

**SCIENCE & TECHNOLOGY**

- ❖ **Why has the EU slapped a record €1.2B fine on Meta?**
- ❖ **CONTEXT:** Tech giant Meta was hit with a record € 1.2 billion fine and ordered to stop data transfers of Facebook users in Europe to the United States, for not complying with the European Union’s privacy framework. The penalty – which is the highest ever for violating EU’s **General Data Protection Regulation (GDPR)** – applies only to Facebook and not to other Meta group entities like Instagram.
- The Irish data protection board held that the social media company’s data transfers to the United States “did not address the risks to the fundamental rights and freedoms”.
- **Why was Meta fined?**
  - The Irish data protection board found that Meta infringed Article 46(1) of the GDPR which allows cross border data transfers only if an entity has ensured appropriate safeguards for it.
  - The provision states: “...a controller or processor may transfer personal data to a third country or an international organisation only if the controller or processor has provided appropriate safeguards, and on condition that enforceable data subject rights and effective legal remedies for data subjects are available”.
  - The Irish privacy watchdog said that Meta’s use of an instrument known as standard contractual clauses (SCCs) to move data to the US did not sufficiently protect European’s data from America’s privacy regime.
  - In 2020, the European Court of Justice struck down an EU-US data flows agreement known as the Privacy Shield over fears of US intelligence services’ surveillance practices. The judgement also tightened requirements to use SCCs.
  - Following the judgement, the EU and US got back on the drawing board to discuss contours of a renewed data transfer framework, called Privacy Shield 2.0 but the system is yet to be formalised.
- **About General Data Protection Regulation (GDPR):**
  - General Data Protection Regulation (GDPR) is a Regulation in EU law on data protection and privacy in the EU (European Union) and the European Economic Area (EEA). It was approved by the EU in April 2016 and came into force on 25th May 2018.
  - The GDPR replaces the UK’s 1984 Data Protection Act and the EU’s Data Protection Directive, which initially came into force in 1995, with new guidelines that are better suited to the modern technology-dominated world.
  - The GDPR’s primary objective is to give control to individuals over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU.
  - It is a regulation, not a directive, and therefore is directly binding and applicable to each member state of the European Union.
  - Under the terms of GDPR, organisations have to ensure that personal data is gathered legally and under strict conditions and those who collect and manage it are obliged to protect it from misuse and exploitation, as well as to respect the rights of data owners – or face penalties for not doing so.
  - GDPR also provides additional rights to people who want their personal data to get deleted, provided there are no grounds for retaining it (Right to Erasure).
  - The GDPR also makes reporting obligations and enforcement stronger and the data breaches are to be reported within 72 hours. Failure to comply with the GDPR rules could result in a fine of up to 4% of global turnover or 20 million euros, whichever is greater.
  - Personal Data under GDPR: Personal data is data that relates to an identifiable living individual and includes names, e-mail IDs, ID card numbers and IP addresses. It also includes sensitive personal data such as genetic data, and biometric data which could be processed to uniquely identify an individual.
  - GDPR legislation says that Data Protection Officers (DPO) must be appointed by some companies. This refers to public authorities and companies that process large amounts of data.
- **Data Protection Initiatives in India:**
  - **Information Technology Act, 2000:**
    - ✓ The Information Technology Act, 2000 was enacted by the Indian Parliament in 2000. It is the primary law in India for matters related to cybercrime and e-commerce.
    - ✓ The act was enacted to give legal sanction to electronic commerce and electronic transactions, to enable e-governance, and also to prevent cybercrime.
    - ✓ Under this law, for any crime involving a computer or a network located in India, foreign nationals can also be charged.
    - ✓ The law prescribes penalties for various cybercrimes and fraud through digital/electronic format.
    - ✓ It also gives legal recognition to digital signatures.

