems in 5 states in India and Bangladesh. The MV Ganga Vilas cruise is a first-of-its-kind cruise service. The global River cruise market has grown at 5% over the last few years and is expected to constitute 37% of cruise market by 2027. MV Ganga Vilas will India in the river cruise map of the world.

**36. National Youth Festival:** The 26th National Youth Festival is being organized at Hubballi- Dharwad, Karnataka by Union Ministry of Youth Affairs & Sports in

collaboration with Government of Karnataka.

Theme of the festival this year is 'Viksit Yuva Viksit Bharat'. The festival aims to step up the role of youth in nation building during Amrit Kaal. Youth Festival is being celebrated as green festival using only biodegradable materials. The focus will be on Prime Minister's Mission LiFE and Green Energy.

**37. Nano Crystalline Coating:** Nano-crystalline coatings can cater to the need for the replacement of environmental hazardous chrome coatings. It is a new method of deposition of Nickel alloy coatings on high-performance materials in engineering applications. **It can replace environmentally toxic chrome coatings.** The coatings obtained are also highly corrosion-resistant and useful for the plastic ware industry.

In contrast to conventional, direct current used for chrome plating, the research group have used electric current in the form of pulses for electroplating purpose.

**38. Defence Acquisition Council:** The Defence Acquisition Council is the highest decision-making body in the Defence Ministry for deciding on new policies and capital acquisitions for the three services (**Army, Navy and Air Force**) and the Indian Coast Guard.

The Minister of Defence is the Chairman of the Council.

It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

**39. Prithvi-II Missile:** Prithvi-II is an indigenously developed **Surface-to-Surface Missile Short-Range Ballistic Missile (SRBM)**, which has a range of around 250 km-350km and can carry a one tonne payload.

**Prithvi II class is a single-stage liquid-fueled missile that has warhead mounting capability of 500 kg-1000 kg.**

The missile is a proven system and is capable of striking targets with a very high degree of precision. The state-of-the-art missile uses an advanced inertial guidance system with manoeuvring trajectory to hit its target.



**40. World Spice Congress 2023:** The WSC is organized by the Spices Board with active participation of Spice Trade Associations in India like the Indian Spice & Foodstuff Exporters' Association.

The 14th edition of the World Spice Congress (WSC), is to be held in Mumbai from in February 2023. **The theme of the WSC 2023 is VISION 2030: S-P-I-C-E-S (Sustainability, Productivity, Innovation, Collaboration, Excellence and Safety).**

Maharashtra is a one of the leading states producing spices. It is the largest producer of turmeric in India. India is known as the 'Spice Bowl' of the world.

**41. Multi State Cooperative Societies (MSCS) Act, 2002:** Although Cooperatives is a state subject, there are many societies such as those for **sugar and milk, banks, milk unions etc whose members and areas of operation are spread across more than one state.**

The MSCS Act was passed to govern such cooperatives. Their board of directors has representation from all states they operate in.

Administrative and financial control of these societies is with the central registrar, with the law making it clear that no state government official can wield any control on them.

**42. Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY):** The Cabinet led by Hon'ble Prime Minister Shri Narendra Modi had approved new integrated food security scheme for providing free foodgrains to Antodaya Ann Yojna (AAY) & Primary Household (PHH) beneficiaries, to be rolled out from 1st January 2023.

**The New scheme has been named as Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY).** The scheme will benefit more than 80 crore poor and poorest of poor people.

The integrated scheme will strengthen the provisions of NFSA, 2013 in terms of accessibility, affordability and availability of foodgrains for the poor.

**43. National Payments Corporation of India (NPCI):** NPCI, an umbrella organisation for operating retail payments and settlement systems in India, is an initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007, for creating a robust Payment & Settlement Infrastructure in India.

It has been incorporated as a "Not for Profit" Company under the provisions of Section 25 of Companies Act 1956 with an intention to provide infrastructure to the entire Banking system in India for physical as well as electronic payment and settlement systems. The Company is focused on bringing innovations in the retail payment systems through the use of technology.

**44. Bio Energy Summit 2023:** Minister of Petroleum and Natural Gas & Housing and Urban Affairs will address the 11th edition of Confederation of Indian Industry's flagship event "Bio Energy Summit 2023" in New Delhi. **The Summit with the theme "Energy Transition- Solution for a Sustainable Tomorrow",** will provide an opportunity for Innovators and a way forward for Clean & Green Energy Solutions for future. The summit will also dwell upon the relevance of biofuel in the overall sustainability agenda.

**CII Bio Energy Summit 2023 will be focussing on compressed biogas, ethanol, financing, and waste to biofuels besides ministerial sessions.**

**45. Confederation Of Indian Industry (CII):** It is a non-government, not-for-profit, industry-led and industry-managed organization. **It was founded in 1895, its headquarters is in New Delhi.**

It works to create and sustain an environment conducive to the development of India, partnering industry, Government and civil society, through advisory and consultative processes.

**46. Standards For Basmati Rice:** For the first time in the country, **Food Safety and**



**Standards Authority of India (FSSAI) has specified the identity standards for Basmati Rice.** As per these standards, Basmati rice shall possess natural fragrance characteristic of basmati rice and be free from artificial colouring, polishing agents and artificial fragrances. These standards also specify various identity and quality parameters for basmati rice such as average size of grains and their elongation ratio after cooking; maximum limits of moisture, amylose content, uric acid. **These standards will be enforced w.e.f 1st August, 2023.**

Basmati rice is a premium variety of rice cultivated in the Himalayan foothills of the Indian sub-continent and is universally known for its long grain size, fluffy texture and unique inherent aroma and flavour.

**47. Swami Vivekananda (1863 – 1902):** Born as Narendranath Dutta in Calcutta in January 1863. He was influenced by **Ramakrishna Paramahansa who became his Guru.** He became a monk and travelled all over India and the West. His writings and speeches did a lot to spread Hindu philosophy in the West especially Advaita Vedanta and Yoga philosophies. In 1886, he formally accepted monastic vows. He established many Mathas in India **the most important being the Belur Math in Belur, Howrah district.** He founded the Ramakrishna Mission in May 1897. According to him, the best form of worship was the service of the people. **He laid stress on physical and moral strength.** One of his many quotes says, “You Will Be Nearer To Heaven through Football than through the Study of the Gita.”

**48. Naval Innovation and Indigenisation Organisation (NIIO):** NIIO has been launched in 2020 by the Defence Minister of India.

**Objective: To foster innovation and indigenisation for self-reliance in defence in keeping with the vision of Atmanirbhar Bharat.**

**The NIIO is a three-tiered organisation**

- Naval Technology Acceleration Council (N-TAC) will bring together the twin aspects of innovation and indigenisation and provide apex level directives.

- Working group under the N-TAC will implement the projects.
- Technology Development Acceleration Cell (TDAC) has been created for induction of emerging disruptive technology in an accelerated time frame.

**49. Defence Innovation Organization (DIO):** DIO was formed as a “not for profit” company as per Section 8 of the Companies Act 2013 . **It was created by the defence PSUs HAL & BEL, to support the MoD in building the entrepreneurship and innovation ecosystem in Defence** in India by implementing the iDEX framework. It works under the Ministry of Defence.

**Key Function:** DIO is responsible for managing and funding the Innovations for Defence Excellence (iDEX) Initiative. DIO will provide high-level policy guidance to iDEX. However, iDEX will have functional autonomy. iDEX is also the executive arm of the Defence Innovation Organisation (DIO).

**50. Global South Summit 2023:** Hon’ble Minister of Petroleum and Natural Gas addressed the Energy Ministers’ session of “**Voice of Global South Summit–2023**” themed as “**Energy Security and development: Roadmap to Prosperity**”.

The session served as a platform to generate ideas from the developing world for achieving energy security, which is affordable, accessible and sustainable. **The Voice of Global South Summit is aimed at achieving “Unity of Voice, Unity of Purpose” and is in line with Hon’ble Prime Minister’s vision to shape a positive G20 agenda through consultation with G20 countries and members of the global south.**

**51. One Sun One World One Grid (OSOWOG):** The idea behind the concept is a **trans-national electricity grid supplying solar power across the globe.** The vision behind the OSOWOG is ‘The Sun Never Sets’ and is a constant at some geographical location, globally, at any given point of time. **It was launched by India at COP26 climate summit at Glasgow.**



It has been taken up under the technical assistance program of the World Bank.

The OSOWOG plan may also leverage the International Solar Alliance (ISA), co-founded by India that has 80 countries as members.

**52. PM SVANidhi Scheme:** It is a **Central Sector Scheme under the Ministry of Housing and Urban Affairs with the following objectives:**

- To facilitate working capital loan
- To incentivize regular repayment and
- To reward digital transactions.

The scheme will open up new opportunities for street vendors to move up the economic ladder. The Scheme is available for beneficiaries belonging to only those States/UTs which have notified Rules and Scheme under Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014.

**The Prime Minister Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) Scheme has been extended till December 2024.** 'SVANidhi Se Samridhi' component has been approved for all beneficiaries of PM SVANidhi scheme across the country. 'SVANidhi Se Samridhi' was launched in January 2021 to map the socio-economic profile of the PM SVANidhi beneficiaries and their families.

**53. Lymphatic Filariasis:** LF, commonly known as elephantiasis and is considered as a Neglected Tropical Disease (NTD). **It is the second most disabling disease after mental health.** It impairs the lymphatic system and can lead to the abnormal enlargement of body parts, causing pain, severe disability and social stigma. **It is a vector-borne disease, caused by infection with parasites classified as nematodes (roundworms) of the family Filarioidea.** Over 40% of worldwide cases are found in India. The WHO recommends three drug treatments to accelerate the global elimination of lymphatic filariasis. **India is committed to eliminating Lymphatic Filariasis by 2027, three years ahead of the global target.**

**54. Food Corporation Of India:** Food Corporation of India (FCI) is a Public Sector Undertaking, under the Department of Food & Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution.

**FCI is a statutory body set up in 1965 under the Food Corporations Act 1964. It was established against the backdrop of a major shortage of grains, especially wheat.**

It has the **primary duty to undertake purchase, store, move/transport, distribute and sell food grains and other foodstuffs.**

Objectives: To provide remunerative prices to farmers.

- To help in crisis management of food grains.
- Maintaining operational buffer stocks of food grains.
- Distribution of food grains for Public Distribution System.
- Effective Price Support Operations

**55. Commission for Agricultural Costs & Prices (CACP):** The CACP is an attached office of the Ministry of Agriculture and Farmers Welfare. The Commission for Agricultural Costs & Prices (CACP since 1985, earlier named as Agricultural Prices Commission) came into existence in January 1965.

**It is mandated to recommend minimum support prices (MSPs) to incentivize the cultivators to adopt modern technology, and raise productivity and overall grain production in line with the emerging demand patterns in the country.** MSP for major agricultural products are fixed by the government, each year, after taking into account the recommendations of the Commission.

**56. SVASTIK Initiative:** Scientifically Validated Traditional Knowledge to the Society (SVASTIK) Initiative is to **conserve the practice of the right tradition, inculcate scientific temper of verifying tradition in a scientific manner and instil confidence in citizens regarding the scientific value of our traditional knowledge/practices.**

CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR) has been assigned as the nodal organisation to implement this national initiative. As a part of this initiative,



simplified creative content on Traditional Knowledge is being disseminated through digital platforms in **English, Hindi, and different regional languages.**

**57. ADIP Scheme: The Scheme has been in operation since 1981.** The scheme follows the definitions of various types of disabilities as given in the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) (PWD) Act 1995.

**The Ministry Of Social Justice and Empowerment is the nodal ministry of the scheme .**

The Objective of Assistance to Disabled Persons Scheme is to assist the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation.

Grants-in-aid are released to various implementing agencies for purchase and distribution of aids and assistive devices.

**58. National Financial Regulatory Authority:** NFRA was constituted in 2018 by the Government of India under section 132 (1) of the Companies Act, 2013. It is an audit regulator.

**Composition:** It consists of a chairperson, who shall be a person of eminence and having expertise in accountancy, auditing, finance or law, appointed by the Central Government and such other members not exceeding 15.

**Functions and Duties:** Recommends accounting and auditing policies and standards.

- Monitor and enforce compliance
- Oversee the quality of service of the professions

**Its account is monitored by the Comptroller and Auditor-General of India.** It is headquartered in New Delhi.

**59. Exercise Varuna 2023: The 21st Edition of the Bilateral Naval Exercise between India and France – Exercise Varuna commenced on the Western Seaboard today, 16 Jan 23.** While the bilateral exercise between the two

navies were initiated in 1993, it was christened as 'VARUNA' in 2001 and has become a hallmark of India – France strategic bilateral relationship.

The Units of both navies will endeavour to hone their war-fighting skills in maritime theatre, enhance their inter-operability to undertake multi-discipline operations in the maritime domain and demonstrate their ability as an integrated force to promote peace, security and stability in the region.

**60. Solitary Waves:** First evidence of Solitary Waves has been Identified by Indian Institute of Geomagnetism, under DST with the help of MAVEN spacecraft (NASA) near Mars.

