

Factly Weekly

Compilation

2024

**For UPSC CSE Prelims
Exam**

**1st Week
May 2024**

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Subject: Polity and nation

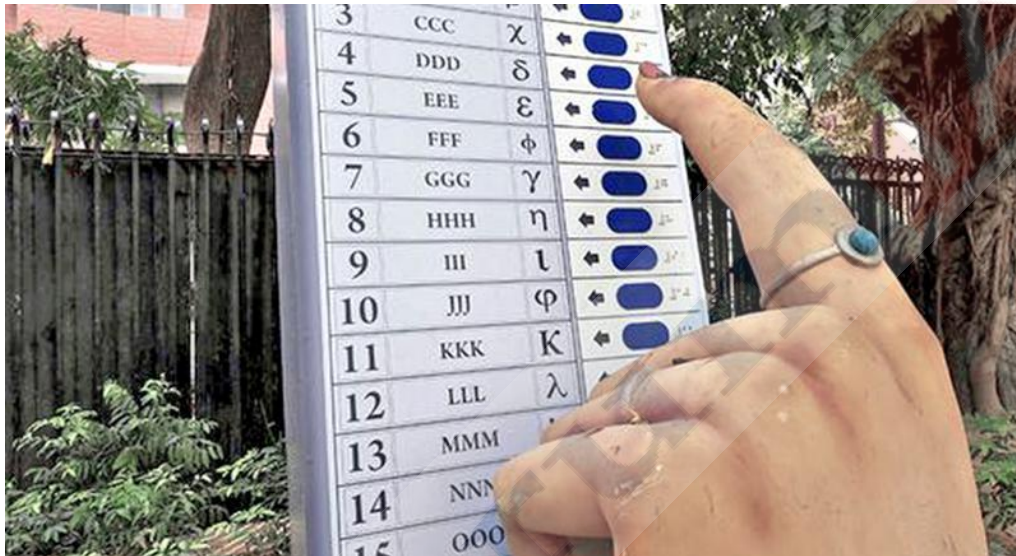
Election Commission Directives on EVM and SLU Handling and Storage

Why in the news?

The Election Commission released a revised protocol for handling and storing symbol loading units, complying with the supreme court directive.

Recently, SC directed that the Symbol loading units should be sealed and secured in a container and stored in a strongroom along with the EVMs at least for 45 days post the declaration of results.

Supreme Court Directive on EVM Handling and Storage:



Source: The Hindu

1. Seal and Storage SLUs: The Supreme Court mandated the sealing and storage of symbol loading units (SLUs) along with electronic voting machines (EVMs) in a container within a strongroom for a minimum of 45 days post-result declaration.

Note: SLUs are responsible for uploading the names and symbols of candidates onto Voter Verified Paper Audit Trail (VVPAT) or paper trail machines.

2. Provision for verification by Candidates- As per the court's directions, candidates ranked second and third in the elections can request verification of micro-controllers embedded in EVMs.

Election Commission Directives:

1. New protocol: As per the new protocol, the machines should be sealed and secured in a container and stored in a strongroom along with the EVMs for at least 45 days after the declaration of the results.

2. Infrastructure Creation: The Election Commission instructed State Chief Electoral Officers to establish appropriate infrastructure for handling and storing SLUs within EVMs in line with the updated protocols.

3. Container Preparation: EC also directed that adequate SLU containers, typically two to four per Assembly constituency should be prepared beforehand as per anticipated requirements.

4. Implementation Date: The revised protocols are effective for all symbol loading processes in VVPATs conducted on or after 1st May 24.

Hindu Marriage Act 1955

Why in the News?

The Supreme Court has held that mere registration of marriage, in absence of a proper ceremony, would not be valid under the Hindu Marriage Act. Through this judgement, the supreme court has recognized the practice of 'samskara', which is a sacrament that must be followed in a Hindu marriage.

The court considered that marriage is sacred under the Hindu Marriage Act for it provides a lifelong, dignity-affirming, equal, consensual and healthy union of two individuals.

About Hindu Marriage Act (HMA) 1955

1. About Hindu Marriage Act (HMA): It is legislation that regulates Hindu marriages and divorce by codifying laws concerning these aspects within the Hindu community.

2. Applicability: The HMA applies to individuals who are Hindu by birth or through conversion. It also includes Buddhists, Jains, and Sikhs.

