

**AWARENESS IN THE FIELD OF IT, COMPUTERS [GS-III]****The Finternet or Asset tokenization for global financial systems**

The article discusses a new idea called 'the Finternet' that could change how money and assets are managed globally. It suggests using digital technology to connect different financial systems and make transactions faster, cheaper, and safer.

**What is the Finternet?**

- The current financial system, with separate regulatory environments for different transactions, has become inefficient as transactions grow more complex. It is slowing operations, increasing costs, and restricting competition and innovation.
- Finternet aims to connect different financial systems globally using modern technology.
- The Finternet is a proposed digital framework by the Bank for International Settlements.
- Tokenization is at the core of the Finternet, where assets are represented as digital tokens with standardized rules.
- These tokenized assets can be transacted on a unified ledger, a shared digital system for managing various financial assets.

**Benefits of the Finternet**

- Cheaper transactions: The Finternet reduces costs associated with financial transactions.
- Faster transactions: Transactions become quicker due to streamlined processes.
- Safer transactions: Reduced reliance on intermediaries decreases the risk of fraud.
- Reduced counter-party risk: Tokenized assets enable direct trading among holders, minimizing counter-party risk.
- Automation of complex agreements: Complex financial agreements can be automated and executed directly without intermediaries.
- Development of new financial instruments: The Finternet allows for the creation of new financial products and investment opportunities.

**challenges of the Finternet**

- Tokenizing real-world assets: Challenges arise in tokenizing tangible assets like art pieces, which lack public registries.
- Double-spending problem: Ensuring that tokenized assets cannot be sold simultaneously offline and online is a significant challenge.
- Legal requirements: Adapting legal frameworks to accommodate tokenized assets, especially for movable assets, presents hurdles. It is because, tokenizing real estate requires statutory amendments to convert government registers into tokenized ledgers.
- Public registries: For assets like land titles, converting existing public registries into tokenized ledgers may require substantial effort.
- Comprehensive tokenization: Ensuring all assets are tokenized and recorded on the unified ledger is a complex task that requires careful planning and execution.

**ENVIRONMENT POLLUTION [GS-III]****Global Plastic Pollution Treaty Talks**

- Recently, Global leaders gathered (from 23 April-29 April 2024) in Ottawa, Canada for the 4th Session of Intergovernmental Negotiating Committee (INC) to discuss progress in drafting a first-ever global plastic treaty.
- At the 4th Session of INC, around 3,500 people registered to attend including lobbyists, business leaders, lawmakers, scientists and environmental non-profits.

**UN Global Plastic Pollution Treaty**

- At the U.N. Environmental Assembly in 2022, the world's nations agreed to develop a legally binding agreement by the end of 2024 to address the world's plastic pollution crisis.
- The Treaty is meant to address plastics through their entire lifecycle from when they are produced, to how they are used and then disposed of.
- It will be defining what measures to take, how and when to implement them.
- Working of INC: The INC began its work during the second half of 2022, aiming to complete the negotiations by the end of 2024.
  - First session of the INC (INC-1): Punta del Este, Uruguay from 28 November to 2 December 2022.
  - Second session (INC-2): Paris, France from 29 May to 2 June 2023.

- **Third session (INC-3):** Nairobi, Kenya from 13 to 19 November 2023.
- **Fourth session (INC-4):** Ottawa, Canada from 23rd to 29 April 2024.
- **Fifth session (INC-5):** Scheduled to take place at Busan, Republic of Korea from 25th November to 1st December 2024.

**Plastic Waste Concern**

- Plastic waste has become a global menace polluting landscapes and waterways, producing plastics involves releasing greenhouse gas emissions.
- The plastic industry now accounts for 5% of global carbon emissions, which could grow to 20% by 2050.
- Plastic production is on track to triple by 2060 – unless the treaty sets production limits, as some have proposed.
- Most virgin plastic is derived from petroleum.