Solitary waves are the distinct electric field fluctuations (bipolar or monopolar) that follow constant amplitude-phase relations. Their shape and size are less affected during their propagation. **The magnitude and duration of these pulses are found to be 1-25 milivolt/meter and 0.2–1.7 milliseconds, respectively.** These pulses are dominantly seen in the dawn and afternoon-dusk sectors at an altitude of 1000–3500 km around the Mars.

These waves are responsible for the plasma energization and transport into Earth's magnetosphere.

**61. VSHORAD (Very Short Range Air Defence System) Missile System:** VSHORAD Missile System is developed by DRDO for the Army and Navy.

It is meant to kill low-altitude aerial threats at short ranges. It is a man-portable Air Defence System (MANPAD).

VSHORADS missile incorporates many novel technologies including a miniaturized Reaction Control System (RCS) and integrated avionics.

The missile, meant for neutralizing low-altitude aerial threats at short ranges is propelled by a dual-thrust solid motor.

The design of the missile including the launcher has been highly optimized to ensure easy portability.

**62. Grameen Udyami Scheme:** The Grameen Udyami Scheme was launched to



augment skill training in tribal communities for their inclusive and sustainable growth. **Under the programme, the endeavor is to multi-skill India's youth and impart functional skills to them for enabling livelihoods.** It is funded by NSDC that aims to train 450 tribal students.

**The objective is to expand the rural/local economy, enhance employment opportunities, reduce forced migration and also lead to the conservation of natural resources.**

**Nodal Ministry:** Ministry of Skill Development and Entreprises.

**63. Square Kilometres Array Observatory:** SKAO is a new intergovernmental organisation dedicated to radio astronomy and is headquartered in the UK.

**At the moment, organisations from ten countries are a part of the SKAO.**

These include Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, the Netherlands and the UK. The telescope, proposed to be the largest radio telescope in the world, will be located in Africa and Australia. Its operation, maintenance and construction will be overseen by SKAO.

**64. Maunakea Spectroscopic Explorer:** The Maunakea Spectroscopic Explorer is an **11.25 m aperture telescope.** It will lead the world in multi object spectroscopy, its unique capability to study up to 4,000 astronomical objects at once. It will replace the iconic 3.6 m Canada – France Hawaii Telescope (CFHT) on the summit of Maunakea. It is a world class astronomical site.

At the highest level the objectives of MSE are to enhance scientific research and education for the partner communities. It will be operational in the USA.

**65. Davos Meet 2023:** The annual meeting of World Economic Forum (WEF) 2023 is being held in Davos, Switzerland, from 16 January to 20 January 2023.

The event is being hosted by the World Economic Forum in cooperation with the

Swiss government and the Canton of Graubünden.

**The theme for this year's summit is 'Cooperation for Sustainable Growth and Shared Prosperity'.**

**Agenda of this year's meet:**

1. Economics of Women's Health
2. State of the Pandemic
3. Putting health at the Heart of Climate Action
4. Health System: Building through Disruption
5. Better Health with Data

**66. World Economic Forum:** World Economic Forum (WEF) is an international non-governmental and lobbying organization. Klaus Schwab is credited to have founded WEF on 24, 1971.

**It is recognized as the international institution for public-private cooperation by the Swiss government.**

**WEF Headquarters: Geneva, Switzerland.** It is mostly funded by its 1,000 member companies.

**Mandate:** WEF is committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

**67. Thiruvalluvar:** The Prime Minister, has paid homage to Thiruvalluvar on Thiruvalluvar Day and recalled his noble thoughts. He also urged the youth to read the Kural.

**Thiruvalluvar, also called Valluvar, was a Tamil poet-saint.** He contributed the Tirukkural or 'Kural' to the Sangam literature.

**Tirukkural is comprised of 133 sections of 10 couplets each divided into three books:** Aram (virtue), Porul (government and society), and Kamam (love).

**68. Environmental, Social and Governance Scheme:** ESG refers to a set of criteria to determine how a company performs in preserving the natural environment, managing relationships with its stakeholders, and also how it deals with



matters including the company's leadership, internal controls, and shareholder's rights. ESG is a strategic framework for activities ranging from the company's carbon footprint and commitment to sustainability to its workplace culture and commitment to diversity and inclusion to its overall ethos regarding corporate risks and practices.

**69. The International Financial Services Centres Authority (IFSCA):** IFSCA has been established on April 27, 2020 under the International Financial Services Centres Authority Act, 2019. **It is headquartered at GIFT City, Gandhinagar in Gujarat.**

The IFSCA is a unified authority for the development and regulation of financial products, financial services and financial institutions in the International Financial Services Centre (IFSC) in India. At present, the GIFT IFSC is the maiden international financial services centre in India.

**The main objective of the IFSCA is to develop a strong global connect and focus on the needs of the Indian economy as well as to serve as an international financial platform for the entire region and the global economy as a whole.**

**70. Saansad Khel Mahakumbh 2023: PM inaugurates second phase of Saansad Khel Mahakumbh 2022-23 in Basti District.** The first phase of the khel Mahakumbh was scheduled in December 2022. The Khel Mahakumbh organises various competitions in both indoor and outdoor sports.

**The Khel Mahakumbh is a novel initiative that provides an opportunity and a platform for the youth of District Basti and neighbouring areas to showcase their sporting talent, and motivates them to take sport as a career option.** It also endeavours to inculcate the spirit of discipline, teamwork, healthy competition, self-confidence and nationalism among the youth of the region.

**71. Advance Authorisation Scheme:** The Advance Authorization Scheme is a scheme where the import of inputs will be allowed to be made duty-free (after making normal allowance for wastage) if they are physically

incorporated in a product which is going to be exported. An export obligation is usually set as a condition for issuing Advance Authorization. It is available to either a manufacturer exporter directly or a merchant exporter tied with a supporting manufacturer.

Advance Authorization is valid for 12 months from the date of issue of such Authorization. The inputs imported are exempt from duties like Basic Customs Duty, Additional Customs Duty, Education Cess, Anti-dumping duty, Safeguard Duty and Transition Product-Specific Safeguard duty, Integrated tax, and Compensation Cess, subject to certain conditions.

**72. Hazira-Ghogha Ro-Pax Ferry Service:** Ministry of Shipping has launched a roll on-roll off cum passenger ferry service, called 'ROPAX'.

**ROPAX service is a water transport service project under Eastern Waterfront Development.**

The benefits of this service include reduction in the travel time, vehicular emission and traffic on the road.

Hazira-Ghogha Ro-Pax ferry service will work as a Gateway to South Gujarat and Saurashtra region. It will reduce the distance between Ghogha and Hazira from 370 Kilometres to 90 Kilometres. The benefits of enhanced connectivity through this ferry service will also result in increased inflow of tourists in the famous Asiatic lion wildlife sanctuary at Gir.

**73. Atal Bhujal Yojana:** The Atal Bhujal Yojana (ABHY) is a central sector scheme for sustainable management of groundwater with community participation.

It envisages people's participation through the formation of 'Water User Associations', water budgeting, preparation & implementation of Gram-panchayat-wise water security plans, etc.

**It is being implemented by the Ministry of Jal Shakti.** The scheme is being funded by the Government of India and the World Bank on 50:50 basis.



The identified over-exploited and water-stressed areas for the implementation of the scheme are Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, and Uttar Pradesh.

**74. Chabahar Port:** The port of Chabahar is located in southeastern Iran in the Gulf of Oman. It is only 72 km away from the Gwadar port in Pakistan which has been developed by China.

About: It is the only Iranian port with direct access to the Indian ocean and consists of two separate ports named Shahid Beheshti and Shahid Kalantari.

**It's located in the Sistan-Balochistan province on the energy-rich Iran's southern coast.**

The Chabahar port is considered a gateway to golden opportunities for trade by India, Iran and Afghanistan with central Asian countries.



**75. AI-AQMS v1.0 Air Quality Monitoring System:** Ministry of Electronics and Information Technology with the Centre for Development of Advanced Computing (C-DAC), in collaboration with TeXMIN, ISM, Dhanbad has developed an outdoor air quality monitoring station to monitor environmental pollutants.

**It will monitor parameters like PM 1.0, PM 2.5, PM 10.0, SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>2</sub>, ambient temperature, relative humidity, etc.,** for continuous air quality analysis of the environment.

The new Air Quality Monitoring System (AI-AQMS v1.0) will soon be available for a wider market as the new technology is already transferred to JM EnviroLab for further

commercialization and deployment in different mining and cement industries.

**76. North-South Transport Corridor (INSTC):** INSTC was first proposed in 2000 to improve connectivity between Russia, Central Asian states, and India.

**Route:** It is a 7,200-km-long multi-modal connectivity project to establish transport networks (ship, rail, and road route). It will be used for moving freight between India, Russia, Iran, Europe, and Central Asia. It will cut costs and time in moving cargo.

**Members:** It includes 13 countries namely India, Iran, Russia, Turkey, Armenia, Azerbaijan, Belarus, Kazakhstan, the Kyrgyz Republic, Tajikistan, Oman, Syria, and Ukraine.

**The objective of the corridor is to increase trade connectivity between major cities such as Mumbai, Moscow, Tehran, Baku, Bandar Abbas, Astrakhan, Bandar Anzali and etc.**



**77. Submarine Vagir:** Indian Navy is set to commission the fifth Kalvari class submarine Vagir. The submarines are being built in India by the Mazagon Dock Shipbuilders Limited (MDL) Mumbai, under collaboration with M/s Naval Group, France.

**It is named after the Sand Fish, a deadly deep-sea predator of the Indian Ocean.**

It is a part of the six Kalvari-class submarines being built in India. **The submarine is designed to operate in all theatres of operation, showcasing interoperability with other components of a Naval Task Force.**

It can launch attacks with both torpedoes and tube launched anti-ship missiles, whilst underwater or on surface.



**78. Exercise Cyclone-I:** The first ever joint exercise between the special forces of the Indian Army and the Egyptian Army named "Exercise Cyclone-I" is in progress at Jaisalmer in Rajasthan. Exercise "Cyclone - I" is the first exercise of its kind bringing the special forces of both the nations on a common platform.

**The exercise aims to bolster defence co-operation between the two nations and focus on sharing professional skills and interoperability of Special Forces in desert terrain** while undertaking counter terrorism, reconnaissance, raids and other special operations.

**79. New Plateau Type Discovered:** A new plateau type discovered in Maharashtra could prove to be a repository of information to study climate change effects on species survival.

**A rare low-altitude basalt plateau housing 76 species of plants and shrubs from 24 different families was discovered in the Thane region in the Western Ghats.** Plateaus are classified as a type of rock outcrop and provide a unique and challenging environment for species to adapt.

These outcrops have seasonal water availability, limited soil, and nutrients, making them ideal laboratories to study the effects of climate change on species survival.

**80. Pradhan Mantri Rashtriya Bal Puraskar:** It is a civilian honour in India. It is presented in two categories:

**Bal Shakti Puraskar**— It is awarded to Indian citizens aged **under 18 for outstanding achievement in innovation, sports, scholastic achievements, social service, arts & culture, and bravery.**

**Bal Kalyan Puraskar**— It is presented to individuals or organisations who have made **outstanding contributions in child protection, child development, or child welfare.** Both the awards were renamed and combined to form "Pradhan Mantri Rashtriya Bal Puraskar", in 2018. It is administered by Ministry of Women and Child Development. The award is conferred

by President of India in the week preceding India's Republic Day.

**81. Shanghai Cooperation Organisation:** SCO is a permanent intergovernmental international organization. **It's a Eurasian political, economic and military organization aiming to maintain peace, security and stability in the region.** It was created in 2001.

Prior to the creation of SCO in 2001, Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.

Following the accession of Uzbekistan to the organization in 2001, the Shanghai Five was renamed the SCO. India and Pakistan became members in 2017. On 17th September, 2021, it was announced that Iran would become a full member of the SCO.

**Members:** Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India, Pakistan and Iran.

**82. Subhas Chandra Bose Aapda Prabandhan Puraskar:** The annual Subhas Chandra Bose Aapda Prabandhan Puraskar has been instituted to recognize and honour the invaluable contribution and selfless service rendered by individuals and organisations in India in the field of disaster management. **The award is announced every year on 23rd January.**

It carries a cash prize of Rs. 51 lakh and a certificate in case of an institution and Rs. 5 lakh and a certificate in case of an individual.

**83. Netaji Subhash Chandra Bose:** Subhas Chandra Bose was born on 23rd January 1897. The day is celebrated as 'Parakram Diwas' every year.

**He was highly influenced by Vivekananda's teachings and considered him as his spiritual Guru.** His political mentor was Chittaranjan Das.

He worked as the editor for Das's newspaper—Forward, and later started his own newspaper, Swaraj. Bose won the congress presidential elections at Haripura in 1938.



Again in 1939 at Tripuri, he won the presidential elections against Gandhi's candidate Pattabhi Sitarammaya. He also founded a new party, 'the Forward Bloc'.

He reached Japanese-controlled Singapore from Germany in July 1943, issued from there his famous call, 'Delhi Chalo', and announced the formation of the Azad Hind Government and the Indian National Army on 21st October 1943.