- ✓ The IT Act also amended certain provisions of the Indian Penal Code (IPC), the Banker's Book Evidence Act, 1891, the Indian Evidence Act, 1872 and the Reserve Bank of India Act, 1934 to modify these laws to make them compliant with new digital technologies.
- ✓ **Section 69A empowers the authorities** to intercept, monitor or decrypt any information generated, transmitted, received or stored in any computer resource if it is necessary or expedient to do so in the interest of the sovereignty or integrity of India, defense of India, the security of the State, friendly relations with foreign states or public order or for preventing incitement to the commission of any cognizable offence or for investigation of any offence. **It also empowers the government to block internet sites in the interests of the nation.** The law also contained the procedural safeguards for blocking any site.
- **Digital Personal Data Protection Bill 2022**
  - ✓ The Union Government has released a revised personal data protection bill, now called the Digital Personal Data Protection Bill, 2022. The Bill has been introduced after 3 months of the withdrawal of the Personal Data Protection Bill, 2019.
  - ✓ **Seven Principles of the 2022 Bill:**
    1. Firstly, usage of personal data by organisations must be done in a manner that is lawful, fair to the individuals concerned and transparent to individuals.
    2. Secondly, personal data must only be used for the purposes for which it was collected.
    3. The third principle talks of data minimisation.
    4. The fourth principle puts an emphasis on data accuracy when it comes to collection.
    5. The fifth principle talks of how personal data that is collected cannot be "stored perpetually by default" and storage should be limited to a fixed duration.
    6. The sixth principle says that there should be reasonable safeguards to ensure there is "no unauthorized collection or processing of personal data".
    7. Seventh principle states that "the person who decides the purpose and means of the processing of personal data should be accountable for such processing".
  - ✓ The bill ensures that individuals should be able to "access basic information" in languages specified in the eighth schedule of the Indian Constitution.
  - ✓ Individuals need to give consent before their data is processed and "every individual should know what items of personal data a Data Fiduciary wants to collect and the purpose of such collection and further processing".
  - ✓ The Bill also proposes to set up a Data Protection Board to ensure compliance with the Bill. In case of an unsatisfactory response from the Data Fiduciary, the consumers can file a complaint to the Data Protection Board.
  - ✓ The bill allows for cross-border storage and transfer of data to "certain notified countries and territories" provided they have a suitable data security landscape, and the Government can access data of Indians from there.
  - ✓ The Centre has been empowered to exempt its agencies from adhering to provisions of the Bill in the interest of sovereignty and integrity of India, security of the state, friendly relations with foreign states, maintenance of public order or preventing incitement to any cognisable offence.

### **GOVERNMENT POLICY**

- ❖ **What is the National Medical Devices Policy, 2023?**
- **CONTEXT:** In April 2023, the Union Cabinet approved the National Medical Devices Policy, 2023. The policy endeavours to facilitate an orderly growth of the sector and in turn, achieve the public health objectives of access, affordability, quality and innovation.
- It is expected to help the domestic medical devices sector market grow from \$11 billion to \$50 billion by 2030 alongside achieving a 10-12% global market share over the next 25 years.
- The aim is to provide the required support and direction, and help the sector become "**competitive, self-reliant, resilient and innovative**" to cater not only to domestic but global needs.
- **What does it do about regulatory streamlining?**
  - The most significant of the introduced measures entail regulatory streamlining. The policy enhances the role of the Bureau of Indian Standards (BIS) along with designing a coherent pricing regulation.
  - Pricing regulation is particularly important for addressing a broader challenge in the domestic device manufacturing sector.
  - Besides capping prices, the streamlining endeavour will also create a single window clearance system for licensing of medical devices, combining relevant departments like the Atomic Energy Regulatory Board (AERB), MeitY and the Department of Animal Husbandry and Dairying (DAHD).

➤ **Human Resource Development and Innovation :**

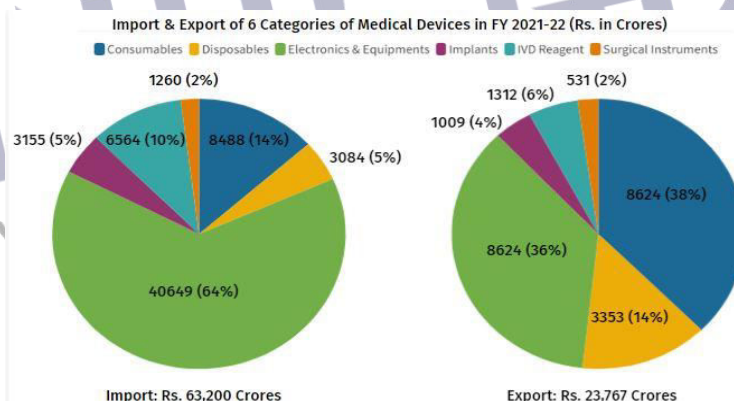
- To ensure a skilled workforce and create future ready MedTech human resources, comprising scientists, regulators, health experts, managers, and technicians, the policy would support dedicated multidisciplinary courses for medical devices, including futuristic medical technologies, high-end manufacturing and research.
- This would complement the Department’s proposed National Policy on Research and Development alongside innovation in the pharma-MedTech sector in India. Further, centres of excellence in academic and research institutions, innovation hubs, and ‘plug and play’ infrastructure are also being planned, alongside support to start-ups.
- The policy also seeks to establish and strengthen large medical device parks and clusters with quality infrastructure facilities close to economic zones with requisite logistics connectivity. This is expected to be a collaborative venture with the State governments and industry, resulting in better convergence and backward integration with the industry.
- Ensuring an ecosystem to encourage private investments, series of funding from venture capitalists and potential public-private partnerships (PPP) is a key component of this endeavour. This will also be supplemented intervention programs such as Make in India, Ayushman Bharat, Heal-in-India and Start-up mission.

