

## UPSC CURRENT AFFAIRS NOTES 09-10-2023

### Best ever performance at Asian Games in the last 60 years

The Prime Minister has lauded India's best ever performance at Asian Games in the last 60 years with the highest ever medal tally of 107.

The PM hailed the unwavering determination, relentless spirit and hard work of the players.



### “What a historic achievement for India at the Asian Games!

The entire nation is overjoyed that our incredible athletes have brought home the highest ever total of 107 medals, the best ever performance in the last 60 years.

The unwavering determination, relentless spirit and hard work of our players have made the nation proud. Their victories have given us moments to remember, inspired us all and have reaffirmed our commitment to excellence.”

The Asian Games, also known as Asiad, is a continental multi-sport event held every fourth year among athletes from all over Asia.

The Games were regulated by the Asian Games Federation (AGF) from the first Games in New Delhi, India in 1951, until the 1978 Games.

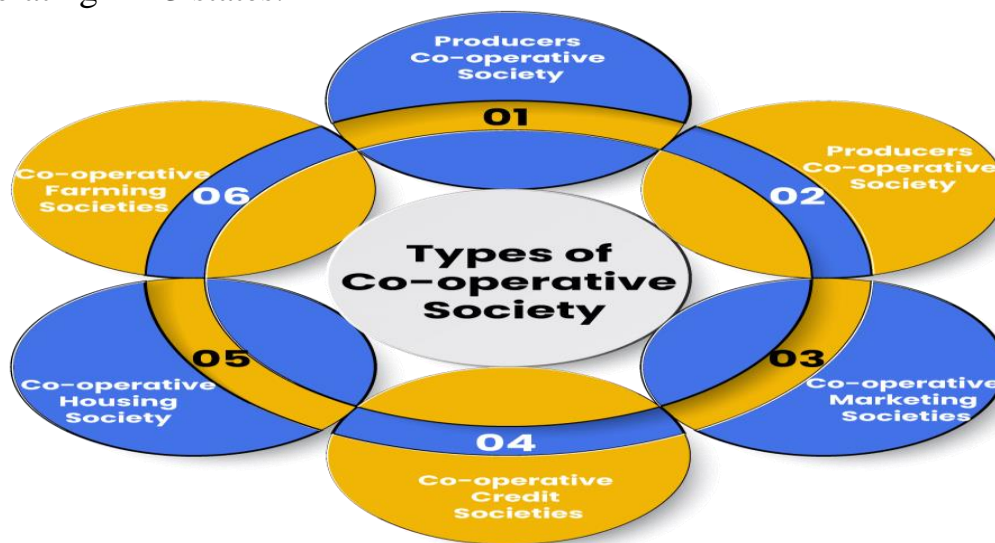
Since the 1982 Games, they have been organized by the Olympic Council of Asia (OCA), after the breakup of the Asian Games Federation.

The Games are recognized by the International Olympic Committee (IOC) and are described as the second largest multi-sport event after the Olympic Games.

Nine nations have hosted the Asian Games. Forty-six nations have participated in the Games, including Israel, which was excluded from the Games after its last participation in 1974. **The last edition of the games was held in Hangzhou, China from 23 September to 8 October 2023.**

### **The Government of India has taken several steps to strengthen all the cooperative societies of the country.**

Union Home Minister and Minister of Cooperation has taken an important decision to computerize and empower the registrars of all 28 states and 8 union territories, and 1,851 Agriculture and Rural Development Banks (ARDBs) operating in 13 states.



On the lines of computerization scheme of all PACS in the country, 1,851 units of Agriculture and Rural Development Banks (ARDBs) of 13 states will be computerized through a national unified software.

Offices of Registrar of Cooperatives of all States/Union Territories will also be computerized similar to Central Registrar.

Central Project Monitoring Unit (PMU) will be established for this scheme, which will work towards the successful implementation of the plan, total estimated expenditure for this scheme will be Rs. 225.09 crore.

Implementation of this scheme will enable people to quickly access services provided by the Cooperative Departments of the states and the offices of ARDBs, additionally it will also bring transparency and uniformity in the functioning of these offices, which will make them more efficient and save the time

### **Accredited Social Health Activist (ASHA)**

The government is planning to give incentives to ASHA health activists for mobilising eligible individuals for sickle cell disease screening and distribution of sickle cell cards.