**84. TROPEX 2023:** The 2023 edition of Indian Navy's major maritime exercise TROPEX(Theatre Level Operational Readiness Exercise) is currently underway in the Indian Ocean Region. **This operational level exercise is conducted biennially** and witnesses participation not only by all Indian Navy units but also of **Indian Army, Indian Air Force and Coast Guard assets.**

**TROPEX 23 is being conducted over a duration of three months.** The exercise is being conducted in different phases, both in harbour and at sea, encompassing various facets of combat operations, including live weapon firings. **The maritime exercise also facilitates operational level interaction with the Indian Army, Indian Air Force and the Coast Guard,** which will further strengthen interoperability and joint operations in a complex environment.

**85. Exercise AMPHEX 2023:** All three defense forces of India, the Army, the Navy, and the Air Force participated in AMPHEX recently. AMPHEX is a tri-service exercise and was held in Kakinada, Andhra Pradesh. Also, it is an amphibious exercise, meaning both land and sea forces will act together simultaneously. **The 2023 AMPHEX is the largest of all the AMPHEX exercises held so far.**

Amphibious ships do not mean they can run on land and water. Amphibious ships are those ships that aid the land forces during an operation. More than 900 troops participated in the exercise. This included artillery forces, special forces, and armored vehicles.

**86. Central Pollution Control Board:** CPCB is a statutory organisation which was constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. It was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986.

**Principal Functions of the CPCB, as spelt out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981**

- To promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution.
- To improve the quality of air and to prevent, control or abate air pollution in the country.

**87. Polycystic ovary syndrome (PCOS):** It is a multifactorial endocrine disorder which is characterized by chronic anovulation. **Polycystic ovary syndrome is a disorder involving infrequent, irregular or prolonged menstrual periods, and often excess male hormone (androgen) levels.**

PCOD is a condition in which the female's ovaries are affected. It has been found that over 10% of the female population is currently dealing with PCOD.

It will have a condition in which woman's ovaries will start to produce underdeveloped eggs. **Irregular periods, hirsutism, weight gain are the common symptoms of PCOS.** It is the pre-eminent cause of infertility. Risk factors that contribute to the development of PCOS include genetics, neuroendocrine system, sedentary lifestyle, diet, and obesity. Though there are synthetic drugs such as metformin and oral contraceptive pills are available for treatment, their side effects cause concern. Hence, a traditional and herbal medicines has been gaining attention increasingly.

**88. Halwa Ceremony:** The Halwa ceremony, marking the final stage of the Budget preparation process for Union Budget 2023-



24, was held recently. The Union Budget 2023-24 is to be presented on 1st February, 2023. **It is a customary ceremony in which traditional dessert 'halwa' is prepared and served to officials and staff members of the finance ministry.** It is performed every year before the "lock-in" process of Budget preparation begins. The custom has been part of the Budget tradition for decades.

**Lock in Period:** All the officials involved in the Budget preparations will stay at the North Block. This is done to make sure that the secrecy of the Union Budget is maintained. The moment the Finance Minister tables the Union Budget in Parliament, the lock-in period will conclude.

**89. Artificial Brain like Computing:** A team of scientists from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) have used scandium nitride (ScN) and Complementary Metal-Oxide-Semiconductor (CMOS) compatibility to develop brain-like computing. This invention can provide a new material for stable, CMOS-compatible optoelectronic synaptic functionalities at a relatively lower energy cost and hence has the potential to be translated into an industrial product.

**How it works:** Scientists used ScN to develop a device mimicking a synapse (connection between two neurons) that controls the signal transmission as well as remembers the signal.

An artificial optoelectronic synapse with ScN thin films that can mimic synaptic functionalities like short-term memory, long-term memory, learning–forgetting etc.

**90. Green Railway Station Certification:** Visakhapatnam railway station of East Coast Railway has been awarded the 'Green Railway Station Certification with highest rating of Platinum' by the Indian Green Building Council (IGBC). Green Railway Station Certification is a rating system developed by the Confederation of Indian Industry and Indian Green Building Council with the support of the Environment Directorate of Indian Railway. It is a voluntary and consensus-based programme. This is the first of its kind holistic rating in

India to address environmental sustainability in Indian railway stations.

**91. Nidhi Aapke Nikat 2.0:** Employees' Provident Fund Organization (EPFO) launched a massive District Outreach Programme in all the Districts of the country through a revamped Nidhi Aapke Nikat programme. **The Nidhi Aapke Nikat 2.0 is a grievance redressal platform and information exchange network for the employers and the employees** and also a platform for exchange of information with the district level authorities of various State and Central Government departments. The aim of the programme is to reach out to all the districts in the country on the same day every month. **The Nidhi Aapke Nikat 2.0 will be conducted on 27th of every month starting from January 2023.**

**92. Open Market Sale Scheme (OMSS):** FCI sells surplus stocks of wheat and rice at predetermined prices through e-auction in the open market from time to time to enhance the supply of food grains. The purpose of OMSS is to dispose of surplus stocks of wheat and rice held by FCI, and to regulate the prices of wheat in the open market. FCI conducts weekly auctions for the OMSS for wheat on the platform of the NCDEX. The State Governments/ UTs are also allowed to participate in the e-auction, if they require wheat and rice outside TPDS.

**93. Sagar Samrat Vessel:** Union Minister of Petroleum and Natural Gas rededicated ONGC's iconic drilling rig Sagar Samrat, as a Mobile Offshore Production Unit (MOPU). Initially it was a jack-up drilling rig. Commissioned in 1973, Sagar Samrat was built at the Mitsubishi yard in Japan. **It drilled ONGC's first Offshore well in 1974 in Mumbai Offshore region of Arabian Sea, then called the Bombay High.** The British engineering and consulting conglomerate Wood Group's Mustang unit based in Texas carried out the front-end engineering and design for the vessel's conversion.



**94. Central Administrative Tribunal:** It had been established under Article 323 – A of the Constitution. **It provides for adjudication of disputes and complaints with respect to recruitment and conditions of service of persons appointed to public services and posts.** In pursuance of Article 323-A, Parliament passed the Administrative Tribunals Act in 1985. The act authorizes the Central government to establish one CAT and the state administrative tribunals.

**The CAT is a specialist body consisting of Administrative Members and Judicial Members.** A Chairman who has been a sitting or retired Judge of a High Court heads the CAT.

The Tribunal is guided by the principles of natural justice. Under Act 1985, the Tribunal has been conferred with the power to exercise the same jurisdiction and authority in respect of contempt of itself as a High Court.

The orders of the CAT are challenged by way of a Writ Petition under Article 226/227.

**95. Methanol:** Methanol is a low carbon, hydrogen carrier fuel produced from high ash coal, agricultural residue, CO<sub>2</sub> from thermal power plants and natural gas. **It is the best pathway for meeting India's commitment to COP 21 (Paris Agreement).** Methanol is a cost-effective alternative marine fuel. **It is less costly than other marine fuels and is economical in terms of developing the shoreside storage and bunkering infrastructure.** It is also known as wood alcohol. Its properties are similar to ethanol. It is also used in products such as plastics, paints, and cosmetics.

**96. India Energy Week: IEW 2023 is the first major event under India's G20 Presidency.** It will be organized by the Ministry of Petroleum & Natural Gas. **India Energy Week is the only all-encompassing international energy event** supported at the highest level of the Indian government, with participation from all the Public Sector Undertakings (PSUs), and officially supported by the Federation of Indian Petroleum Industry (FIPI).

**97. National Logistics Portal:** The National Logistic Portal (marine) (NLP) is a project of national importance, as inaugurated by the Ministry of Ports Shipping Waterways. **It is a one-stop platform aimed at connecting all the stakeholders of the logistics community using IT, to improve efficiency and transparency by reducing costs and time delays.** NLP will be a single window covering all modes of transport in the waterways, roadways, and airways along with an E-marketplace. It is an "open platform" that allows the coexistence of multiple service providers to provide EXIM-related services independently. It aims to reduce regulatory complexities and enhance the ease of doing business by moving towards user-friendly paperless trade

**98. AISHE 2020-21:** The Ministry of Education, Government of India has released All India Survey on Higher Education (AISHE) 2020-2021. **The Ministry has been conducting All India Survey since 2011, covering all higher educational institutions located in Indian Territory and imparting higher education in the country.** The survey collects detailed information on different parameters such as **student enrollment, teacher's data, infrastructural information, financial information etc.** For the first time, in AISHE



2020-21, HEIs have filled data using entirely online data collection platform through the Web Data Capture Format (DCF) developed by Department of Higher Education through the National Informatics Centre (NIC).

**Highlights of the AISHE (2020-21):** Enrollment in higher education increases, crossing the 4 crore mark for first time; increase of 7.5% from 2019-20 and 21% from 2014-15.

- Female enrollment increase from 2019-20.
- Significant increase of 28% in enrolment of SC students and 38% in enrolment of Female SC Students in 2020-21, compared to 2014-15.
- Substantial increase of 47% in enrolment of ST students and 63.4% increase in the enrolment of Female ST Students in 2020-21, compared to 2014-15.
- Notable increase of 29% in Student Enrolment and 34% in Female Student Enrolment in the North Eastern Region in 2020-21 since 2014-15.
- Gross Enrolment Ratio (GER) has improved from previous year for all social groups.
- Highest number of Universities is in Rajasthan (92), Uttar Pradesh (84) and Gujarat (83).
- 43% universities and 61.4% colleges are located in Rural Areas.

**99. Target Olympic Podium Scheme: The Target Olympic Podium Scheme, launched in 2014 under the aegis of the Ministry of Youth Affairs and Sports (MYAS), Government of India, has been a professional setup to provide holistic support to all athletes. The scheme provides personalized coaching support to the athletes from the best global coaches, International training sessions, visa facilitation support as well as top-of-line research support to track opponent performances.**

**The chief objective of the scheme is to provide financial assistance and other help to athletes in their pursuit of medals in the Olympics** and other international sporting events. In 2020, the TOPS Development was launched as well to produce Olympic winners in 2028 targeting children as young as 10 – 12 years.

**100) Bharat Parv: The six-day mega event “Bharat Parv” is being organized by the Government of India, as part of the Republic Day Celebrations.**

The event would have a Food Festival, Handicraft mela, folk and tribal dance performances, performances by cultural troupes, a Display of Republic Day Tableaux, illumination of Red Fort etc.

- Branding and promotion of Dekho Apna Desh, Ek Bharat Shrestha Bharat, G20 and Mission LIFE would be undertaken during the event.
- Ministry of Tourism has been designated as the nodal Ministry for the event.
- Significance Of Bharat Parv: To Promote the Spirit Of Freedom.
- To celebrate independence and the history of India

**101) National Commission for Women:** Under the NCW Act, 1990, the NCW was set up as a statutory body in January 1992. The commission consists of a chairperson, a member secretary and five other members. The chairperson of the NCW is nominated by the Central Government.

**Mandate and Functions: Its mission is to strive towards enabling women to achieve equality and equal participation through suitable policy formulation, legislative measures, etc.**

**Functions:** Review the constitutional and legal safeguards for women, Recommend remedial legislative measures, Facilitate redressal of grievances.etc.

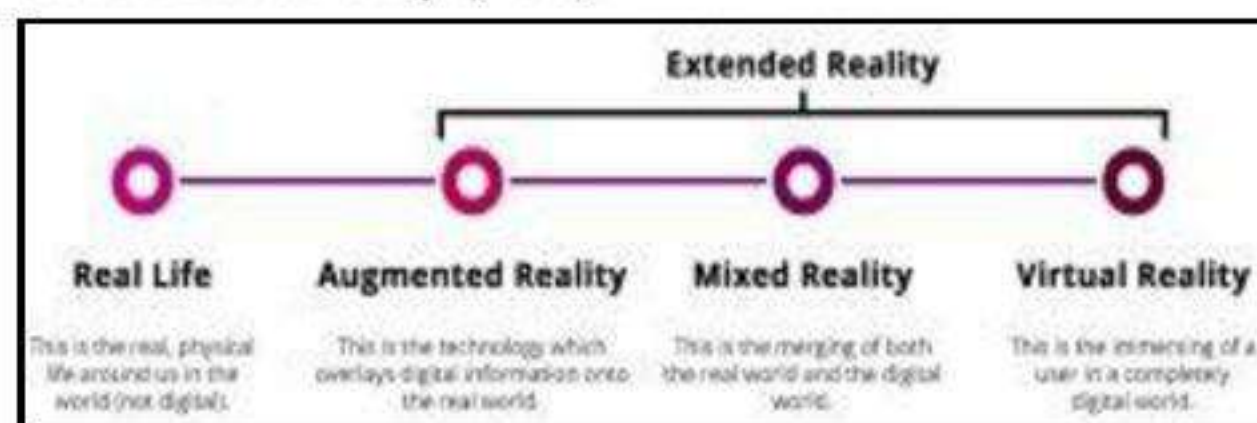


It can act suo-moto in several cases to provide speedy justice.