➤ **Need for human resources, innovation:**

- Human resources, innovation and investment are particularly important for the medical devices sector because, despite relatively low entry barriers, it is highly capital-intensive and requires continuous skill development to be in consonance with newer technologies.
- As per the Indian Brand Equity Foundation (IBEF), a huge gap still exists in the current demand and supply of medical devices from U.S., China and Germany; India has an overall 70-80% import dependency on medical devices. Many domestic and international manufacturers view this under-penetration as a potential growth opportunity.

➤ **Import & Export of Medical Devices:**

- India is among the major global manufacturers of equipment such as syringes, needles, surgical blades, surgical gloves, condoms, PPE, masks, hydrocephalus shunts, orthopaedic implants and intra-ocular lenses, it is highly dependent on imports for basic consumables like examination gloves, hot water bottles and home care products like blood pressure instruments, diabetes sugar monitors, and thermometers.



- China and U.S. combined make up 60% of our import basket.
- If the National Medical Devices Policy (2023) and the Parliament Healthcare Committee recommendations are implemented then the trade imbalance can be corrected to be at least 60-70% domestic market share and a more reasonable 30% imports.

➤ **What is the Export Promotion Council?**

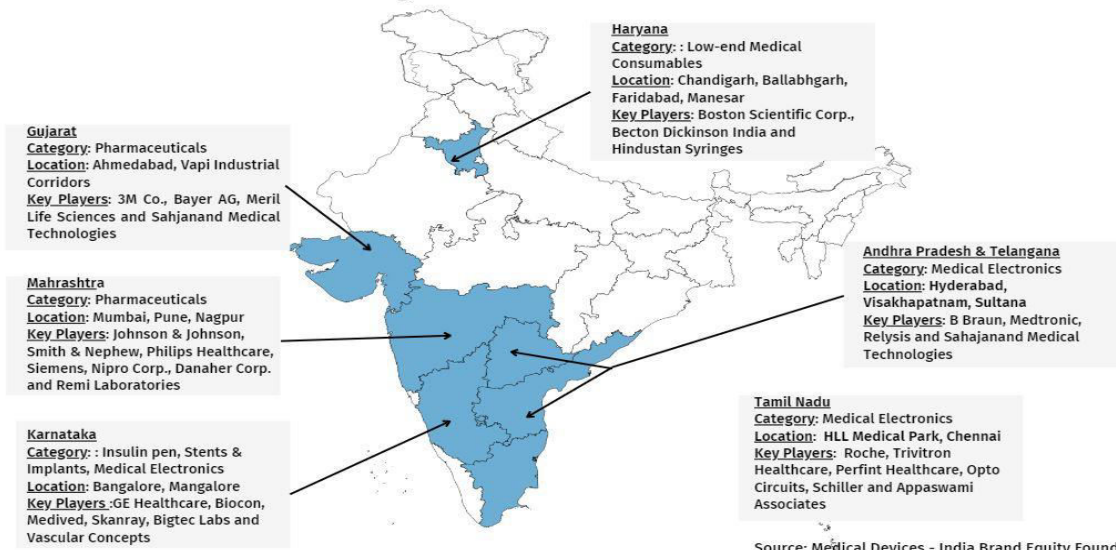
- The policy envisages the creation of a dedicated **Export Promotion Council** for the sector under the Department of Health. This would be a forum to deal with varied market access issues, while also combining and sharing stakeholders’ knowledge and expertise.