### **About Accredited Social Health Activist (ASHA):**

- ASHA is a trained female community health activist.
- ASHA workers are a core part of the National Rural Health Mission launched by the Government of India.
- Selected from the community itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.

### **Functions:**

Act as a care provider at the community level.

Facilitating access to healthcare, medicine, and sanitation services.

Raising the level of awareness of health issues among the marginalised sections within the community.

Advocate for female health and hygiene standards.

Advocate for a health-conscious behaviour and approach to livelihood.



The ASHA scheme is presently in place in all States/UTs (except Goa).

The states are mandated to employ at least one ASHA worker per every 1000 people.

They are chosen through a rigorous process of selection involving various community groups, self-help groups, Anganwadi Institutions, Block Nodal officer, District Nodal officer, the village Health Committee and the Gram Sabha.

The States have been given the flexibility to relax the population norms as well as the educational qualifications on a case to case basis, depending on the local conditions as far as her recruitment is concerned.

### **Selection Criteria:**

In rural areas, ASHA must primarily be a woman resident of the village married/ widowed/ divorced, preferably in the age group of 25 to 45 years and literate preferably qualified up to 10th standard (formal education up to Class 8).

In urban areas, ASHA must be a woman resident of the “slum/vulnerable clusters” and belong to that particular vulnerable group which have been identified by City/District Health Society for selection of ASHA and must have good communication and leadership skills.

### **Compensation for ASHA:**

- An ASHA worker is primarily an “honorary volunteer” but is compensated for her time in specific situations (such as training attendance, monthly reviews, and other meetings).
- On an average, an ASHA worker's monthly income varies from Rs 2,000 per month to Rs 7,000 per month, depending on the state.
- In addition, she is eligible for incentives offered under various national health programmes.
- She would also have income from the social marketing of certain healthcare products like condoms, contraceptive pills, sanitary napkins, etc.

## **Udangudi Panangrupatti**

Recently, Udangudi ‘Panangrupatti’ (palm jaggery/ gur) from Tamil Nadu has received a Geographical Indication (GI) tag.

The palm jaggery preparation procedure in this area is traditional till date without inclusion of any additional modern strategies.

## Uniqueness:

The karupatti prepared from the palm sap from the region around Udangudi in Tiruchendur taluk in Thoothukudi district has some uniqueness.

- This is due to the presence of red sand dune soil found in the region.
- This soil holds less groundwater. The moisture content in the atmosphere is less because of the dry climatic condition, which leads to high sucrose content, in turn adding taste.
- The region's dry climate is also suitable for storage of karupatti for a longer duration.
- No chemical additives like Triple super phosphate and phosphoric acid are used in its preparation.

## Key facts about Geographical Indication (GI) tag

- It is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- This is typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts and industrial products.
- The Geographical Indications of Goods (Registration and Protection) Act, 1999 seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is valid for 10 years following which it can be renewed.

## Mont Blanc

**New research has revealed that Mont Blanc, France's highest mountain has witnessed a reduction in its height over the past two years.**