**102) XR Startup Program: MeitY Startup Hub ( an initiative of MeitY) and Meta (Parent company of Facebook) shortlist 120 Startups and Innovators for the XR Startup Program**

XR Startup Program (started last year) is a collaboration between MSH and Meta to discover, nurture, and accelerate Extended Reality (XR) technology startups and innovators across India. The XR Startup Program includes an Accelerator (for 40 early-age startups) and a Grand Challenge, aimed towards boosting the emerging tech ecosystem in the country

**103) Extended Reality:** Extended Reality (XR) is the **combination of human & computer-generated graphics interaction**, which is in reality as well as the virtual environment. It is an umbrella term that covers all of the various technologies that enhance our senses, whether they're providing additional information about the actual world or creating totally unreal, simulated worlds for us to experience. In basic terms, Extended Reality is a superset of Augmented Reality (AR), Virtual Reality (VR) & Mixed Reality (MR).



**104) Centre for Development of Advanced Computing(C- DAC):** The C-DAC is an Indian autonomous scientific society, operating under the Ministry of Electronics and Information Technology. C-DAC provides several courses in the field of advanced computing and software development. It is headquartered in Pune, Maharashtra. The research of C-DAC now includes: High

Performance Computing, Grid Computing, Cloud Computing, blockchain, Quantum Computing.

Products and developments: PARAM series of computers; GARUDA, India's National Grid Computing Initiative; DARPAN, a real time network monitoring tool.

**105) SCO Film Festival:** The Shanghai Cooperation Organization is to host a film festival in Mumbai. National Film Development Corporation is the Indian representative in organizing the festival. India produces more than 2000 films per year and is the largest film producer in the world followed by the USA and China (third).The festival will build cultural bonding among the SCO countries. Being a Eurasian organization, it is diverse in culture

**106) Kisan Credit Card Scheme:** The scheme was introduced in 1998 for providing adequate and timely credit support from the banking system, under a single window for their cultivation and other needs like purchase of agriculture inputs.

- **Implementing Agencies:** Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks, Cooperatives
- **Features:** The scheme comes with an ATM-enabled RuPay debit card
- **Objectives:** To meet the short term credit requirements, Post-harvest expenses, Consumption requirements of farmer households etc.

**107) India-UAE CEPA:** The agreement was signed on 18th February 2022, during the India-UAE Virtual Summit. The Agreement is a comprehensive agreement, which will cover:

- Trade-in Goods, Rules of Origin, Trade-in Services, Sanitary and Phytosanitary (SPS)



measures, Dispute Settlement, Pharmaceutical products etc.

- Relations: UAE is India's third-largest trading partner. It is also the second-largest export destination of India. The UAE is the eighth largest investor in India.
- Moreover, India and the UAE have recently entered into a Memorandum of Understanding (MoU) whereby the UAE has committed USD 75 billion towards infrastructure development in India.

#### **108) Comprehensive Economic Partnership**

**Agreement:** It is a kind of free trade pact that covers negotiation on the trade in services and investment, and other areas of economic partnership. It may even consider negotiation in areas such as trade facilitation and customs cooperation, competition, and IPR. Partnership agreements or cooperation agreements are more comprehensive than FTAs. CEPA. India has signed CEPAs with South Korea and Japan.

**109) International Year of Millets 2023:** The United Nations General Assembly at its 75th session in March 2021 **declared 2023 the International Year of Millets, following a proposal by India, which wants to position itself as a global hub for millet.**

UN Food and Agriculture Organization (FAO) is the lead agency for celebrating the Year in collaboration with other relevant stakeholders. Millets are popularly known as "wonder food" due to its numerous health benefits. The year will be an opportunity to raise awareness of, and direct policy attention to the nutritional and health benefits of millets and their suitability for cultivation under adverse and changing climatic conditions.

**Millets:** Millets encompass a diverse group of cereals including pearl, proso, foxtail, barnyard, little, kodo, browntop, finger, and Guinea millets, as well as fonio, sorghum (or great millet), and teff. India, Nigeria, and China are the largest producers of millet in the world.

**Significance:** They grow on **arid lands with minimal inputs and resilient to climate change.**

- Millets can empower smallholder farmers, achieve sustainable development, eliminate hunger.
- Millets include various nutrients and minerals.
- Dietary fiber found in millet helps regulate blood pressure and sugar levels.
- **Millets are hardy crops against disease/pests.** Therefore, they require lesser support for chemicals, fertilizers, and pesticides.



## MCQ

### 1) Consider the following statements about the Central Pollution Control Board of India:

1. It is a statutory organization under the Ministry of Environment, Forest and Climate Change.
2. It was established under the Environment (Protection) Act, 1986.
3. The CPCB is also entrusted with the powers and functions under the Air Act, 1981.

### Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (c)** CPCB is a statutory organisation which was constituted in September 1974 under the Water (Prevention and Control of Pollution) Act, 1974 under MoEFCC.

- Important functions: to promote the cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution.
- To improve the quality of air and to prevent, control or abate air pollution in the country

### 2) In India the steel production industry requires the import of

- (a) Saltpeter
- (b) Rock phosphate
- (c) Coking coal
- (d) All of the above

**Ans (c)** Saltpetre (Potassium nitrate) is not used in the production of steel. It is instead used in fertilizers, tree stump removal, rocket propellants and fireworks. It is one of the major constituents of gunpowder (blackpowder) and has been used since the Middle Ages as a food preservative.

- India definitely imports coking coal. It requires 0.8 tonnes of coking coal to produce one tonne of steel. The government

had recently imposed a 2.5 per cent duty on coking coal import.

### 3) With reference to Green methanol, consider the following statements:

1. It is produced renewably and without polluting emissions.
2. It is obtained by synthesis reaction from methane present in natural gas

### Which of the statements given above is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** Green methanol is methanol that is produced renewably and without polluting emissions, one of its variants being generated from green hydrogen.

- It is a low-carbon fuel that can be made from either biomass gasification or renewable electricity and captured carbon dioxide (CO<sub>2</sub>).
- This chemical compound can be used as a low-carbon liquid fuel and is a promising alternative to fossil fuels in areas where decarbonisation is a major challenge, such as maritime transport.
- Grey methanol: It is obtained by synthesis reaction from methane present in natural gas (or in some cases, as in China, still from coal). It is therefore not a renewable or clean energy.
- Blue methanol: It is also obtained by synthesis derived from natural gas, but includes as part of the process the capture and storage of the carbon generated during its production

### 4) With reference to the Tumour Necrosis Factor (TNF), consider the following statements:

1. It is a cytokine which is produced when the immune system is stimulated.
2. Blood cells made in the bone marrow are the major producers of TNF.



**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Tumour Necrosis Factor: It is a cytokine which is produced when the immune system is stimulated by a bacterial extract called Coley's toxin.

- Blood cells made in the bone marrow (myeloid cells) are the major producers of TNF.
- In normal conditions, TNF promotes beneficial processes such as cell survival and tissue regeneration.
- Uncontrolled TNF production can lead to a dangerous cytokine storm and the development of rheumatoid arthritis and similar inflammatory conditions.
- Blocking and neutralising TNF activity can effectively treat numerous autoimmune diseases, including rheumatoid arthritis.
- Cytokines are a broad group of small proteins released by the immune cells in response to a pathogen.

**5) With reference to Social Stock Exchange (SSE), consider the following statements:**

1. Corporate foundations and religious organisations will not be eligible to be identified as social enterprises.
2. Minimum issue size of ₹1 crore and a minimum application size for subscription of ₹2 lakh are currently required for SSE.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Not-for-profit organisations (NPOs) and for-profit social enterprises with social

intent and impact as their primary goal will be eligible to participate in the SSE.

- Corporate foundations, political or religious organisations or activities, professional or trade associations, infrastructure companies, and housing companies, with the exception of affordable housing, will not be eligible to be identified as social enterprises.
- According to Sebi's framework, minimum issue size of ₹1 crore and a minimum application size for subscription of ₹2 lakh are currently required for SSE

**6) With reference to Haemophilia, consider the following statements:**

1. It is a medical condition in which the ability of blood to clot is severely reduced.
2. Women are more vulnerable to this disease than men.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** Haemophilia: It is a medical condition, mostly inherited, in which the ability of blood to clot is severely reduced.

- This disease is caused by a mutation in one of the genes, that provides instructions for making the clotting factor proteins needed to form a blood clot.
- This change or mutation can prevent the clotting protein from working properly or being missing altogether. These genes are located on the X chromosome. Men are more vulnerable to haemophilia than women. It is a rare disease where in about 1 in 10,000 people are born with it.

**7) Charru mussel recently seen in the news is:**

- (a) An invasive species
- (b) A new organic fungicide



- (c) An algae
- (d) A type of moss

**Ans (a)** Recently, the first time this invasive species has been found on the Eastern coast of India and fishermen raised concern over this specie.

- The marine biologists identified these species as *Mytella strigata* or Charu mussels which are Native to South America.
- This is spreading due to the discharge of ballast waters from ships visiting the ports of Kattupalli. Human interference in the wetlands, pollution and nature's actions have triggered the rapid spread of the species.

**Threats:** These mussels spread like a carpet over the river bottoms and thus preventing prawns from grazing or burying themselves in the sediment. Its spread is wiping out the locally prevalent yellow clams and green mussels

**8) With reference Indian National Congress (INC), consider the following statements:**

1. AO Hume is credited as the founder of the organisation.
2. The first session of the INC was held at Gokuldas Tejpal Sanskrit College, Bombay.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans c)** The English bureaucrat Allan Octavian Hume or AO Hume is credited as the founder of the organisation.

- On December 28, 1885, 72 social reformers, journalists and lawyers congregated for the first session of the INC at Gokuldas Tejpal Sanskrit College, Bombay.
- At that point, the aim of this group was not to demand independence from the ongoing

colonial rule but to influence the policies of the British government in favour of Indians.

**9) With reference to Atomic Energy Regulatory Board (AERB), consider the following statements:**

1. It was constituted by the President of India by exercising the powers conferred by the Atomic Energy Act of 1962.
2. The total number of members including the Chairman and Member-Secretary shall not exceed 10.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** The AERB was constituted in 1983, by the President of India by exercising the powers conferred by the Atomic Energy Act, 1962 to carry out certain regulatory and safety functions under the Act.

- The regulatory authority of AERB is derived from the rules and notifications promulgated under the Atomic Energy Act and the Environment (Protection) Act, 1986.
- The Mission of the AERB is to ensure the use of ionizing radiation and nuclear energy in India does not cause undue risk to the health of people and the environment.
- The total number of members including the Chairman and Member-Secretary shall not exceed five. The Board shall be responsible to the Atomic Energy Commission.
- The AERB shall have authority to administer the provisions of the Factories Act, 1948, the industrial safety for the units of Department of Atomic Energy (DAE) as per Section 23 of the Atomic Energy Act, 1962.

**10) With reference to the GNB1 Encephalopathy, consider the following statements:**



1. It is a kind of neurological disorder which affects individuals in the foetus stage.
2. A single nucleotide mutation is the reason for this disease.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** It is a kind of brain disease or neurological disorder which affects individuals in the foetus stage.

- A single nucleotide mutation in the GNB1 gene that makes one of the G-proteins, the "Gβ1 protein," causes this disease.
- Symptoms: Delayed physical and mental development, intellectual disabilities, and frequent epileptic seizures are among the early of the disease. Less than 100 cases of GNB1 Encephalopathy have been recorded worldwide.

**11) With reference to Lok Adalats, which of the following statements is correct?**

- (a) Lok Adalats have the jurisdiction to settle the matters at pre litigative stage and not those matters pending before any court
- (b) Lok Adalats have no jurisdiction in respect of any case or matter relating to an offence not compoundable under any law.
- (c) Every Lok Adalat consists of either serving or retired judicial officers only and not any other person
- (d) None of the statements given above is correct

**Ans (b)** Lok Adalat is a forum where the cases (or disputes) which are pending in a court or which are at pre-litigation stage (not yet brought before a court) are compromised or settled in an amicable manner.

- The institution of Lok Adalat has been given statutory status under the Legal Services Authorities Act, 1987.

The Lok Adalat shall have no jurisdiction in respect of any case or matter relating to an offence not compoundable under any law. In other words, the offences which are non-compoundable under any law fall outside the purview of the Lok Adalat

**12) Consider the following statements:**

1. Kalasa-Banduri Nala project involves building across Kalasa and Banduri, two tributaries of the Mahadayi river to divert water to the Ghataprabha river.
2. Mahadayi river rises in the Western Ghats, from the Mhadei Wildlife Sanctuary.

**Which of the given above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (d)** Kalasa-Banduri Nala project: Undertaken by the Government of Karnataka to improve drinking water supply to the Districts of Belagavi, Dharwad, and Gadag. It involves building across Kalasa and Banduri, two tributaries of the Mahadayi river to divert 7.56 TMC of water to the Malaprabha river.

Mahadayi river rises in the Western Ghats, from the Bhimgad Wildlife Sanctuary in Khanapur taluk of Karnataka's Belagavi district.

**13) Consider the following facts:**

It is a useful industrial compound found in many consumer products.