➤ **India’s Domestic Market:**

- The domestic industry comprises a combination of large multinationals, small and mid-sized companies. As per the IBEF, India is the fourth largest Asian medical market after Japan, China and South Korea and is among the top 20 globally. It is estimated to grow at a CAGR of 15% — two-and-half times the global growth rate. Between 2020-25, the diagnostic imaging (which includes radiographs and ultrasound) market is likely to expand at a CAGR of 13.5%.
- Exports of medical devices stood at \$2.90 billion in FY 2022; this is estimated to scale to \$10 billion by FY 2025. Key export countries include U.S., France, Singapore, China, Turkey, Brazil, the Netherlands, Iran and Belgium.

- India's major medical clusters are Gujarat, Karnataka, Maharashtra, Haryana, Andhra Pradesh and Tamil Nadu. Their manufacturing expertise varies from pharmaceuticals, medical electronics, stents and implants to low-end medical consumables.
- The policy will help boost manufacturing, help traders and importers to start investing in factories and end the import dependency forced upon India and the ever-rising import bill which shot up by 41% to over Rs 63,000 crore alongside making quality healthcare accessible and affordable worldwide

**Manufacturing cluster for medical devices**



**GLOBAL AFFAIRS**

❖ **India as a Quad-led Manufacturing Hub**

➤ **CONTEXT:** To facilitate cooperation related to developments in critical and emerging technologies including biotechnology, The Quad set up a critical and emerging technology working group in 2021.

- The establishment of a Quad-led bio-manufacturing hub in India will enhance this cooperation.

➤ **What is Bio-Manufacturing?**

- Bio-manufacturing uses living systems, particularly microorganisms and cell cultures, to produce molecules and materials on a commercial scale.
- It has the potential to transform the global industrial system, with up to 60% of physical inputs to the global economy expected to be producible using this technology.
- Many countries, including the US and China, recognise the need to optimise this ecosystem and have designed specific policies to shape their bio-economies.
- India's National Biotechnology Development Strategy envisions the country as a "Global Biomanufacturing Hub" by 2025. As the strategy sets the target of \$100 billion for the hub, this cannot be achieved without external support.

➤ **Why is India an Ideal choice to become the Bio-manufacturing Hub?**

- Existing infrastructure: India already has existing infrastructure in place which can be utilised for the purpose of bio-manufacturing.
- A major player in the global pharmaceutical industry: India has established expertise in manufacturing and quality control processes, which can be leveraged for bio-manufacturing.
- Competitive advantage in terms of cost-effectiveness: According to an analysis, the cost of manufacturing in India is 33% lower than the US.
- With the potential to provide affordable scalability in bio-manufacturing processes, India can meet the demand for bio-manufactured products on a large scale.
- Skilled workforce: India has a large pool of skilled professionals in the life sciences and biotechnology sectors.
- Research capabilities: India has demonstrated its research capabilities in bio-manufacturing, ranking high in terms of the quality of research output and the share of research publications.
- The country's strong research base provides a solid foundation for innovation and advancements in bio-manufacturing processes and technologies.