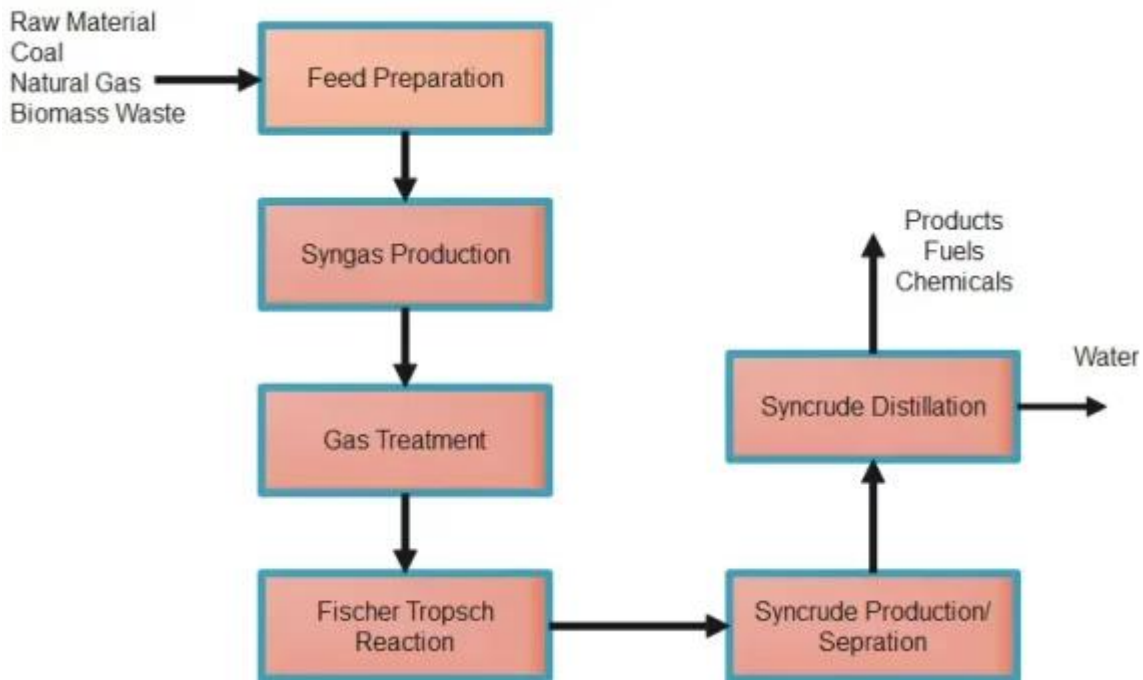
### About Mont Blanc:

- It is the highest peak (4,807 metres) in Europe.
- It is located in the Alps and lies along the French-Italian border and reaches into Switzerland.
- It is nicknamed as "the roof of Europe".
- Its name comes from the perennial snow cap that covers it, meaning literally "the white mountain".
- The mountain stands in a range called the Graian Alps, between the regions of Aosta Valley, Italy, and Savoie and Haute-Savoie, France.

### Key facts about Alps

- The Alps emerged during the Alpine orogeny an event that began about 65 million years ago as the Mesozoic Era was drawing to a close.
- They are young fold mountains with rugged relief and high conical peaks.
- The Alps arose as a result of the collision of the African and Eurasian tectonic plates in which the Alpine Tethys which was formerly in between these continents disappeared.
- The Alps extend north from the subtropical Mediterranean coast near Nice, France, to Lake Geneva before trending east-northeast to Vienna (at the Vienna Woods).
- There they touch the Danube River and meld with the adjacent plain.
- The Alps form part of France, Italy, Switzerland, Germany, Austria, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, and Albania.

## FISCHER–TROPSCH PROCESS



The discovery made by researchers at Washington State University about the Fischer-Tropsch process has significant implications for improving fuel production efficiency.

### Details

**Self-Sustained Oscillations:** The researchers discovered previously unknown self-sustained oscillations in the Fischer-Tropsch process. Unlike many catalytic reactions that typically have one steady state, this reaction periodically fluctuates between high and low activity states.

**Controlled Oscillations:** Unlike rate oscillations in chemical reactions that are often undesirable due to safety concerns, these oscillations in the Fischer-Tropsch process are controlled and well-understood. This opens up new possibilities for enhancing the reaction rate and improving the yields of desired products.

**Knowledge-Based Approach:** This discovery provides a deep understanding of the underlying mechanisms of the Fischer-Tropsch process, enabling researchers to take a knowledge-based approach to research and development. This understanding will be invaluable in designing catalysts intentionally and fine-tuning reactions to induce oscillatory states for improved catalytic performance.

**Accidental Discovery:** The researchers stumbled upon these oscillations by accident when a graduate student encountered difficulties stabilizing the

temperature in the reaction. This serendipitous discovery ultimately led to a breakthrough in understanding the Fischer-Tropsch process.

**Mechanistic Insight:** The study not only identified the presence of oscillatory states but also explained why they occur. As the reaction generates heat, the temperature rises, causing the reactant gases to lose contact with the catalyst surface and slowing down the reaction. This, in turn, cools the system, allowing reactant gases to return to the catalyst surface, and the reaction accelerates again.