Its toxicity mainly results from the accumulation of its toxic metabolites.

Recently, it was reported that medicinal syrup containing this chemical caused the deaths of 18 children in Samarkand, Uzbekistan.



**The above given facts refers to which of the following?**

- (a) Methyl isocyanate
- (b) Benzoyl peroxide
- (c) Ethylene glycol
- (d) Sodium nitroprusside

**Ans (c)** Ethylene glycol is a useful industrial compound found in many consumer products. Examples include antifreeze, hydraulic brake fluids, some stamp pad inks, ballpoint pens, etc.

- Ethylene glycol's toxicity mainly results from the accumulation of its toxic metabolites. Ethylene glycol is a central nervous system (CNS) depressant that produces acute effects similar to those of ethanol. If glycerine, a key ingredient in cough syrup, is replaced with toxic industrial solvents diethylene glycol (DEG) or Ethylene Glycol (EG), the cough syrups become toxic

**14) Prajwala Challenge, recently seen in the news was launched by:**

- (a) NITI Aayog
- (b) Ministry of Rural Development
- (c) Ministry of Power
- (d) None

**Ans (b)** Recently, the Ministry of Rural Development under the Deendayal Antyodaya Yojana -National Rural Livelihoods Mission (DAY-NRLM) has launched the Prajwala Challenge.

Aim: To invite ideas, solutions and actions that can transform the rural economy this challenge has launched. This Mission is looking for ideas which are broadly categorised into

Focus on Women and the Marginalized section of the community, Localised Models, Sustainability, Cost Effective solutions, Multi-sectoral ideas and solutions etc.

**15) With reference to Vibrant Village Programme, consider the following statements:**

1. It has been announced in the Finance Minister's Budget Speech 2022.
2. It is aimed at enhancing infrastructure in villages along India's border with China, in states like Himachal Pradesh, Uttarakhand, and Arunachal Pradesh.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Vibrant Villages Programme (VVP) has been announced in the Finance Minister's Budget Speech 2022.

- VVP is aiming at enhancing infrastructure in villages along India's border with China, in states like Himachal Pradesh, Uttarakhand, and Arunachal Pradesh.
- Activities under the VVP include building infrastructure such as housing, tourist centres, road connectivity, providing decentralised renewable energy.
- Union Home Minister recently asked Border Security Force (BSF) to strengthen Vibrant Village Programme and ensure welfare programmes are implemented.

**16) With reference to the Brazil, consider the following statements:**

1. Brazil is not a founding member of the Union of South American Nations.
2. It is bounded by the Atlantic Ocean on the east, and borders all other countries in South America except Ecuador and Chile.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (b)** Brazil is the largest country in both South America and Latin America. Its capital is Brasília.



- It is bounded by the Atlantic Ocean on the east, and borders all other countries in South America except Ecuador and Chile.
- Brazil is a founding member of the United Nations, the G20, BRICS, Union of South American Nations, Mercosul etc.

**17) Which of the state is famous for making Siddipet Gollabamma Sari and Narayanpet Sari?**

- (a) Maharashtra
- (b) Andhra Pradesh
- (c) Odisha
- (d) Telangana

**Ans (d)** The second phase of the Sari Festival "VIRAASAT"- Celebrating 75 handwoven Saris of India will begin. It is organised by the Union Ministry of Textiles



**18) With reference to the Dexa scans, consider the following statements:**

1. Through Dexa tests, the trainers will be able to measure body fat percentage, lean muscle mass, water content and bone density.
2. It helps to understand where the fat is and whether the training methods are yielding the result.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2

(d) Neither 1 nor 2

**Ans (c)** Dexa scans were recommended to the BCCI and the National Cricket Academy (NCA) as far back as 2011

- Through Dexa tests, the trainers will be able to measure body fat percentage, lean muscle mass, water content and bone density.
- It helps to understand where the fat is and whether the training methods are yielding the result.
- Yo yo test: it is a "maximal aerobic endurance fitness test, involving running between markers placed 20 metres apart, at increasing speeds, until exhaustion."

**19) Consider the following statements.**

1. Schengen Area is a zone where there is highly restricted movement of people and goods.
2. Croatia is the crescent shaped country near the Adriatic Sea coastline.
3. The Pantanal is a natural region encompassing the world's largest tropical wetland area, located in Brazil.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (c)** The border-free Schengen Area guarantees free movement to more than 400 million EU citizens, along with non-EU nationals living in the EU or visiting the EU as tourists, exchange students, or for business purposes (anyone legally present in the EU). Recently, Croatia adopted the euro currency and enter Europe's passport-free Schengen zone after nearly a decade after joining the European Union.

**20) Non-nuclear aggression agreement is a bilateral agreement between**



- (a) United States and Russia
- (b) India and Pakistan
- (c) India and United States
- (d) India and China

**Ans (b)** The Non-nuclear aggression agreement is a bilateral and nuclear weapons control treaty between the two South Asian states, India and Pakistan, on the reduction (or limitation) of nuclear arms and pledged not to attack or assist foreign powers to attack on each's nuclear installations and facilities.

The treaty barred its signatories to carry out a surprise attack (or to assist foreign power to attack) on each other's nuclear installations and facilities. The treaty provides a confidence-building security measure environment and refrained each party from "undertaking, encouraging, or participating in directly or indirectly, any action aimed at causing destruction or damage to any nuclear installation or facility in each country". Starting in January 1992, India and Pakistan have annually exchanged lists of their respective military and civilian nuclear-related facilities.

**21) Consider the following statements regarding Angkor Wat Temple.**

1. Angkor Wat is a temple complex in Vietnam.
2. The temple is constructed in the Dravidian style and the sculptures depict episodes from the Ramayana and the Mahabharata.
3. It was transformed into a Buddhist temple towards the end of the 12th century.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 2, 3
- (c) 3 only
- (d) 1, 3

**Ans (b)** Angkor Wat is a temple complex in Cambodia and one of the largest religious

monuments in the world. It was originally constructed as a Hindu temple dedicated to the god Vishnu for the Khmer Empire, it was gradually transformed into a Buddhist temple towards the end of the 12th century.

- It was built by the Khmer King Suryavarman II in the early 12th century in Yaśodharapura (present-day Angkor).
- The temple is constructed in the Dravidian style and the sculptures depict episodes from the Ramayana and the Mahabharata

**22) Which of the following is the custodian UN agency for 21 Sustainable Development Goals (SDG) indicators?**

- (a) World Bank
- (b) UN Statistics Division
- (c) World Health Organization
- (d) Food and Agriculture Organization

**Ans (d)** FAO is the custodian UN agency for 21 SDG indicators and is a contributing agency for a further 5. In this capacity, FAO is supporting countries' efforts in monitoring the 2030 Agenda.

**23) With reference to the Asian Pacific Postal Union, consider the following statements:**

1. It is a specialized agency of the United Nations.
2. It is an intergovernmental organization of 32 member countries of the Asian-Pacific region.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Asian Pacific Postal Union (APPU) is an intergovernmental organization of 32



member countries of the Asian-Pacific region.

- It is the only Restricted Union of the Universal Postal Union (UPU) in the region, which is a specialized agency of the United Nations.

Goal: To extend, facilitate and improve postal relations between member countries and to promote cooperation in the field of postal services

**24) With reference to the heat dome, consider the following statements:**

1. It occurs when an area of low-pressure traps warm air over a region for an extended period.
2. Its formation is related to the behaviour of the jet stream.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (b)** A heat dome occurs when an area of high-pressure traps warm air over a region, for an extended period. The longer that air remains trapped, the more the sun works to heat the air, producing warmer conditions with every passing day.

- Heat domes generally stay for a few days but sometimes they can extend up to weeks, which might cause deadly heat waves. Moreover, when air sinks, it gets drier and further raises the temperature of the area

**25) With reference to the Archaeological Survey of India (ASI), consider the following statements:**

1. It was founded by British Army engineer Alexander Cunningham.
2. It works under the aegis of the Ministry of Culture.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** ASI: It was founded in 1861 by a British Army engineer Alexander Cunningham who is also known as the 'Father of Indian Archaeology'.

- It engages in archaeological research and conservation, and protection and preservation of ancient monuments and archaeological sites in the country.
- ASI regulates all archaeological activities conducted in the country through the provisions of the Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act), 1958. It also regulates the Antiquities and Art Treasure Act, of 1972

**26) Consider the following statements about National Beekeeping & Honey Mission (NBHM)**

1. It is a Central Sector Scheme.
2. It is implemented through the Central Silk Board.
3. It aims for the overall promotion & development of scientific beekeeping in India.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (c)** NBHM is a Central Sector Scheme, approved under the Aatma Nirbhar Bharat announcement, and implemented through National Bee Board (NBB).

- NBHM aims for the overall promotion & development of scientific beekeeping in the country to achieve the goal of 'Sweet



Revolution' which is being implemented through NBB.

- Under the scheme, the main thrust is given on awareness, capacity building/training, focus on women empowerment through beekeeping and setting up of requisite infrastructural facilities.

**27) Which of the following pairs is/are correctly matched?**

1. Masilum cattle – Meghalaya
2. Kathani cattle – Maharashtra
3. Sanchori – Kerala

**Select the correct answer using the code below:**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (a)** Purnathadi buffalo – Vidarbha region of Maharashtra.

- Kathani, a dual-purpose cattle, is also distributed in the region. It possesses the good draft ability and is suited to marshy land for paddy cultivation.
- Masilum is a small-sized but well-built and sturdy cattle of Meghalaya. Well adapted to the hill ecosystem, it is reared by the Khasi and Jaintia communities for sports, manure and socio-cultural festivals.
- Sanchori is found in the Jalore district of Rajasthan.

Of the new pig breeds, Manipuri Black is a native of Manipur, Banda is from Jharkhand and Wak Chambil is from the Garo hills of Meghalaya

**28) With reference to the Broadcasting Infrastructure and Network Development (BIND) Scheme, consider the following statements:**

1. It provides financial support for the infrastructure development of All India Radio (AIR) and Doordarshan (DD).
2. It is a central sector scheme.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Ministry of Information and Broadcasting: BIND scheme is a Central Sector Scheme which provides financial support for the infrastructure development of Prasar Bharati i.e. All India Radio (AIR) and Doordarshan (DD).

- It involves major upgradation of its facilities with better infrastructure which will widen its reach, including in the LWE.
- Another major priority area of the scheme is the development of high-quality content for both domestic and international audiences and ensuring the availability of diverse content by upgradation of the capacity of the DTH platform to accommodate more channels.
- Purchase of OB vans and digital upgradation of DD and AIR Studios to make them HD-ready will also be done as part of the project. The Scheme will increase coverage of AIR FM transmitters in the country to 66% by geographical area and 80% by population up from 59% and 68% respectively.

**29) What is Halteria, recently seen in news?**

- (a) A Virovere
- (b) An Invasive plant
- (c) A comet
- (d) Name of generative AI

**Ans (a)** The organisms which eat viruses are called virovore. It has been identified as an actual species of protist that feasts on viruses.



- These virus-eating species of protists which are their kingdom on the tree of life and are not an animal, plants, or fungi are now classified as Virovires.
- It is a species of Halteria; microscopic ciliates that populate freshwater worldwide.

**30) With reference to the Microplastics, consider the following statements:**

1. Primary microplastics are tiny particles designed for commercial use, such as cosmetics, as well as microfibers shed from clothing and other textiles, such as fishing nets.
2. Secondary microplastics are particles that result from the breakdown of larger plastic items, such as water bottles.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** There are two categories of microplastics: primary and secondary.

- Primary microplastics are tiny particles designed for commercial use, such as cosmetics, as well as microfibers shed from clothing and other textiles, such as fishing nets.
- Secondary microplastics are particles that result from the breakdown of larger plastic items, such as water bottles. This breakdown is caused by exposure to environmental factors, mainly the sun's radiation and ocean waves.

**31) With reference to marine biodiversity in India, what is special about "zebrafish", sometimes seen in the news?**

- (a) It is an arboreal fish that is only active during its breeding season, which lasts only a few weeks.
- (b) It has the ability to locate the precise location by comparing the magnetic fields of several locations.
- (c) It has one of the quickest known fish development rates.
- (d) It has the unique ability to repair heart muscle.

**Ans (d)** Zebrafish is a small (2-3 cm long) freshwater fish found in the tropical and subtropical regions. The fish is native to South Asia's Indo-Gangetic plains, where they are mostly found in the paddy fields and even in stagnant water and streams. The fish become adults at three months and survive 2-3 years in a laboratory condition. This fish's unique characteristics lie in its transparency during its embryonic stages, allowing observing all organs, including beating heart and blood circulation.

- A protein called Cellular communication network factor 2a (Ccn2a) found in the backbone of zebrafish that plays a positive role in disc maintenance and promotes regeneration in aged discs between vertebrae can have potential therapeutic implications to promote regeneration in degenerated human discs.

**32) Consider the following statements in respect of Trade Related Analysis of Fauna and Flora in Commerce (TRAFFIC):**

1. TRAFFIC is a bureau under the United Nations Environment Programme (UNEP).
2. The mission of TRAFFIC is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



**Ans (b)** Statement 1: It is a NGO, not a bureau under UNEP. TRAFFIC's partner organizations, WWF and IUCN. It is working globally on the Wildlife trade monitoring network.