**Potential Challenges & Consensus in the Meeting**

With Respect to restrictions and phase-outs, reuse policies, product design requirements, extended producer responsibility, and waste management etc

- **Regarding Production Limits :** Many plastic and petrochemical-producing countries including Saudi Arabia, Iran and China have opposed mentioning production limits.
- **Regarding Phase Outs :** A group of 60 nations wants to end plastic pollution by 2040. They are called the “High-Ambition Coalition.” (The group includes European Union countries, island nations, Japan, and the United Arab Emirates.)
- **Petrochemical Industry on Recycling & Technology Use :** They said that production caps would lead to higher prices for consumers, and that the treaty should address plastics only after they are made.
  - They want to focus on encouraging the reuse or recycling of plastics, including deploying technology that can turn plastic into fuel.
  - About chemicals used in production :They said companies should be allowed to disclose those chemicals voluntarily.
- **Corporate Brands Company :** More than 200 consumer-facing companies including Unilever, PepsiCo and Walmart have joined the so-called Business Coalition for a Plastics Treaty.
  - Like the petrochemical industry, these companies that rely on plastic packaging for their products have been a major presence in the plastics negotiations.

However they support the Negotiating Treaty.

- To rein in soaring plastic pollution by the end of the year. It could be the most significant deal relating to climate-warming emissions and environmental protection since the 2015 Paris Agreement, which got 195 parties to agree to keep global temperatures from rising beyond 1.5C.

**PRELIM FACT**

**1.Sodium-ion battery**

- South Korean researchers have developed a high-power hybrid sodium-ion battery capable of charging in seconds, marking a potential breakthrough in energy storage technology.
- Sodium, being nearly 1000 times more abundant than lithium, offers a cheaper and more feasible energy source.
- This development suggests the battery could be a viable alternative to lithium-ion batteries, meeting increasing demands for low-cost energy storage devices with high energy density.

Feature	Sodium-ion Batteries	Lithium-ion Batteries
Cost	Generally lower cost due to the abundance of sodium (Sodium is <b>500-1000 times more abundant than lithium</b> ).	Higher cost due to the scarcity of lithium and its extraction process.
Energy Density	<b>Lower energy density</b> compared to lithium-ion batteries.	Higher energy density, providing more power in a smaller size.
Cycle Life	<b>Generally lower cycle life</b> compared to lithium-ion batteries.	Longer cycle life, retaining capacity over more charge-discharge cycles.
Safety	<b>Generally safer</b> due to the less reactive nature of sodium.	Generally safe but can be prone to thermal runaway under certain conditions.
Environmental Impact	Sodium is more abundant <b>and less harmful to the environment</b> .	Lithium extraction and disposal can have environmental consequences.

**Application** Suitable for **large-scale energy storage** and grid applications. Widely used in consumer electronics, electric vehicles, and portable devices.

**2. Alternate wetting and drying technique**

According to a Food and Agriculture Organisation report 2023, rice paddies contribute 8% of all human-made methane in the atmosphere. The Vietnam farmers are reducing methane emissions by employing alternate wetting and drying technique to grow rice.

**About Alternate wetting and drying (AWD)**

1. Alternate wetting and drying (AWD) is a water-saving technology that lowland (paddy) rice farmers can apply to reduce their water usage in irrigated fields.

2. In AWD, irrigation water is applied to flood the field a certain number of days after the disappearance of ponded water.

Hence, the field is alternately flooded and dried.

3. The number of days of non-flooded soil in AWD between irrigations can vary from 1 day to more than 10 days depending on the soil type.