**Theoretical Modeling:** The researchers were able to theoretically model the oscillatory behavior of the Fischer-Tropsch reaction, which closely matched the experimental data. This modeling enhances their ability to predict and control the reaction.

**Significance of the Discovery:** Fischer-Tropsch is a crucial process in the production of fuels and chemicals, and this discovery offers a revolutionary approach to optimizing its efficiency. It has the potential to transform how catalysts are designed and used in this process.

**Exciting Breakthrough:** The researchers expressed their excitement about this breakthrough, highlighting how it can significantly impact the field of catalytic chemistry and fuel production.

### About the process

The Fischer-Tropsch process is a catalytic chemical reaction used to convert carbon-based feedstocks, such as coal, natural gas, or biomass, into liquid hydrocarbons, which can be further refined into various fuels and chemicals.

This process has been of significant industrial importance for nearly a century and continues to be a subject of research and development due to its potential in meeting energy and chemical production needs while reducing greenhouse gas emissions.

### History and Background:

**Origins:** The Fischer-Tropsch process is named after its inventors, Franz Fischer and Hans Tropsch, who developed it in the 1920s in Germany.

**World War II:** During World War II, the process played a crucial role in Germany's synthetic fuel production when access to conventional oil was limited.

### Basic Chemistry:

**Feedstocks:** Fischer-Tropsch reactions can use a variety of feedstocks, including coal, natural gas, and biomass, as sources of carbon.



**Reaction Steps:** The process involves a series of chemical reactions that convert carbon monoxide (CO) and hydrogen (H<sub>2</sub>) into longer-chain hydrocarbons, such as paraffins and olefins.

### **Catalysts:**

**Catalysts:** Catalysts play a critical role in Fischer-Tropsch reactions. Common catalysts include iron, cobalt, and ruthenium-based materials.

**Catalytic Mechanisms:** Understanding the catalytic mechanisms is essential for optimizing the process. The exact mechanisms can vary depending on the catalyst used.

### **Product Yields and Selectivity:**

**Product Spectrum:** Fischer-Tropsch reactions produce a range of hydrocarbon products, from light gases (e.g., methane) to heavier liquids (e.g., waxes).

**Selectivity:** The choice of catalyst and process conditions can influence the selectivity towards specific products. Researchers aim to maximize the yield of desired liquid fuels.

### **Applications:**

**Fuel Production:** Historically, the Fischer-Tropsch process has been used for the production of synthetic fuels, such as gasoline, diesel, and aviation fuels.

**Chemical Industry:** It is also utilized to produce a variety of chemical feedstocks and specialty chemicals.

**Environmental Considerations:** Fischer-Tropsch can be part of strategies to reduce carbon emissions by converting coal or natural gas into cleaner-burning fuels.

### **Challenges and Research:**

**Efficiency:** One of the primary challenges is improving the efficiency of the process, including enhancing catalyst performance and reducing energy consumption.

**Environmental Impact:** Researchers are exploring ways to reduce the environmental footprint of the Fischer-Tropsch process, such as capturing and utilizing carbon dioxide emissions.

**Alternative Feedstocks:** Investigations into using renewable feedstocks and waste materials are ongoing to make the process more sustainable.

### **Modern Developments:**

**Advanced Catalysis:** New catalyst materials and formulations are being developed to make the process more efficient and selective.

**Integration with Renewable Energy:** Combining Fischer-Tropsch with renewable energy sources, such as solar or wind power, is being explored to reduce greenhouse gas emissions.

### **Future Prospects:**

**Energy Transition:** The Fischer-Tropsch process may play a role in the transition to a low-carbon energy future by producing clean fuels from abundant carbon sources.

**Hydrogen Economy:** With growing interest in hydrogen as an energy carrier, Fischer-Tropsch may find applications in hydrogen production and conversion.

## **Mundra Port**

Mundra Port, the flagship facility of Adani Ports and Special Economic Zone, recently completed 25 years of operations.



### **About Mundra Port:**

- It is the largest private port and the largest container port in India.
- Location: It is located on the north shores of the Gulf of Kutch, near Mundra, Kutch district, Gujarat.
- It is a deep-draft, all-weather port.
- It is also a special economic zone (SEZ).
- As much as 33 per cent of India's container traffic flows through the port.
- Ownership: It is run by Adani Ports and Special Economic Zone Limited (APSEZ), which is India's largest commercial ports operator and accounts for nearly one-fourth of the country's cargo movement.