It specializes in investigating and analysing wildlife trade trends, patterns, impacts and drivers to provide the leading knowledge base on trade in wild animals and plants

**33) With reference to the Y20 Summit, consider the following statements:**

1. The Y20 is the official youth engagement group for the G20 (Group of 20), the forum for the world's largest and most advanced economies.
2. India is hosting the Y20 summit for the first time.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** The Y20 is the official youth engagement group for the G20 (Group of 20), the forum for the world's largest and most advanced economies.

- The Y20 is a process which brings together young leaders from across the globe, to discuss and debate global challenges and agree policy recommendations they would like to see G20 leaders take forward.
- The list of policy recommendations is known as a communiqué, which is announced publicly at the Y20 Summit and presented to world leaders as part of the official G20 summit.  
India is hosting the Y20 summit for the first time

**34) With reference to India's Population Census, consider the following statements:**

1. In India the census was first started under British Viceroy Lord Mayo.
2. According to the Indian Constitution Census is a Union subject.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Census: It is a process of collecting, compiling, analyzing, evaluating, publishing and disseminating statistical data regarding the population at an interval of 10 years.

- In India, the census was first started under British Viceroy Lord Mayo in 1872 and the first synchronous census in India was held in 1881.
- Nodal Ministry: The decennial Census is conducted by the Office of the Registrar General and Census Commissioner, Ministry of Home Affairs.
- Census is conducted under the provisions of the Census Act, of 1948.  
The population census is a Union subject under Article 246 of the Indian Constitution

**35) With reference to the Sodium tetrafluoroborate consider the following statements:**

1. It is an electrolyte which forms white soluble rhombic crystals.
2. It is more soluble in organic solvents than water.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only



- (c) Both 1 and 2  
(d) Neither 1 nor 2

**Ans (a)** Sodium tetrafluoroborate ( $\text{NaBF}_4$ ): It is a salt that forms colourless or white water-soluble rhombic crystals and is soluble in water but less soluble in organic solvents. Scientists have introduced a new electrolyte called ( $\text{NaBF}_4$ ), which not only acts as an  $\text{N}_2$  carrier in the medium but also works as a full-fledged "co-catalyst" along with active material transition metal-doped nanocarbon ( $\text{MnN}_4$ ) to deliver high-yield of ammonia ( $\text{NH}_3$ ) at absolutely ambient experimental conditions

**36) Consider the following statements about Pradhan Mantri Vaya Vandana Yojana (PMVVY):**

1. It is a Pension Scheme exclusively for the senior citizens aged 60 years and above.
2. The Scheme can be purchased offline as well as online through Life Insurance Corporation (LIC) of India which has been given the sole privilege to operate this Scheme.
3. One can invest a maximum amount of ₹15 lakh under Pradhan Mantri Vaya Vandana Yojana (PMVVY) scheme.

**Which of the statements given above is/are correct?**

- (a) 1 only  
(b) 1 and 2 only  
(c) 2 and 3 only  
(d) 1, 2 and 3

**Ans (d)** It is a Pension Scheme exclusively for the senior citizens aged 60 years and above. Maximum Entry Age: No limit. Aadhar has been made mandatory to avail the benefit of the scheme.

- The Scheme can be purchased offline as well as online through Life Insurance Corporation (LIC) of India which has been given the sole privilege to operate this Scheme.
- Maximum investment

- One can invest a maximum amount of ₹15 lakh under Pradhan Mantri Vaya Vandana Yojana (PMVVY) scheme. The tenure of the policy is set at 10 years.
- Senior citizens can draw a minimum pension of Rs. 1,000 per month depending on the amount invested in the scheme. The maximum pension amount is limited at Rs. 10,000 per month.

**37) In visible light,**

1. Oxygen produces green and red light.
2. Hydroxyl (OH) molecules produce red light.
3. Sodium produces a sickly yellow.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

**Ans (d)** Airglow: The glow produced by atoms and molecules in the atmosphere is called airglow.

- The distinct colours of airglow are the result of atoms and molecules releasing particular amounts of energy (quanta) in the form of light.
- In visible light,
  - Oxygen produces green and red light.
  - Hydroxyl (OH) molecules produce red light.
  - Sodium produces a sickly yellow.
  - Nitrogen does not contribute much to airglow

**38) With reference to the Astro tourism, consider the following statements:**

1. Astro tourism is an experiential travel trend, that combines travellers interest in astronomy, night sky along with the love for exploring new remote locations.
2. National Council of Science Museums in association with Nehru Memorial Museum and Library organised Astro Tourism - A Sky Gazing event at Delhi's India Gate recently.



**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Astro tourism is an experiential travel trend, that combines travellers interest in astronomy, night sky along with the love for exploring new remote locations.

- It also boosts nature-based travelling, tapping on growing interest of tourists to discover destinations that offer the luxury of being close to nature in a comfortable accommodation.

**39) With reference to the online gaming, consider the following statements:**

1. Gambling is the subject of the "State list" under the 7th Schedule of the constitution.
2. Online gaming regulated by Ministry of Electronics and Information Technology but different states have their own laws related to permission within the state.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Gambling has been defined under the Old Law "Public Gambling Act 1867".

- It is the subject of the "State list" under the 7th Schedule of the constitution.
- Online gaming regulated by Ministry of Electronics and Information Technology but different states have their own laws related to permission within the state
- e-Sports: These are video games that were played privately or on consoles in video game stores in the 1990s, but are currently played online in a structured manner

between professional players, either individually or in teams.

- Fantasy sports: These are games in which the player selects a team of real sports players from several teams and earns points based on how well the players perform in real life. For example,
- Online casual games: These could be skill-based, where the outcome is heavily impacted by mental or physical skill or chance-based, where the outcome is heavily influenced by some randomised activity, such as rolling a die.

**40) With reference to the American foulbrood disease, consider the following statements:**

1. It is caused by the spore-forming bacterium *Paenibacillus larvae*.
2. It is largely infecting bovine animals.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** It is a fatal bacterial disease which affects insects and it is caused by the spore-forming bacterium *Paenibacillus larvae*. Infected honeybee broods usually die at the pre-pupal or pupal stage. The disease cannot be cured, meaning that the destruction of infected colonies and hives or irradiation of infected material is the only way to manage AFB. Recently, a new species of endemic honeybee named *Apis karinjodian* has been discovered in the Western Ghats after a gap of more than 200 years. Common Name: Indian black honeybee. IUCN Red List: Near Threatened (NT)

**41) With reference to the Ottanthullal, consider the following statements:**



1. It is a recite-and-dance art form of Kerala.
2. It was introduced by the famous Malayalam poet Kunchan Nambiar.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** It is a recite-and-dance art form of Kerala, which was introduced in the 18th century by the famous Malayalam poet Kunchan Nambiar (1705 - 1770).

- It is famous for its humour and social satire and is marked by its simplicity.
- It follows the classical principles of Natyasasthra
- It is enacted into three separate versions: Ottanthullal, Seethankan thullal, Parayan thullal
- The costume and makeup of the performer are similar to that of a Kathakali artist. The Thullal performer is supported by a singer who repeats the verses and is accompanied by an orchestra of mridangam or thoppimaddalam (percussions) and cymbals

**42) With reference to the Mercury, consider the following statements:**

1. It is a naturally occurring element that is found in air, water and soil.
2. At threshold temperature, solid mercury offers resistance to the flow of electric current.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** In 1911, Dutch physicist Heike Kamerlingh Onnes discovered superconductivity in mercury. He found that at a very low temperature, called the threshold temperature, solid mercury offers no resistance to the flow of electric current.

- Scientists later classified mercury as a conventional superconductor because its superconductivity could be explained by the concepts of the Bardeen-Cooper-Schrieffer (BCS) theory.
- In BCS superconductors, vibrational energy released by the grid of atoms encourages electrons to pair up, forming so-called Cooper pairs. These Copper pairs can move like water in a stream, facing no resistance to their flow, below a threshold temperature

**43) With reference to the Fire and Fury Corps, consider the following statements:**

1. The areas of the Western and Eastern Ladakh come under its responsibility.
2. The world's highest battleground, Siachen Brigade, comes under this Corps.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** The Corps handles some of the most sensitive frontiers and battlefields in the world.

- The areas of the Western and Eastern Ladakh also come under its responsibility. The world's highest battleground, Siachen Brigade, comes under this Corps.

**44) With reference to the Meghalaya's Living Root Bridge, consider the following statements:**



1. Meghalaya is known for its living root bridges, locally known as jingkieng jri.
2. They are on the UNESCO's World Heritage sites.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** Meghalaya is known for its living root bridges, locally known as jingkieng jri.

- They are on the tentative list of UNESCO's World Heritage sites.
- A living root bridge is like a suspension bridge formed by guiding the pliable roots of the rubber fig tree (*Ficus elastica*) across a stream or river and allowing the roots to grow and strengthen over time. They are common in the southern part of the Northeast Indian state of Meghalaya

**45) With reference to the Aspirational Districts Programme, consider the following statements:**

1. It was launched in 2018 to transform districts that have shown relatively lesser progress in key social areas.
2. The ranking of these districts is based on 5 broad socio-economic themes including Financial Inclusion & Skill Development.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** Aspirational Districts Programme: It was launched in 2018 and aims to transform

districts that have shown relatively lesser progress in key social areas.

- 3C Strategy: Convergence (of Central & State Schemes), Collaboration (of Central, State level 'Prabhari' Officers & District Collectors), Competition
- 5 broad socio-economic theme: Health & Nutrition (30%), Education (30%), Agriculture & Water Resources (20%), Financial Inclusion & Skill Development (10%), Infrastructure (10%)
- The programme will cover 500 districts across 31 states and Union Territories initially.
- At Government of India level, programme is anchored by NITI Aayog.

**46) Substantive equality adopted by some countries, means that**

- (a) All people must be equally treated at all times
- (b) Absolute equality in all spheres and to every person.
- (c) Providing equal opportunities for disadvantaged and marginalized groups
- (d) Abolition of all special rights and privileges

**Ans (c)** Substantive equality is a fundamental aspect of human rights law that is concerned with equitable outcomes and equal opportunities for disadvantaged and marginalized people and groups in society

**47) The term demographic trap is used by demographers to describe the combination of**

1. Increasing Mortality
2. High Fertility rate
3. Declining mortality
4. Sub-replacement level fertility rates

**Select the correct answer code:**

- (a) 1, 3
- (b) 1, 4



(c) 2, 3

(d) 1, 2

**Ans (c)** The term demographic trap is used by demographers "to describe the combination of high fertility (birth rates) and declining mortality (death rates) in developing countries, resulting in a period of high population growth rate (PGR)."

**48) Consider the following statements regarding World Food Programme (WFP).**

1. World Food Programme is the food assistance program administered by International Food Policy Research Institute.
2. It procures food grains from several countries to face food security challenges.
4. The operations of World Food Programme are entirely funded through the voluntary contributions of donor governments, institutions, corporations and individuals.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 2, 3
- (c) 3 only
- (d) 1, 3

**Ans (b)** The World Food Programme (WFP) is the food-assistance branch of the United Nations. It is the world's largest humanitarian organization, saving lives in emergencies and using food assistance to build a pathway to peace, stability and prosperity for people recovering from conflict, disasters and the impact of climate change.

- The operations are entirely funded through the generous voluntary contributions of donor governments, institutions, corporations and individuals.  
WFP is an executive member of the United Nations Sustainable Development Group, a

consortium of UN entities that aims to fulfil the 17 Sustainable Development Goals (SDG), with a priority on achieving SDG 2 for "zero hunger" by 2030

**49) Consider the following statements.**

1. The National Mission for Clean Ganga (NMCG) exercises powers under the Environment (Protection) Act, 1986.
2. NMCG has powers to issue directives regulating mining activities on the Ganga river banks and activities like the immersion of idols.
3. Ganga Praharis are the trained volunteers who encourage community participation in cleaning the river Ganga.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2 and 3

**Ans (d)** In 2016, the government issued a notification to authorise the National Mission for Clean Ganga (NMCG) to exercise powers under the Environment (Protection) Act, 1986. As a result, NMCG officials regularly conducted surprise checks on sewage treatment plants (STPs) and issued notices/directives to authorities wherever required. NMCG also issued directives regulating mining activities on river banks, prohibiting encroachment and regulating activities like the immersion of idols.

To encourage community participation in cleaning the river, an awareness campaign is regularly carried out in cities, towns and villages alongside Ganga through a newly-established community force called "Ganga Praharis

**50) Consider the following statements regarding Universal Periodic Review (UPR).**



1. Universal Periodic Review (UPR) involves a review of the human rights records of all UN Member States.
2. It is designed to ensure equal treatment for every country when their human rights situations are assessed.
3. It is a State-driven process, under the auspices of the Human Rights Council.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (d)** The Universal Periodic Review (UPR) is a unique process which involves a review of the human rights records of all UN Member States. The UPR is a State-driven process, under the auspices of the Human Rights Council, which provides the opportunity for each State to declare what actions they have taken to improve the human rights situations in their countries and to fulfil their human rights obligations.