3. Provisions:

a) Marriageable Age: Under the HMA, the minimum age for marriage is set at 21 for the bridegroom and 18 for the bride. Marrying minors is punishable by imprisonment for up to three years and/or a fine of up to Rs 1 lakh.

b) Recognition of Customs and Ceremonies: The HMA respects customary practices, including the essential ritual of Saptapadi, where the bride and groom take seven steps before the sacred fire.

c) Prohibition of Bigamy and Polygamy: The Act prohibits bigamy, polygamy, or polyandry. Section 5 declares having two living spouses simultaneously illegal and punishable under Sections 494 and 495 of the Indian Penal Code.

d) Mental health as a criterion for void marriage: Under the act, Marriages are deemed void if one or both parties are mentally unfit. Legal consent is required in such cases.

e) Registration provision: Registration is subject to state laws. However, lack of an official certificate does not invalidate a marriage.

f) Divorce provision: Divorce is permitted through mutual consent or judicial separation. Special circumstances may warrant divorce before one year of marriage. Various grounds for divorce are specified, including those allowing wives to seek divorce from their husbands.

g) Restitution of Conjugal Rights: The HMA includes provisions for restitution of conjugal rights, which allows a spouse to seek legal intervention if the other unjustifiably leaves.

i) Legal Procedures: Family courts handle matters concerning Hindu marriages and divorce. Cases are heard in courts of territorial jurisdiction based on the place of marriage, residence, or last cohabitation.

SC directive on promoting products in media

Why in the News?

The Supreme Court has mandated that **advertisers must provide self-declarations to confirm the accuracy of their product claims before advertising in the media**, aiming to protect consumers from deceptive marketing.

This ruling was prompted by a case involving misleading advertisements by Patanjali Ayurved.

About the SC directive on promoting products in media

1. S.C directed the advertisers to **submit self-declarations**, affirming the accuracy of their product claims, before promoting them through various media channels.

2. Implementation Plans:

a) To enforce this directive effectively, advertisers are mandated to adhere to the **Cable TV Network Regulations Rules of 1994**.

b) Advertiser **must upload their self-declarations on the Information and Broadcasting Ministry's 'Broadcast Seva' portal** before airing ads on TV channels. Copies of these declarations are also required to be provided to the broadcasters.

c) A **similar portal for print advertisers** will be established within a four-week timeframe.

3. Responsibility of Promoters: The Supreme Court has **emphasized on the responsibility** of social media influencers, celebrities, and public figures endorsing products. They have been **urged to possess sufficient knowledge about the products** they promote and to ensure that their endorsements are not contributing to deceptive advertising practices.

4. Enhanced Consumer Protection Measures:

a) Recognizing the importance of consumer empowerment, the Court has directed the Centre to **establish a clear and accessible procedure for filing complaints** against misleading advertisements.

b) Consumers are entitled to be **informed of the outcomes of their complaints**, ensuring transparency and accountability.

5. Government Action: The Ministry of Health has been directed to **furnish data regarding complaints** received by the Food Safety and Standards Authority of India (FSSAI) pertaining to misleading advertisements and misbranding of food and health products. This transparency aims to **bolster consumer trust and regulatory efficacy** in the realm of product advertising and marketing.

Subject: Governance

NIN's Dietary Guidelines

Why in the News?

With noncommunicable diseases (NCDs) such as cardiovascular diseases, cancers, and diabetes on the rise, **India's National Institute of Nutrition (NIN) has released comprehensive dietary guidelines targeting vulnerable groups**, including pregnant and lactating women, children, and the elderly.

About NIN's Dietary Guidelines

- 1. Addressing Disease Burden:** Unhealthy diets contribute to approximately 4% of India's disease burden. These guidelines stress the **importance of dietary improvements** to prevent NCDs such as Type 2 diabetes and heart disease.
- 2. Focus on Vulnerable Groups:** **Optimal nutrition** during critical periods like pregnancy, lactation, and early childhood is crucial for proper growth and development. Alarming rates of lifestyle-related conditions among children and adolescents underscore the need for targeted interventions.
- 3. Dual Nutrition Challenge:** **Micronutrient deficiencies are prevalent among children** aged 1 to 19, alongside persistent concerns such as anaemia. Additionally, obesity rates have surged, highlighting the dual challenge of undernutrition and overnutrition.
- 4. Importance of Dietary Guidelines:** The guidelines **advocate for healthy dietary practices, including reducing salt intake and limiting consumption of highly processed foods.** Tailored recommendations are provided for pregnant and lactating women, infants, children, and the elderly, emphasizing the consumption of nutrient-dense foods from diverse food groups.

Microbes producing more methane than fossil fuel- Study

Why in the News?

A recent study has shown that methane emissions from fossil fuels decreased from 1990 to the 2000s and have remained steady since then. The microbes have now emerged as the main source of methane.