## Handling Capacity:

With a capacity of 260 MMT, the port handles over 155 MMT (FY 2022-23), which constitutes nearly 11% of India's maritime cargo.

The port has 26 berths and two single-point moorings, which allow it to accommodate a wide range of vessels.

The port handles a wide variety of cargo, including containers, dry bulk, break bulk, liquid cargo, and automobiles.

It also has the country's largest coal import terminal, which facilitates faster cargo evacuation with minimal turnaround time.

Mundra Port's rail is connected to the national rail network, and cargo can be handled for any location in India.

## Digital India Act



## Proposed Digital India Act, 2023

The recent announcement of the Digital India Act 2023 (DIA) represents a significant step towards establishing a future ready legal framework for the country's burgeoning digital ecosystem.

This move by the Ministry of Electronics and Information Technology (MEITY) signals a proactive approach to regulating and shaping the digital future of the nation.

### **Need for the Digital India Act 2023:**

The DIA will replace the two decade old Information Technology Act 2000 (IT Act).

The IT Act was crafted during a time when the internet was in its infancy, and has struggled to keep pace with the rapid changes in technology and user behaviour.

Since its inception, India's internet user base has exploded from a mere 5.5 million to a staggering 850 million.

The nature of internet usage has also evolved, with the emergence of various intermediaries and the proliferation of new forms of user harm, such as cyberstalking, trolling and doxing.

The DIA recognises these changes and aims to provide a comprehensive legal framework to address them.

It is designed to address the challenges and opportunities presented by the dramatic growth of the internet and emerging technologies.

The primary motivation behind the DIA is to bring India's regulatory landscape in sync with the digital revolution of the 21st century.

### **Key Provisions of the Digital India Act 2023:**

It places a strong emphasis on online safety and trust, with a commitment to safeguarding citizen's rights in the digital realm while remaining adaptable to shifting market dynamics and international legal principles.

It recognises the growing importance of new age technologies such as artificial intelligence (AI) and blockchain and provides guidelines for their responsible utilisation.

It upholds the concept of an open internet, striking a balance between accessibility and necessary regulations to maintain order and protect users.

It mandates stringent Know Your Customer (KYC) requirements for wearable devices, accompanied by criminal law sanctions.

It contemplates a review of the "safe harbour" principle, which presently shields online platforms from liability related to user generated content, indicating a potential shift in online accountability standards.

### **Significance of the Digital India Act 2023:**

The provisions underscore the proposed DIA's commitment in addressing the complexities of the digital age.



It aims to not only encourage the adoption of the new age technologies but also to ensure that their deployment is in line with ethical-legal principles, data privacy principles and mechanisms for accountability.

This means that the DIA does not just leave it to the market to dictate the course of these technologies but actively engages in shaping their development and use within a regulatory framework.

And by doing so, the DIA strikes a balance between fostering innovation and safeguarding against potential harms.

This forward-looking stance is not only beneficial for citizens and businesses but also positions India as a responsible player in the global technology landscape - harnessing the full potential of new age technologies while mitigating associated risks.

### **The Challenges to Implementing Digital India Act 2023:**

Potential impact on innovation and the ease of doing business: Stricter regulations, particularly in emerging technologies, could inadvertently stifle entrepreneurial initiatives and deter foreign investments.

The review of the “safe harbour” principle: It could lead to a more cautious approach among these platforms, possibly impinging on freedom of expression.

Challenges to effective enforcement: This will require substantial resources, expertise, and infrastructure.

Balancing the interests of various stakeholders: Including tech giants, while ensuring the protection of citizen rights, poses a significant challenge.

### **Way Ahead:**

While the DIA is a progressive move - ensuring a secure, accountable, and innovative digital future for India, its implementation and potential repercussions warrant vigilant monitoring and adaptability to avoid unintended consequences.

It represents a forward looking approach to regulation in an age of constant change and has the potential to shape the country’s digital landscape for generations to come.

As consultations continue, it will be interesting to see how this proposed legislation evolves and plays out in the dynamic digital arena.