- As one of the main features of the Council, the UPR is designed to ensure equal treatment for every country when their human rights situations are assessed. The ultimate aim of this mechanism is to improve the human rights situation in all countries and address human rights violations wherever they occur. Currently, no other universal mechanism of this kind exists.

**51) Consider the following statements regarding Aerosols.**

1. Aerosols are solid particles suspended in a gaseous environment.
2. Aerosols are only situated in the lower layers of the atmosphere (< 1.5 km) since aerosol sources are located on the terrestrial surface.

3. They affect the atmospheric chemical composition.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 2
- (c) 1, 3
- (d) 2, 3

**Ans (c)** Aerosols are defined as a combination of liquid or solid particles suspended in a gaseous or liquid. In the atmosphere, these particles are mainly situated in the low layers of the atmosphere (< 1.5 km) since aerosol sources are located on the terrestrial surface.

- certain aerosols can still be found in the stratosphere, especially volcanic aerosols ejected into the high-altitude layers.
- The origin of atmospheric aerosols is either natural or the result of anthropogenic activities. They affect the atmospheric chemical composition. They can reduce visibility.

**52) Consider the following statements regarding Environmental enteropathy.**

1. Environmental enteropathy is a disorder of chronic lungs inflammation.
2. The disorder is intricately connected to the poor environmental conditions.
3. It impacts the normal growth and cognitive development of children, leading to anaemia, stunting, and wasting.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (c)** In simple terms, environmental enteropathy is a disorder of the intestine which prevents the proper absorption of



nutrients, rendering them effectively useless.

- Since the disorder was intricately connected to the poor environmental conditions its victims lived in, it came to be called “environmental enteropathy”. Diarrhoeal diseases, intestinal parasite infections and environmental enteropathy together impact the normal growth and cognitive development of children, leading to anaemia, stunting, and wasting

**53) With reference to the e-Sanjeevani, consider the following statements:**

1. It was launched by the then Ministry of Communications and Information Technology, Government of India, in 2009.
2. Centre for Development of Advanced Computing (C-DAC) Mohali is the creator of eSanjeevani.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (c)** It is a web-based comprehensive telemedicine solution, launched by the then Ministry of Communications and Information Technology, Government of India, in 2009.

- Created by: Centre for Development of Advanced Computing (C-DAC) Mohali
- eSanjeevani AB-HWC: The doctor-to-doctor telemedicine platform, being implemented at all the Health and Wellness Centres (HWCs) in the country under Ayushman Bharat (AB) Scheme of Government of India.
- eSanjeevani OPD: It is the Patient-to-Doctor remote consultation services rolled out in 2020 amid the first lockdown imposed to fight Covid-19 pandemic, while the Outpatient Departments (OPDs) in the country were closed.

**54) With reference to the Bhitarkanika National Park, consider the following statements:**

1. It is home to the largest congregation of endangered Salt Water Crocodiles.
2. The river Vamsadhara passes through this national park.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (a)** Bhitarkanika National Park is located in the Kendrapara district of Odisha.

- It is India's second-largest mangrove ecosystem after the Sunderbans.
- This National Park is a network of creeks and canals which are inundated with waters from rivers Brahmani, Baitarani, Dhamra and Patasala forming a unique ecosystem.
- It is home to the largest congregation of endangered Salt Water Crocodiles in the country.

The Gahirmatha Beach which forms the boundary of the sanctuary in the east is the largest colony of the Olive Ridley Sea Turtles

**55) With reference to the Young Professionals Scheme, consider the following statements:**

1. This scheme is signed between India and Japan.
2. Under this scheme degree-holding citizens aged between 18 and 30 to live and work in each other's countries for two years.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2



(d) Neither 1 nor 2

**Ans (b)** Recently, India and the United Kingdom signed and exchanged letters for Young Professionals Scheme in London.

- It was conceived as part of an India-U.K. Migration and Mobility MoU signed in May 2021 and was announced in November at the G20 summit in Bali.
- It will permit up to 3,000 of their degree-holding citizens aged between 18 and 30 to live and work in each other's countries for two years.
- The programme will be reciprocal, also allowing UK professionals in the same position to participate in a professional exchange by living and working in India

**56) Consider the following statements regarding Green Bonds.**

1. Green bonds can be issued by any sovereign entity, inter-governmental groups or corporates.
2. In India, the Sovereign Green Bonds are issued by the Ministry of Environment, Forest and Climate Change(MoEFCC).
3. In India, the proceeds raised from Sovereign Green Bonds can be used to finance or refinance expenditure for various green projects, including in renewable energy, clean transportation, climate change adaptation, pollution and prevention control and green buildings.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (b)** The Reserve Bank of India (RBI) announced that it will, for the first-time, issue Sovereign Green Bonds (SgrBs) worth Rs 16,000 crore. Green bonds are bonds issued by any sovereign entity, inter-

governmental groups or alliances and corporates with the aim that the proceeds of the bonds are utilised for projects classified as environmentally sustainable.

The issuance of the Sovereign Green Bonds will help the Indian government in tapping the requisite finance from potential investors for deployment in public sector projects aimed at reducing the carbon intensity of the economy

**57) Consider the following statements.**

1. The head of the Municipal Corporation in Delhi is the mayor, who is a nominal head and has very limited powers.
2. It is the Standing Committee that effectively manages the Municipal corporation of Delhi, with functions such as giving financial approval to projects, finalising and implementing policies.
3. Municipal Corporation of Delhi (MCD) standing committee has a chairperson and a deputy chairperson, who is elected from among the standing committee members.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 1, 2, 3
- (d) 2, 3

**Ans (c)** The head of the Municipal Corporation is the mayor — but only in name. A mayor is a nominal head of the corporation and has very limited powers, such as calling meetings of the house. It is the Standing Committee that effectively manages the corporation, with functions such as giving financial approval to projects, discussing, finalising and implementing policies.

- It has 18 members. The committee has a chairperson and a deputy chairperson, who is elected from among the standing committee members. Having a clear



majority in the standing committee is crucial for any political party to have control of policy and financial decisions.

**58) Consider the following statements regarding Silicosis.**

1. Silicosis is part of the pneumoconiosis family of diseases, described as an occupational disease due to dust exposure.
2. They are incurable, cause permanent disability and are totally preventable by available control measures and technology.

**Which of the above statements is/are incorrect?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (d)** Rajasthan — with the top-most share of over 17% in value of mineral production in the country, was the first to notify silicosis as an 'epidemic' in 2015, under the Rajasthan Epidemic Diseases Act, 1957.

Silicosis is part of the pneumoconiosis family of diseases, described by the policy as occupational diseases due to dust exposure... are incurable, cause permanent disability and are 'totally preventable by available control measures and technology'

**59) Consider the following statements.**

1. The political parties are required to share with the Election Commission of India, the donor details of voluntary donations made above ₹20,000 to political parties.
2. An amendment to the Representation of the People Act by the Finance Act, 2017, made it mandatory for political parties to declare funds collected using electoral bonds.
3. In recent years, the electoral bonds' share constituted more than 50% of the national and regional parties' total incomes.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 1 only
- (d) 2, 3

**Ans (b)** The ADR classifies income of political parties into two major types — known and unknown. The known sources of income are further classified into two types — voluntary donations made above ₹20,000 whose donor details are submitted to the ECI and "other sources of known income" such as sale of movable and immovable assets, etc.

- The unknown sources include donations below ₹20,000 via electoral bonds, sale of coupons, etc., for which the details of donors are not available for the public. An amendment to the Representation of the People Act by the Finance Act, 2017, created a provision to exempt parties from declaring funds collected using electoral bonds.
- Also, the electoral bonds' share formed 57% and 64% of the national and regional parties' total incomes in the FY19-FY21 period, respectively.

**60) Which of the following statements are correct?**

- 1) Ganga Vilas will travel around 3,200 km in 51 days to reach Dibrugarh in Assam via Bangladesh
- 2) It will sail across 27 river systems in India and Bangladesh.

- (a) 1 only
- (b) 2 only
- (c) Both
- (d) None

**Ans (c)** it will cover 5 states: Bihar, Jharkhand, West Bengal, Dhaka, Assam.





61) What is the process by which warm surface water sinks and is replaced by colder, deeper water in the global overturning circulation?

- (a) Convection
- (b) Upwelling
- (c) Advection
- (d) Thermohaline circulation

**Ans (d)** Thermohaline circulation refers to the process by which water sinks in the high latitudes due to its high density caused by low temperatures and high salinities, and then spreads out and rises in the lower latitudes, where it warms and evaporates, becoming less dense. This process, also known as the global ocean conveyor belt, is a major component of the global overturning circulation.

62) Buckingham canal is situated on:

- (a) Kalinga Coast
- (b) Malabar Coast
- (c) Coromandal Coast
- (d) Kutch Coast

**Ans (c)**

63) Consider the following statements.

1. Article 176 of the Constitution of India requires the Governor to mandatorily address the Members of legislature at the commencement of the first session of each year.
2. The Governor's address under Article 175 is not a mandatory address unlike under Article 176.
3. Article 176 requires a discussion on the matters contained in the Governor's address.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2 and 3

**Ans (d)** Article 176 of the Constitution requires the Governor to mandatorily address the Members of legislature at the commencement of the first session of each year and to inform them of the causes of its summons. Clause two says that the legislature will discuss the matters referred to in such an address.

Article 175 which says that the Governor may address the legislature and for that purpose require the attendance of the



members. The Governor's address under Article 175 is not a mandatory address unlike under Article 176. Article 175 does not speak about any discussion of the content of such an address; but Article 176 requires a discussion on the matters contained in the Governor's address.

**64) Consider the following statements regarding the National Digital University (NDU):**

1. NDU will offer only online courses from its partner institutes.

2. NDU will allow students to pursue multiple courses at a time.

3. Only public universities are allowed as partner institutes of NDU.

**Which of the statements given above is /are not correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (a)** The Central Government in its Budget 2022-23 announced the establishment of a digital university that provides access to students for world-class quality universal education with personalized learning experiences at their doorsteps.

- The institution will function under a hub-and-spoke model, which is where one product is delivered to various stakeholders from a central location.
- The digital content for various courses will be hosted on the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platform.

- The IT and administrative services will be provided through the government's Samarth portal.
- The university will offer exclusively online courses from its partner institutes, which could be both private and public universities, so far as they follow the NDU's model. The students can opt for certificate, diploma, or degree courses.

**65) Katarniaghat Wildlife Sanctuary (KWS) recently seen in news, lies in which state?**

- (a) Himachal Pradesh
- (b) Uttar Pradesh
- (c) Assam
- (d) Odisha

**Ans (b)** It is situated in the Upper Gangetic plain falling in the Terai of Bahraich district of Uttar Pradesh. It is part of Dudhwa Tiger Reserve Lakhimpur kheri. The Katarniya Ghat Forest provides strategic connectivity between tiger habitats of India and Nepal

**66) Consider the following statements regarding Mahadayi river.**

- 1. Mahadayi originates from the Bhimgad Wildlife Sanctuary.
- 2. Kalasa and Banduri are the tributaries of the Mahadayi river.
- 3. The river flows in the states of Karnataka, Goa and Maharashtra.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (d)** Mahadayi originates inside the Bhimgad Wildlife Sanctuary in the Belagavi district of Karnataka and flows into the Arabian Sea in Goa. The river flows in the states of Karnataka, Goa and Maharashtra.



Kalasa and Banduri are the two tributaries of the Mahadayi river

**67) Consider the following statements regarding United Nations Educational, Scientific and Cultural Organization (UNESCO)**

1. UNESCO is a specialized agency of the United Nations (UN), that seeks to build peace through international cooperation in Education, the Sciences and Culture.
2. It is also a member of the United Nations Sustainable Development Group (UNSDG).
3. To be a member of UNESCO, the country must be a member of United Nations (UN).

**Which of the above statements is/are correct?**

- (a) 1, 2  
(b) 1 only  
(c) 1, 3  
(d) 2, 3

**Ans (a)** It is a specialized agency of the United Nations (UN). It seeks to build peace through international cooperation in Education, the Sciences and Culture.

- It is also a member of the United Nations Sustainable Development Group (UNSDG), a coalition of UN agencies and organizations aimed at fulfilling the Sustainable Development Goals (SDGs).
- UNESCO's Headquarters are located in Paris. Three UNESCO member states are not UN members: Cook Islands, Niue, and Palestine. While three UN member states (Israel, Liechtenstein, United States) are not UNESCO members

**68) Consider the following statements regarding Solar Energy Corporation of India Ltd. (SECI).**

1. Solar Energy Corporation of India Ltd. (SECI) is the only Central Public Sector Undertaking (PSU) dedicated to the solar energy sector.

2. It is established to facilitate the implementation of the National Solar Mission (NSM).
3. It has power-trading licence and is active in this domain through trading of solar power from projects set up under the schemes being implemented by it.