➤ **Quad's Complementary Strength**

- Funding and advanced technology: The U.S. has significant funding capability, while all three (Japan, Australia, and the U.S.) also possess advanced biotechnology innovation ecosystems and intellectual property.
  - Facilitate cross-Quad collaboration: The bio-manufacturing hub can house all current bilateral government efforts and establish a research collaboration office for this purpose.
  - The hub can harmonise language, regulations, and data-sharing regarding bio-manufacturing to secure supply chains for Quad nations and facilitate international collaboration.
  - Such streamlining will boost collaboration efforts within the Quad and create opportunities for collaboration with nations outside the Quad as well.
- **Why the Bio-manufacturing Hub is Important for Quad and the World At Large?**
- China has also expressed its intention to capture this market, like how it dominated small-molecule active pharmaceutical ingredients (APIs).
  - Such dependence in the bio-manufacturing sector will be detrimental to both India and the Quad.
  - The proposed hub can help facilitate technology transfer, connect investors, and establish a bio-manufacturing fund that is administered through the Quad, to support India's efforts to reduce dependency on China.
- **What should be India's Strategy?**
- Improvement in workforce quality: Permanent training facilities with focus on commercialising research and development. Recent policy changes in India allow the establishment of foreign universities and can encourage scholar exchange programmes.
  - Scheme to check China's dominance: India must formulate a scheme like the production-linked incentive scheme that allocated \$2 billion to the pharmaceutical sector to make biopharmaceuticals, APIs, key starting materials, and related products.
- The Quad should establish a bio-manufacturing hub in India to benefit from the country's economic potential and address supply-chain vulnerabilities.
- The proposed hub has the potential to transform India into a leading player in the field of bio-manufacturing and to help the Quad to compete in this key area.
- **About The Quadrilateral security dialogue/Quad:**
- It is an informal grouping of four democracies - India, Australia, the US, and Japan - first mooted by Japanese Prime Minister Shinzo Abe in 2007.
  - Its core objective is to secure a rules-based global order, freedom of navigation and a liberal trading system. It is also seen as an attempt to check the growing might of China.
  - It was upgraded to the ministerial level in 2019.
  - In March 2021, the first-ever summit of QUAD leaders took place virtually.
  - 1<sup>st</sup> in-person Quad Summit took place in September 2021 in the US. Latest QUAD Summit scheduled to take place in Australia cancelled as President of USA cancelled his visit but the QUAD leaders meet in the sideline of G7 Summit in Japan.
  - India is scheduled to host 2024 Quad leaders summit,

## PRELIMS

### 1. **GREEN SHIPPING**

- **IN NEWS:** Union Minister of Ports, Shipping and Waterways Sarbananda Sonowal has announced that the Centre will provide 30 percent financial support for promotion of Green Shipping. He said two tugs each will be procured for the Jawaharlal Nehru, VO Chidambaranar, Paradip, and Deendayal ports under the **Green Tug Transition programme**.
- **What is Green Shipping?**
- Green shipping is when people or goods are transported by ships using the minimum resources and energy possible, to protect the environment from the pollutants generated by the ships.
  - The global supply chain has become increasingly dependent on shipping, and as the effects of climate change become more obvious, the transportation sector is contributing an increasing amount of CO<sub>2</sub> and GHG.
  - The maritime sector emits 940 million tonnes of CO<sub>2</sub> and contributes 2.5% of all greenhouse gas emissions, according to the European Commission.
  - The International Maritime Organisation (IMO) has taken a strong stand against these sulfur emissions and has issued the requirement IMO Sulphur 2020.
- **About Green Tug Transition Programme:**
- A tug or a tugboat is a boat that aids in the mooring or berthing operation of a ship by towing or pushing the vessel towards the port. Under the Green Tug Transition Programme, the tugboats used in

ports would be converted to 'green tugs' that run on non-fossil fuels such as methanol, hydrogen or ammonia.

- Aim of GTTP: To become a 'Global Hub for Green Ship' building by 2030 and reduce emissions as the country moves towards achieving sustainable development.
- The programme will start with 'Green Hybrid Tugs', powered by Green Hybrid Propulsion systems.
- Eventually, non-fossil fuel solutions like Methanol, Ammonia, Hydrogen etc. would be adopted. At least half of all the tugs are to be converted into Green Tugs by 2030.

## 2. **GAINS' Startup Challenge**

➤ **IN NEWS: Garden Reach Shipbuilders and Engineers (GRSE)** Ltd, one of India's premier defence shipyards and a Category 1 Mini Ratna Company, has embarked on a mission to identify and encourage the development of innovative solutions towards technological advances in shipbuilding by Start-ups. As part of this drive, the Company launched **GRSE Accelerated Innovation Nurturing Scheme – 2023 or "GAINS 2023"** in Kolkata

- In an effort to boost innovation in the shipyard and propel the yard towards becoming a future-ready shipyard, a scheme for encouraging innovators to be a part of this journey through an "Open Innovation Challenge" is considered the need of the hour. 'GAINS 2023' is designed to provide new and emergent innovators, engineers and designers, the opportunity to understand the shipyard's core business interests and its established or bespoke practices and thereby motivating them to think and innovate in this niche technology area.
- The Shipyard has created a separate department to pursue the GAINS initiative and seek out and support innovators in Indian line with the thrust of the Government of India.
- The 'GAINS 2023' Challenge is a two-stage process to help generate a large number of ideas from which a few promising ones may be selected and nurtured. In the first stage, participating entities/firms/individuals would only be required to submit short illustrated and written submissions with sufficient detail to clarify a required degree of understanding of the chosen problem/solution. This should also be accompanied by a rough order of cost and justification of professional qualification/ competence required to successfully implement the proposal.
- Artificial Intelligence, Renewable/Green Energy and Energy Efficiency as well as Efficiency Enhancement are focus areas for GRSE and are the thematic areas of 'GAINS 2023' Challenge.