4. They also employ large drones to spray organic fertilizer onto the knee-high rice seedlings below.

**Benefits of Alternate wetting and drying (AWD)**

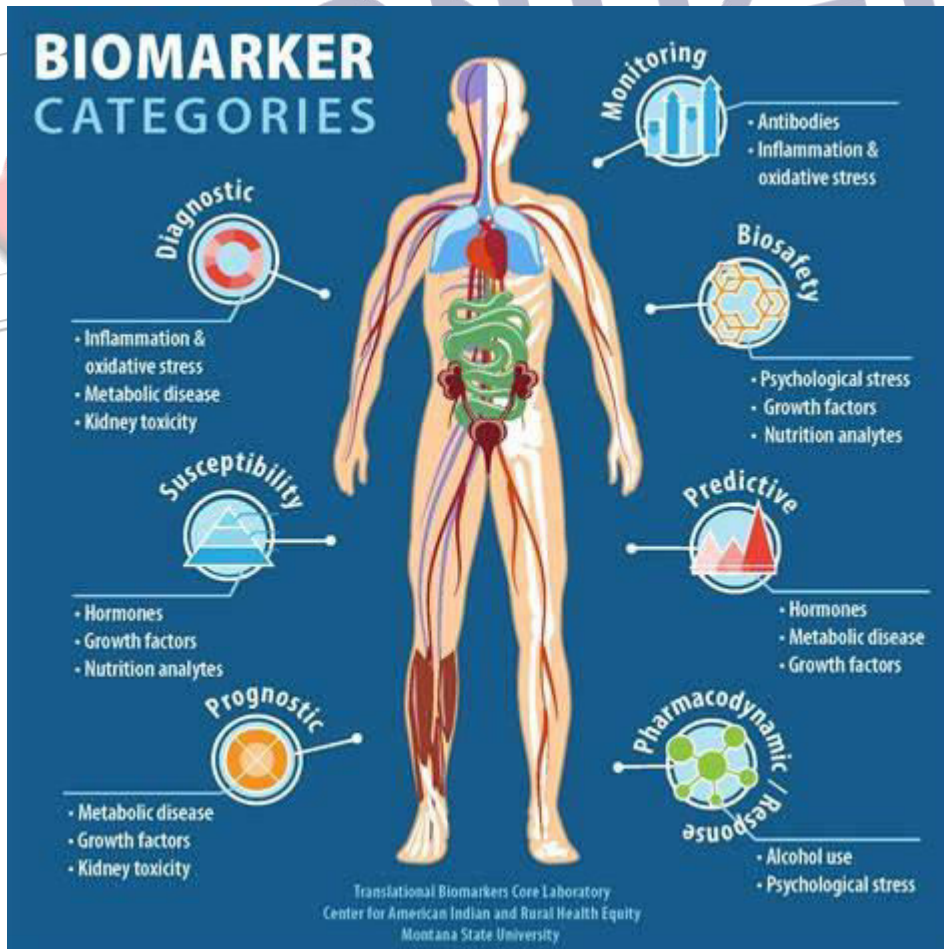
1. It produce less methane and thus environment friendly.

2. Using the drone to fertilize the crops saves on labour costs.

3. It also guarantees the precise application of fertilizers. Excessive amounts can lead to the release of nitrogen gases from the soil, contributing to Earth-warming effects.

**3. Biomarkers**

- For the potential detection of cancer in its earlier stages, screening of blood biomarkers is being suggested as a possible method by researchers.
- According to the researchers, a new AI-powered test can be used to accurately and quickly detect three major types of cancer, by using only a single spot of dried blood. This dried blood spot can serve as a biomarker for cancer detection.



**About Biomarkers**

1. According to WHO, Biomarker is defined as any measurement which reflects an interaction between a biological system and a potential hazard. This potential hazard may be chemical, physical, or biological. The measured response is measured in functional, physiological or biochemical terms.
2. It is an objective measurement that captures what is happening in a cell or an organism at a given moment. It is often referred to as molecular markers or signature molecules.
3. Biomarkers consist of biomolecules like carbohydrates, proteins, lipids, genes, DNA, RNA, platelets, enzymes, and hormones.
4. Biomarkers play a crucial role in disease diagnosis, appropriate drug prescription, dosage determination, and drug development.

**4. Schengen visas**

EU has eased norms to offer Indians multiple entry Schengen visa with longer validity. Indian nationals can now be issued long-term, multi-entry Schengen visas valid for two years after having obtained and used two visas in the past three years.

**About Schengen visas**

1. It is an official document necessary for non-Europeans to travel to all the 29 countries which are part of the Schengen area.  
Note: The Schengen area consists of 29 European countries of which 25 are EU states (Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Germany, Estonia, Greece, Spain, France, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland and Sweden, along with Iceland, Liechtenstein, Norway and Switzerland).
2. Schengen visas permits holders to freely move within the Schengen zone for short visits, capped at 90 days within any period of 180 days.
3. These visas do not authorize employment.