**Which of the above statements is/are correct?**

- (a) 1, 2  
(b) 1, 3  
(c) 2, 3  
(d) 1, 2, 3

**Ans (d)** Solar Energy Corporation of India Ltd. (SECI) is a company of the Ministry of New and Renewable Energy, Government of India, established to facilitate the implementation of the National Solar Mission (NSM). It is the only Central Public Sector Undertaking (PSU) dedicated to the solar energy sector.

- The company is responsible for implementation of a number of government schemes, major ones being the VGF schemes for large-scale grid-connected projects under NSM, solar park scheme and grid-connected solar rooftop scheme.
- The company also has a power-trading licence and is active in this domain through trading of solar power from projects set up under the schemes being implemented by it.

**69) Consider the following statements regarding Annual Status of Education Report (ASER).**

1. ASER is a nationwide household survey that covers all districts in India.
2. It estimates for schooling and basic learning for every State in India.
3. Since its inception, ASER has measured foundational skills in reading and arithmetic.

**Which of the above statements is/are correct?**



- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans (c)** After a gap of four years, the Annual Status of Education Report (ASER) report for 2022 was recently released. This nationwide household survey that covers all rural districts in the country generates estimates for schooling and basic learning for every State in India.

Since its inception, ASER has measured foundational skills in reading and arithmetic. The highest reading task on the ASER tool is reading a text at Grade II level of difficulty. In mathematics, the highest level is a numerical three-digit by one-digit division problem, usually expected of children in standard four or so. The assessment is done one on one with each sampled child in the household. The child is marked at the highest level that she/he can comfortably reach. The same tasks are used for all children aged 5 years to 16 years

**70) Consider the following statements regarding revised Samagra Shiksha Scheme.**

1. Samagra Shiksha scheme is an integrated scheme for education covering from pre-school to post graduation.
2. The scheme has been aligned with National Education Policy 2020.
3. NIPUN Bharat mission has been taken out from the revised Samagra Shiksha Scheme.

**Which of the above statements is/are correct?**

- (a) 2, 3
- (b) 1, 2
- (c) 2 only
- (d) 1, 2, 3

**Ans (c)** The Samagra Shiksha scheme is an integrated scheme for school education covering the entire gamut from pre-school to class XII. The scheme treats school

education as a continuum and is in accordance with Sustainable Development Goal for Education (SDG-4). The scheme not only provides support for the implementation of the RTE Act but has also been aligned with the recommendations of NEP 2020. NIPUN Bharat, a National Mission on Foundational Literacy and Numeracy to ensure that every child achieves the desired learning competencies in reading, writing and numeracy at the end of grade III and not later than grade V is launched under the Samagra Shiksha scheme

**71) What is the process used to convert natural gas to LNG?**

- (a) Compression
- (b) Cooling
- (c) Combustion
- (d) Distillation

**Ans (b)** LNG is natural gas reduced to a liquid state (liquefaction) through intense cooling to around -161 degrees Celsius (-259 Fahrenheit).

- It is constituted almost wholly of methane — a potent greenhouse gas and can be transported around the world by ship.
- This liquid gas is 600 times smaller than the original volume and is half the weight of water.

After arriving at its destination, the cargo is regasified in a floating terminal and redistributed through pipelines

**72) Consider the following statements about Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):**

1. It is a Central Sector Scheme with 100% funding from the Government of India.
2. Under the scheme, the Centre transfers an amount of Rs 6,000 per year, in three equal installments, directly into the bank accounts of all landholding farmers irrespective of the size of their land holdings.



3. It is being implemented by the Ministry of Agriculture and Farmers Welfare.

**Which of the statements given above is/are correct?**

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

**Ans (d)** Under the scheme, the Centre transfers an amount of Rs 6,000 per year, in three equal instalments, directly into the bank accounts of all landholding farmers irrespective of the size of their land holdings. It was launched in February 2019.

- It is a Central Sector Scheme with 100% funding from the Government of India.
  - It is being implemented by the Ministry of Agriculture and Farmers Welfare.
- The entire responsibility of identification of beneficiary farmer families rests with the State / UT Governments

**73) Consider the following statements.**

1. Exoplanets are planets that orbit other stars and are beyond our solar system.
2. Exoplanets can be gas giants bigger than Jupiter or as small and rocky as Earth.
3. One of the objectives of National Aeronautics and Space Administration's (NASA) Lucy mission is to discover new exoplanets.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 2
- (c) 1, 3
- (d) 2, 3

**Ans (b)** NASA announced that the James Webb Space Telescope has discovered its first new exoplanet. Researchers have labelled the planet as LHS 475 b, and it's roughly the same size as Earth. Located just 41 light-years away, the planet orbits very

close to a red dwarf star and completes a full orbit in just two days.

- Exoplanets are planets that orbit other stars and are beyond our solar system. According to NASA, to date, more than 5,000 exoplanets have been discovered. Scientists believe that there are more planets than stars as each star has at least one planet orbiting it.
- 'Lucy' Mission: This is NASA's first mission to explore the Jupiter Trojan asteroids.
- It is a solar-powered mission.

**74) Consider the following statements.**

1. In India, the Census data is used for delimitation of constituencies and for determining the quantum of reservation for Scheduled Castes and Scheduled Tribes.
2. The Constitution of India specifies about the periodicity of the census.
3. Apart from the population count, the Census has also been providing data on population characteristics, housing and amenities.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1 only
- (c) 1, 3
- (d) 1, 2, 3

**Ans (c)** The Constitution talks about the use of Census data for delimitation of constituencies and for determining the quantum of reservation for Scheduled Castes and Scheduled Tribes. However, it does not say what should be the periodicity of the census. The Census Act, 1948, which predates the Constitution, provides the legal background for several activities relating to the Census without mentioning anything about its periodicity. It says, "The Central Government may, declare its intention of taking a census..., whenever it may consider it necessary or desirable so to do, and



thereupon the census shall be taken". This provision puts the onus of deciding when to conduct a Census on the executive. This is unlike the position in several countries such as the U.S. and Japan where the Constitution or the Census law mandates a Census with defined periodicity.

**75) Amrabad Tiger Reserve is located in which of the following state?**

- (a) Telangana
- (b) Bihar
- (c) Uttar Pradesh
- (d) Kerala

**Ans (a)** The Amrabad Tiger Reserve which is part of the Nallamala Forest track is home to the largest number of Tigers in Telangana State. The hilly terrain of this Tiger Reserve with deep valleys and gorges forms the catchment of the Krishna River. Major reservoirs like the Srishailam Dam and Nagarjunsagar Dam are fed by the river Krishna and its several perennial streams that originate in the Tiger Reserve

**76) What are the Three Universal Truths in Buddhism?**

- (a) The Three Jewels
- (b) The Three Bodies of the Buddha
- (c) The Three Marks of Existence
- (d) The Three Vehicles of Buddhism

**Ans (c)** The Three Universal Truths, also known as the Three Marks of Existence, are impermanence, suffering, and non-self. These truths are said to reflect the nature of reality and help to understand the nature of existence and how to end suffering.

More simply put, suffering exists; it has a cause; it has an end; and it has a cause to bring about its end

**77) Which of the following is NOT a characteristic of Charaideo Moidams in India?**

- (a) They are underground burial chambers

- (b) They are made of stone and brick
- (c) They are located in the state of Assam
- (d) They are typically used for cremation ceremonies

**Ans (d)** Charaideo Moidams are a unique feature of the Ahom culture in Assam, India. They are underground burial chambers made of stone and brick, and were used to bury the royalty and nobility of the Ahom kingdom. They are considered to be a significant architectural and cultural heritage of the region

**78) Consider the following statements regarding prepaid payment instruments (PPIs).**

1. Prepaid payment instruments (PPIs) are payment instruments that facilitate the buying of goods and services, including the transfer of funds and remittances, against the value stored within the instrument.
2. PPIs are in the form of smart cards, mobile wallets and magnetic chips.
3. As per the regulations, NBFCs cannot issue PPIs.

**Which of the above statements is/are correct?**

- (a) 1, 3
- (b) 1 only
- (c) 2, 3
- (d) 1, 2

**Ans (d)** The RBI defines prepaid payment instruments (PPIs) as payment instruments that facilitate the buying of goods and services, including the transfer of funds, financial services, and remittances, against the value stored within or on the instrument. PPIs are in the form of payment wallets, smart cards, mobile wallets, magnetic chips, vouchers, etc.

As per the regulations, banks and NBFCs can issue PPIs



**79) Match List 1 with List 2 and select the correct answer code:**

List 1 (Lake)	List 2 (State)
Vembanad	1. Sikkim
Khajjiar	2. Tamil Nadu
Kaliveli	3. Himachal Pradesh
Khecheopalri	4. Kerala

**Select the correct answer code:**

- (a) 4 3 2 1
- (b) 4 3 1 2
- (c) 3 4 1 2
- (d) 3 4 2 1

**Ans (a)**

**80) Consider the following statements.**

- Contract Farming is defined under State List of the Seventh Schedule in constitution of India.
- Contract Farming is carried out based on a pre-harvest agreement between buyers and producers.
- In India, 100% FDI is permitted under the automatic route in the food-processing sector.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 2
- (c) 2, 3
- (d) 1, 2, 3

**Ans (c)** Contract Farming can be carried out based on a pre-harvest agreement between buyers and producers. It is defined under Concurrent List of the Seventh Schedule of constitution; however, Agriculture is under State list. 100% FDI is permitted under the automatic route in the food-processing sector.

**81) Consider the following statements about the Indus Waters Treaty (IWT).**

- It is a water-distribution treaty between India and Pakistan, brokered by the United States of America.
- The treaty allows India to use the western river waters for limited irrigation use and unlimited non-consumptive use for such applications as power generation.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans (b)** IWT is a water-distribution treaty between India and Pakistan, brokered by the World Bank (WB), to use the water available in the Indus River and its tributaries. The Treaty gives control over the waters of the three "eastern rivers" – the Beas, Ravi and Sutlej (BRS)- to India, while control over the waters of the three "western rivers" – the Indus, Chenab and Jhelum -has been given to Pakistan.

- India has about 20% of the total water carried by the Indus system while Pakistan has 80%.
- The treaty allows India to use the western river waters for limited irrigation use and unlimited non-consumptive use for such applications as power generation.
- The dispute redressal mechanism provided under the IWT is a graded 3-level mechanism.

Under the IWT, whenever India plans to start a project, it has to inform Pakistan. The concerns have to be cleared at the levels of the Indus Commissioners → Neutral Expert → Court of Arbitration, in a graded manner

**82) In marine ecosystems, what function do kelp forests serve?**

- They provide food for herbivores
- They serve as breeding grounds for fish



3. They help regulate ocean currents

**Select the correct answer using the code below:**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (d)** Kelp Forest: They are underwater ecosystems formed in shallow water by the dense growth of several different species. Kelp can also persist at lower latitudes, aided by cool water upwelling or in deep-water refugia where they are protected by thermocline (transition layer between the warmer surface water and the cooler deep water).

Keystone Species: They provide underwater habitats to hundreds of species and thus have great ecological and economic value

**83) Consider the following statements about Kuno National Park:**

- 1. It was proposed as a possible site for cheetah reintroduction in India.
- 2. It is part of the Khathiar-Gir dry deciduous forests ecoregion.
- 3. The Chambal river flows through the Kuno national park from South to North.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans (a)** Kuno National Park is a national park and Wildlife Sanctuary in Madhya Pradesh, India. It derives its name from Kuno River. India has signed an agreement with South Africa to translocate 12 cheetahs (seven male and five female) to the Kuno Palpur National Park (KNP) in Madhya Pradesh

**84) Consider the following statements.**

- 1. In some states, Basmati rice is procured by the Government at Minimum Support Price (MSP).
- 2. Basmati rice cultivation is largely dependent on rainwater as it takes place during the main monsoon season.
- 3. More than one state in India have Geographical Indication (GI) tag for Basmati rice.

**Which of the above statements is/are correct?**

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans (c)** Paddy is procured by the Union government on MSP for distribution under the Public Distribution System. Basmati is neither procured by the government nor has any fixed price. It is procured by traders and exporters as Indian Basmati has large demand abroad.

- Basmati cultivation, is largely dependent on rainwater as it takes place during the main monsoon season. Basmati cultivation can also reduce stubble burning — farmers use its stubble for fodder.

Punjab is among the states and Union Territories (Haryana, Uttar Pradesh, Jammu and Kashmir, Himachal Pradesh and Uttarakhand are the others) that have a Geographical Indication (GI) tag for Basmati

**85) Aarhus Convention, 1998 is related to**

- (a) Conservation of Migratory Species of Wild Animals
- (b) Governing actions to combat climate change through adaptation and mitigation
- (c) Access to Information and Public Participation in Environmental Matters
- (d) Control of Transboundary Movements of Hazardous Wastes and their Disposal.



**Ans (c)** The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the Aarhus Convention, was signed on 25 June 1998 in the Danish city of Aarhus. It entered into force on 30 October 2001. All of the ratifying states are in Europe and Central Asia. The Aarhus Convention grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and transboundary environment. It focuses on interactions between the public and public authorities.