## 3. **MEGA TEXTILE PARK**

➤ **IN NEWS: New Mega Textile Park at Dhar district** will strengthen Make in India and will create new job opportunities: PM Modi

- The Parks will come up in Tamil Nadu, Telangana, Gujarat, Karnataka, Madhya Pradesh, Uttar Pradesh and Maharashtra.
- It is under **PM Mega Integrated Textile Regions and Apparel (PM MITRA)** scheme.
- It will offer the opportunity to create an Integrated Textiles Value Chain right from spinning, weaving, processing/dyeing and printing to garment manufacturing etc. at one location and will reduce the logistics cost of the Industry.
- A Special Purpose Vehicle owned by the Centre and State Government will be set up for each park which will oversee the implementation of the project.
- Funding:
  - ✓ The Central government's budget outlay for the scheme, which is ₹4,445 crore, is to be spent till 2027-28.
  - ✓ Special purpose vehicles, with a 51% equity shareholding of the State government and 49% of the Centre, will be formed for each park.
  - ✓ The State governments will provide the land, be part of the SPV, and give the required clearances.
  - ✓ The Central government will disburse Development Capital Fund of ₹500 crore in two tranches for each of the seven facilities.
  - ✓ It will also give a Competitive Incentive Support of ₹300 crore per park to be provided to the manufacturing units.
- **Nodal Ministry:** Ministry of Textiles

### **ANSWER WRITING**

**Q. Examine the major findings of India's first national water body census. Throw light on the various threats faced by the water bodies in the country.**

The Jal Shakti ministry recently released the report of India's first water bodies census, which provides a comprehensive database of ponds, tanks, lakes and reservoirs in the country. The census covers more than 2.42 million water bodies across states and union territories. According to the census water bodies are structures where

water from ice melts, streams, springs, rain or drainage from residential or other areas is accumulated. Storage of water diverted from a stream, Nala or river is also included.

**Major findings of the national water body census:**

- Most water bodies are of small size: Out of the total water bodies surveyed for the water spread area, 72% have a water spread of less than 0.5 hectares. This means that the vast majority of India's water bodies are less than one hectare large.
- Regional variations in water bodies: In drier states like Gujarat, Maharashtra, and Rajasthan, water bodies tend to be larger and publicly held. In the wetter parts of the country, like Kerala, West Bengal, and states in the northeast, more than three-quarters of the water bodies are privately owned.
- Maharashtra leads amongst all the states and union territories in building water bodies under the water conservation schemes.
- The census found that West Bengal has the highest number of ponds and reservoirs.
- Most water bodies are in rural areas: The census enumerated 2.42 million water bodies, out of which 97.1% are in rural areas and 2.9% in urban areas.
- Variability in the usage of water bodies: In drier states, the water bodies are primarily used for irrigation and groundwater recharge. In wetter states, domestic use and pisciculture dominate.
- Most water bodies have never been repaired or rejuvenated: Several water bodies were classified as "not in use", meaning despite the recent interest in rejuvenating water bodies, most of them have never been repaired or revived.
- Encroachment of water bodies: The census found that 1.6% of enumerated water bodies had been encroached upon and more than 95% of these were in rural areas. Uttar Pradesh accounted for almost 40% of water bodies under encroachment.