**Significance of New Visa Multiple Entry Visa System**

1. The new visa system will facilitate easier access for Indian nationals to multi-year visas. This will be available to all those with a proven travel history and provided their passport's validity permits.
2. This measure was adopted within the framework of the EU-India Common Agenda on Migration and Mobility. This aims to broaden the collaboration on migration policies between the EU and India.
3. It emphasizes the enhancement of people-to-people connections in light of India's significance as an EU partner.

**5. Rashtriya Arogya Nidhi (RAN) scheme**

Recently, the Delhi High Court has held that the new threshold income to claim benefit under the Rashtriya Arogya Nidhi (RAN) scheme is prima facie "extremely low".

Under the new umbrella scheme of RAN, the threshold of monthly income for obtaining benefit is ₹1,571 for rural areas and Rs 1,605 for urban areas. The court is of prima facie view that the threshold limit is extremely low.

**About Rashtriya Arogya Nidhi (RAN) scheme**

Aspects	Description
About	<ol style="list-style-type: none"> <li>1. It is provided by the Ministry of Health and Family Welfare.</li> <li>2. It provides one-time financial assistance to poor patients living below State/UT wise threshold poverty line and suffering from life threatening diseases relating to heart, kidney, liver, cancer, etc. for treatment at any of Super Specialty Government hospitals/institutes.</li> </ol>
Scheme type	<b>Central sector scheme</b>
Components	<p>The Umbrella Scheme of RAN includes three key components as follows:</p> <ol style="list-style-type: none"> <li>1. Rashtriya Arogya Nidhi (RAN): It offers up to 15 lakhs in financial aid for treating critical illnesses related to the heart, kidney, liver etc, at government hospitals or institutions with super specialty services.</li> <li>2. Health Minister's Cancer Patient Fund (HMCPF): It provides financial assistance up to 15 lakhs for cancer treatment at Regional Cancer Centres (RCCs), Tertiary Care Cancer Centres (TCCCs), and State Cancer Institutes (SCIs).</li> <li>3. Financial Assistance for Patients with Rare Diseases: It allocates up to 20 lakhs for treatment of specified rare diseases at government hospitals or institutes equipped with super specialty facilities.</li> </ol>

**ANSWER WRITING**

**Q. Evaluate the pros and cons of reintroducing a wealth tax in India as a tool for economic equity and fiscal policy. Give some suggestions for reforming India's tax system to better address wealth inequality.**

A wealth tax, levied on the total value of personal assets, has been a subject of global debate. Proponents argue it could address wealth concentration and fund public services, while critics highlight challenges in implementation and potential economic repercussions.

**Pros of a Wealth Tax**

- **Redistribution of Wealth:** Advocates argue a wealth tax could counteract the concentration of wealth among a small elite, thereby promoting social equity. By taxing assets annually, governments can redistribute resources to fund healthcare, education, and infrastructure, potentially lifting millions out of poverty.
- **Efficient Targeting of Wealthy:** Unlike income taxes, a wealth tax captures revenue from those with substantial assets but possibly low taxable income, ensuring the very wealthy contribute their fair share to society.
- **Promotion of Productive Investment:** By imposing a cost on holding wealth, it encourages asset owners to seek higher returns, potentially leading to more dynamic investment in the economy.

**Cons of a Wealth Tax**

- **Double Taxation:** Critics argue that wealth taxes constitute double taxation, penalizing individuals for wealth that has already been taxed in the form of income or capital gains, which could be seen as unfair.
- **Capital Flight:** There's a risk that a wealth tax would encourage the rich to move their assets or themselves to jurisdictions with more favorable tax regimes, potentially leading to a loss of capital for India.
- **Valuation Challenges:** Determining the market value of diverse assets can be complex and subjective, raising concerns about fairness and the administrative burden on tax authorities.