Findings of the study

- 1. Microbes as the primary source of new methane-** The recent study has revealed that microbes are the primary sources of new methane in the atmosphere. **Anaerobic archaea** has been identified as potential major sources of atmospheric methane.
- 2. Location of the Methane Releasing Microbes-** These microbes (**methanogens**) **thrive in oxygen-deficient environments.** They can be found in various settings, which includes the **digestive tracts of animals, wetlands, rice paddies, landfills,** and the **sediments of lakes and oceans.**

About Methane Emissions

1. Global Warming Potential of Methane-

- a) Methane is the **second most abundant anthropogenic greenhouse gas** after carbon dioxide (CO₂). However, it has a higher warming potential over shorter periods.
- b) Over a century, methane's global warming potential is **28 times greater than CO₂.**

2. Sources of Methane emission: It falls into two main categories:

- a) **Biogenic Methane:** It is produced by microbial action, particularly by methanogens.
- b) **Thermogenic Methane:** It is released during the extraction of fossil fuels (natural gas or oil) from deep within the Earth's crust.

3. Action to address methane emission: Policymakers have recently focused on addressing methane emissions to combat global warming. The 'Global Methane Pledge' was launched at the U.N. climate talks in 2021 to reduce methane emissions.

Subject: Environment

Bhadra Tiger Reserve

Why in the News?

Recently, there has been an increase in the number of visitors to the Bhadra Tiger Reserve for safaris. It is important for tourists to take proper precautions to avoid disturbing this environmentally sensitive area.

About Bhadra Tiger Reserve



Source: Wikipedia

Specifications	Details
Location	<ol style="list-style-type: none">1) It is located in the midst of the Western Ghats region of Karnataka.2) It is surrounded by hill ranges of Mullaianagiri, Hebbegiri, Gangegiri, and Babaudangiri.3) It is the first official tiger reserve to finish a successful village relocation programme and a success story in wildlife conservation.4) The Bhadra Sanctuary was declared India's 25th Project Tiger in 1998 and listed its name in the list of national bird sanctuaries of Karnataka.
Rivers	It is also located near the Bhadra river and its tributaries such as Somavahini, Thadabehalla, and Odirayanahalla. A dam has been built across the Bhadra river near Lakkavalli.
Vegetation	Southern Tropical Dry Deciduous Dry Teak, Northern Tropical Dry Deciduous Mixed Forest, Dry Deciduous Scrub Forest, Boswellia Forest, Dry Bamboo Brakes, and Anogeissus pendula Forest are the major forest types found in the Reserve.

Flora	Teak, Rosewood, Mathi, Honne, Nandi and many medicinal plants etc.
Fauna	Tiger, Leopard, Leopard cat, Dholes, Indian Civet, ungulates like Gaur, Sambar and Barking Deer are commonly found.

Carbon Farming

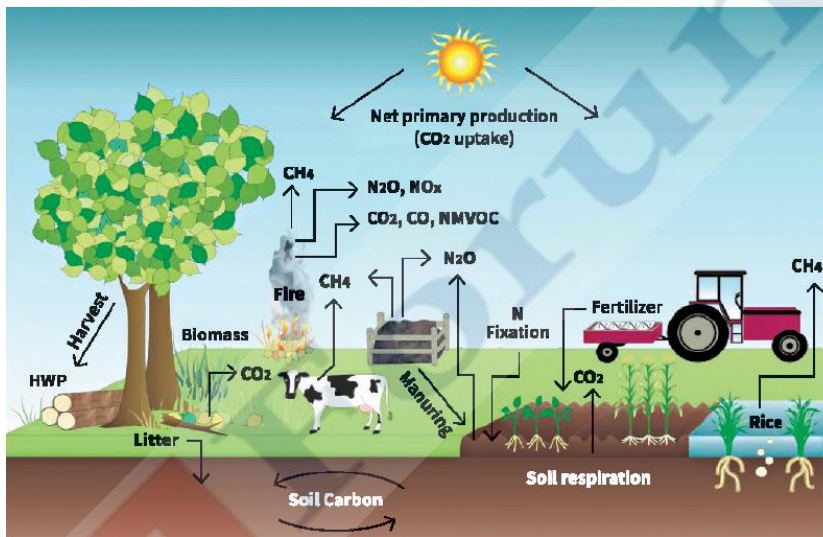
Why in the News?

Amid growing environmental challenges and the quest for climate-resilient sustainable agriculture, the practice of carbon trading in the agriculture sector has become important around the world.