**Threats faced by the water bodies in the country:**

- Rapid urbanisation and unplanned growth: Urban water bodies have been a victim of unplanned urbanisation in India. Due to this, they face several threats such as encroachment, disposal of sewage, unplanned tourism and the absence of an administrative framework.
- Linkages between increasing population and pollution: There has been an explosive increase in the population without a corresponding expansion of civic facilities such as infrastructure for the disposal of waste. As a result, most water bodies in India are suffering because of pollution.
- Climate change: The water crisis and climate change are inextricably linked. Extreme weather events are making water more scarce, unpredictable, and polluted. The impact of climate change on water resources is being felt through worsening floods, rising sea levels, shrinking ice fields, wildfires and droughts.
- Illegal mining activities: Illegal mining for building materials such as sand and quartzite on the catchment and bed of the lake has an extremely damaging impact on the water body. For e.g.: unmindful sand mining from the catchment of Vembanad Lake has decreased the water level in the lake.
- Unplanned tourism activities: Using water bodies to attract tourists has also become a threat to water bodies. For e.g.: Tso Moriri and Pangong lakes in Ladakh have become polluted because of unplanned and unregulated tourism.
- Encroachment: This is another major threat to urban water bodies. As more people have been migrating to cities, the availability of land has been getting scarce. This has led to the encroachment of water bodies. Charkop Lake in Maharashtra, and Deepor Beel in Guwahati are well-known examples of water bodies that were encroached upon.

India is already facing a water crisis and in this context conservation and protection of water bodies become important. Water bodies buffer against climate variability, contribute to food and water security and also have cultural and ecological significance. Therefore, India's first national water census is a step in the right direction and conducting such censuses every five or ten years can provide a significant understanding of the state of the water resources in the country.

**MCQs**

1. "GAINS 2023" start up challenge launched by which of the following?
  - a) Ministry of Commerce & Industry
  - b) Ministry of Corporate Affairs
  - c) Cochin Shipyards Limited
  - d) Garden Reach Shipbuilders and Engineers (GRSE)**
2. With reference to the Mega Textile Park, consider the following statements:
  1. It is under PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme.
  2. A Special Purpose Vehicle owned by the Centre and State Government will be set up for each park which will oversee the implementation of the project.

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

3. SEBI recently proposed that asset management companies (AMCs) should set up surveillance and internal control systems for the deterrence of possible market abuse and fraudulent transactions. Consider the following statements regarding Asset Management Companies (AMCs):
1. It invests the funds pooled from individual investors in securities.
  2. The Reserve Bank of India (RBI) governs and controls every AMC in India.
- Which of the statements given above is/are correct?
- a) **1 only** c) Both 1 and 2  
b) **2 only** d) Neither 1 nor 2
4. Canadian researchers have recently identified how vitamin K helps prevent diabetes. Consider the following statements regarding Vitamin K:
1. It is not found naturally in human body.
  2. It helps to make various proteins that are needed for blood clotting.
- Which of the statements given above is/are correct?
- a) **1 only** c) Both 1 and 2  
b) **2 only** d) Neither 1 nor 2
5. Recently, one old age Rhino dies due to infighting in Orang National Park and tiger reserve. It belongs to which of the following states?
- a) Arunachal Pradesh  
b) **Assam**  
c) Sikkim  
d) Uttarakhand
6. The Environment and Climate Sustainability Working Group (ECSWG) meeting under India's G20 Presidency is underway in Mumbai. With reference to the ECSWG, consider the following statements:
1. The Ocean 20 platform, launched during the Indonesia Presidency Dialogue is aimed to advance ideation and action for ocean solutions.
  2. It aims to facilitate sustainability in the maritime domain, ocean governance, building capacities to facilitate sustainable ocean practices and equitable distribution of benefits from traditional and new blue economy sectors.
- Which of the statements given above is/are correct?
- a) **1 only** c) **Both 1 and 2**  
b) **2 only** d) Neither 1 nor 2
7. With reference to the heat wave, consider the following statements:
1. A Heat Wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the summer season in the North-Western parts of India.
  2. Heat Waves typically occur between March and June, and in some rare cases even extend till July.
- Which of the statements given above is/are correct?
- a) **1 only** c) **Both 1 and 2**  
b) **2 only** d) Neither 1 nor 2
8. Recently Human pan genomemap is in news, consider the following statements linked to it.
1. It refers to the representation and analysis of the collective genetic information present in the genomes of a particular species or a group of related species.
  2. It captures the genetic diversity and variation across multiple individuals or populations.
- Which of the above statements is/are correct?
- a) **1 only** c) **Both 1 and 2**  
b) **2 only** d) Neither 1 nor 2
9. IRIS-T Surface-Launched-Missile (SLM) system, recently seen in the news, belongs to which one of the following countries?
- a) Russia  
b) USA  
c) India  
d) **Germany**
10. Recently lumpy skin disease (LSD) is in news because of rising cases in West Bengal. It is caused by which of the following organism?
- a) Bacteria.  
b) **Virus**  
c) Fungus  
d) None of the above