**Suggestions for Reforming India's Tax System**

- **To address wealth inequality effectively while mitigating the cons of a wealth tax, India could consider a multifaceted approach:**
- **Strengthening Wealth Reporting and Valuation:** Implementing robust frameworks for asset valuation and reporting can minimize evasion and ensure a fair assessment of wealth tax obligations.
- **Progressive Taxation with Thresholds:** Designing a wealth tax with high thresholds and progressive rates could minimize the impact on the middle class while ensuring the wealthiest contribute a fair share.
- **Global Cooperation to Combat Tax Evasion:** Engaging in international agreements to share financial information could reduce the opportunities for capital flight and tax evasion.
- **Comprehensive Tax Reform:** Beyond a wealth tax, India could explore closing loopholes in existing taxes, enhancing the progressivity of income taxes, and simplifying the tax code to improve overall fairness and efficiency.

While the reintroduction of a wealth tax in India offers a tool for addressing economic inequities, its design and implementation require careful consideration to avoid unintended consequences. A holistic approach to tax reform, focusing on equity, efficiency, and cooperation, may provide a more sustainable path toward reducing wealth inequality and promoting economic growth. Balancing the redistribution of wealth with economic incentives will be crucial in shaping a fiscal policy that serves the broader interests of Indian society.

**MCQs**

1. Consider the following statements:
  1. Sodium-ion batteries have lower energy density compared to Lithium-ion batteries.
  2. Sodium-ion batteries use sodium ions as the charge carriers instead of lithium ions.
  3. Sodium-ion batteries are not suitable for high-performance applications due to their low capacity.

How many of the above statements are correct?

  - (a) Only one
  - (b) Only two
  - (c) **All three**
  - (d) None
2. In which of the following states is Tale Valley Wildlife Sanctuary located?
  - (a) Rajasthan

- (b) Odisha  
(c) Meghalaya  
**(d) Arunachal Pradesh**
3. Which of the following statements about Mount Erebus is correct?  
(a) It is the tallest mountain in Antarctica.  
(b) It is the tallest mountain in Antarctica.  
(c) It is located on the North Pole.  
**(d) It is known for its persistent lava lake.**
4. 'Trends in World Military Expenditure' report released by the  
(a) International Telecommunication Union  
(b) World Trade Organization  
(c) World Economic Forum  
**(d) None**
5. 'Ensuring safety and health at work in a changing climate' report is released by the  
(a) WEF  
(b) UNDP  
**(c) ILO**  
(d) UNEP
6. Exercise Poorvi Lehar (XPOL) is conducted by the  
(a) BSF  
(b) CISF  
(c) ITBP  
**(d) None**
7. Consider the following statements:  
1. Any food hazardous to public health poses a danger to the fundamental right to life.  
2. The Food Safety and Standards (Safe food and balanced diets for children in school) Regulations, 2020, restricts the sale of high in fats, salts and sugars (HFSS) foods in school canteens, or within 50 metres of the school campus.  
3. Presence of artificial sweeteners is one of the important factors considered when calculating the Indian Nutrition Rating (INR) score of a food item.  
How many of the statements given above are correct?  
(a) Only one  
**(b) Only two**  
(c) All three  
(d) None
8. With reference to the Pradhan Mantri Awas Yojana (PMAY), consider the following statements:  
1. It is a centrally sponsored scheme designed to ensure "Housing for All".  
2. It aims to involve the private sector to bridge the gap in public investments for social housing.  
3. The Credit Linked Subsidy Scheme (CLSS) component of PMAY provides direct cash transfers to eligible beneficiaries.  
4. Under the Beneficiary-led Construction (BLC) component of PMAY, the government's role is limited to cost-sharing with beneficiaries.  
How many of the statements given above are correct?  
(a) Only one  
(b) Only two  
**(c) Only three**  
(d) All four
9. Consider the following statements regarding 5G technology:  
1. Low band spectrum of 5G has better coverage and penetration of signals whereas the high band spectrum has more internet speed.  
2. High latency of 5G technology is significant for autonomous driving applications.  
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
10. Consider the following statements:  
1. According to the government's new policy, the import duty on Completely Built Unit (CBU) electric vehicles (EVs) will be substantially increased to safeguard the interests of domestic EV manufacturers.  
2. Despite significant growth in the two- and three-wheeler segments, passenger vehicles have only seen a marginal contribution to the EV market.  
Which of the statement(s) given above is/are correct?  
(a) 1 only  
**(b) 2 only**  
(c) Both 1 and 2  
(d) Neither 1 nor 2