The carbon farming approach aims to optimize carbon capture by utilizing practices that enhance the removal of CO₂ from the atmosphere and its storage in plant material and soil organic matter.

About carbon farming:

The process of emitting and removing greenhouse gas emissions in managed farmland



Source: 'Carbon farming - Making agriculture fit for 2030', a study for the European Parliament's committee on Environment, Public Health and Food Safety

Figure 1. Source: The Hindu

1. About Carbon farming: Carbon farming is an agricultural method that integrates the management of carbon capture and storage into farming practices.

2. Objective: It is designed to reduce greenhouse gas emissions, enhance the carbon content of soil, and improve overall agricultural productivity and ecosystem health.

3. Strategies involved: Carbon farming can involve multiple strategies and each practice is tailored to fit different agricultural landscapes and climatic conditions, making carbon farming versatile and widely applicable.

About Carbon Farming Practices and Their Benefits

1. Rotational Grazing: It involves rotating livestock across different pastures. This technique helps to maintain soil health and increase carbon sequestration in the soil.

2. Agroforestry Practices: It is a land use practices where trees or shrubs are grown around or among crops or pastureland.

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a) Silvopasture: It involves **integrating trees, pasture, and livestock**. It sequesters carbon and also diversifies farm income.

b) Alley Cropping: It involves planting rows of trees or shrubs between crops to provide shade, reduce erosion, and enhance carbon storage.

3. Conservation Agriculture:

a) Zero Tillage: It **reduces soil disturbance** to maintain soil structure and organic content.

b) Crop Rotation and Cover Cropping: It involves **alternating crops** and using cover crops to improve soil health and biodiversity.

c) Crop Residue Management: It includes practices like **stubble retention** and composting help enhance soil organic matter.

4. Integrated Nutrient Management: This involves **using organic fertilizers** and compost to promote **soil fertility** and reduce greenhouse gas emissions.

5. Agro-Ecological Approaches:

a) Crop Diversification and Intercropping: These practices **improve ecosystem resilience** by diversifying plant species, which helps in pest control and nutrient balance.

6. Livestock Management: It involves **optimizing feed quality, managing animal waste, and using rotational grazing** to reduce methane emissions and increase carbon storage in pastures.

7. Management of Excessive carbon through additional carbon sinks- The launch of the '4 per 1000' initiative during the **COP21 climate talks in 2015** in Paris highlights the particular role of sinks in mitigating greenhouse-gas emissions. As the **oceans and the atmosphere are filled with carbon**, and they approach their saturation points, carbon farming can help in effective sequestration.

Challenges of Carbon Farming

1. Geographical and Climatic Limitations: **Optimal carbon sequestration** requires long growing seasons and sufficient water, and it is thus **challenging in hot, dry areas** where water is scarce.

2. Soil and Biodiversity Constraints: Effective carbon sequestration is hindered by **poor soil quality** and **limited biodiversity**.

3. Water Resource Management: Plant growth is restricted in **arid region due to water scarcity**. This impacts carbon sequestration and makes water-intensive practices like cover cropping impractical.

4. Economic and Financial Barriers: Adopting carbon farming can be **costly initially and thus deter its adoption among small-scale and resource-poor farmers**.

5. Policy Support and Community Engagement: Effective carbon farming requires robust policy support and active community involvement for successful adoption and scalability.

India Becomes Third Largest Producer of Solar Power

Why in News

According to a report by international energy analytics agency Ember, **India has overtaken Japan to become the world's third-highest producer of solar power in 2023**. India generated 113 billion units (BU) of solar power in 2023 compared to Japan's 110 BU.

What is the Status of Installed Power and Solar Power in India

1. India's ranking in terms of Installed Power Capacity- The installed power capacity includes both renewable and non-renewable energy. In terms of installed capacity, India is at 5th position in the world.

2. Gap in Solar Power production due to demand-supply mismatch- According to NITI aayog, while **solar power constitutes 18% of India's total installed electricity of 442 GW**, it **contributes to only 6.66% of the power production**. This reflects a gap between the potential and actual solar power produced. This gap in solar power produced is dependent on country's power demand and local circumstances.



INDIA'S CLIMATE TARGETS: EXISTING AND NEW

Target (for 2030)	Existing: First NDC (2015)	New: Updated NDC (2022)	Progress
Emission intensity reduction	33-35 per cent from 2005 levels	45 per cent from 2005 levels	24 per cent reduction achieved in 2016 itself. Estimated to have reached 30 per cent
Share of non-fossil fuels in installed electricity capacity	40 per cent	50 per cent	41.5 per cent achieved by the end of June this year
Carbon sink	Creation of 2.5 to 3 billion tonnes of additional sink through afforestation	Same as earlier	Not clear.

Source- The Indian Express

Who are the Leaders in Solar Power Production

1. China tops in the Solar Power Production- China is the leading producer of solar power in the world, with **584 BU of solar power in 2024**. It is more than the next four countries combined, that is **the United States, India, Japan, and Germany**.

2. US is at the Second Spot- India needs to more than double its current solar production to overtake USA, which is at the second spot with 228 BU of Solar Production.

Status of Renewable energy in the World

1. Expansion of renewable energy- Renewable energy's share in the global electricity production has expanded from **19% in 2000** to **30% in 2023**. This is driven mainly by an increase in solar and wind power.

2. China is the main driver of the increase- China alone accounts for **51% of the additional global solar generation** and **60% of new global wind generation in 2023**.

3. Generation of electricity from low Carbon Sources- World generates **40% of its electricity from low carbon sources**, which includes renewable sources and nuclear Power.

Sonai Rupai Wildlife Sanctuary

Why in the News?

The National Green Tribunal (NGT) has directed the Chief Secretary of Assam to identify officials who permitted the construction of polling stations, schools, and other structures within a wildlife sanctuary and a reserve forest, violating the Forest (Conservation) Act of 1980.

About Sonai Rupai Wildlife Sanctuary

Aspect	Details
Location	1. It is a protected area located in the Indian state of Assam . 2. It is situated in the foothills of the Eastern Himalayas . 3. It is known as the "Jewel of Assam" .
Neighbouring protected areas	It is bordered by the Pachnoi River to the west, Jia Gabharu to the east, the Doimara Reserve Forest in Arunachal Pradesh to the north, and the revenue village and Charduar Reserve Forest of Sonitpur to the south.
Status	It was declared a wildlife sanctuary in 1998.
River flowing through	There are four perennial rivers that flow through the sanctuary: Dolsiri, Gabharu, Gelgeli, and Belsiri . During the rainy season, several wetlands known as "bheels" can also be seen.
Flora	1. The forests type in the sanctuary comprises tropical evergreen, semi-evergreen and moist deciduous forests . 2. Hollang, Mekai, Dhuno, Udiyam, Nahar, Samkothal, Bheer, Hollock, Nahor are found in the sanctuary.

Fauna	<p>1. The sanctuary is primarily known for its Elephant and Indian bison populations. It hosts a variety of other animals including deer, the one-horned rhinoceros, leopards, tigers, and some rare species of cats.</p> <p>2. The avian life in the sanctuary features endangered species such as the White Winged Wood Duck, along with commonly seen birds like woodpeckers, hill mynas, Indian rollers, nightjars, horned owls, and more.</p>
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Foot Rot Disease

Why in the news?

Ludhiana's Punjab Agricultural University (PAU) has developed a **biocontrol agent, Trichoderma asperellum**, to combat foot rot disease in Basmati rice varieties. Foot rot is a prevalent issue that reduces yields and threatens the state's export prospects.

About Foot Rot Disease



Source: Agriculturistmusa

Aspects	Description
What is it?	Foot Rot is a fungal disease affecting Basmati rice , most vulnerable at the seedling stage and potentially after transplantation if infected seedlings are used.
Causal Agent	The disease is caused by the fungus Fusarium verticillioides . It is both soil and seed-borne. It spreads through the plant's roots and colonizes the stem base.
Symptoms	Infected seedlings initially turn pale yellow , then elongate, dry up, and often die.

Current Treatment Methods	<p>a) Biological: Seedlings are treated with Trichoderma harzianum before sowing and transplantation to prevent fungal growth.</p> <p>Note: It is a biocontrol agent that provides an eco-friendly alternative to conventional pesticides, helping in disease management while reducing environmental impact.</p> <p>b) Chemical: Seeds are treated with fungicides such as Sprint 75 WS (a combination of carbendazim and mancozeb) before sowing. However, these chemical treatments can negatively affect the soil and pose toxicity risks to consumers.</p>
Regulatory Action	The fungicide carbendazim has been banned in Punjab due to concerns over high residue levels left in crops.

Species in news

Red Colobus Monkey

Why in the News?

With the increasing biodiversity crisis, Conservationists have suggested Conservation of red colobus monkey species. Their conservation could have cascading net positive impacts on African tropical forest health.

About red colobus monkey

Source: Sean Crane Photography

Aspect	Details
About	The world monkey family consists of two major groups- Colobines and Cercopithecine . Colobines - Are primarily leaf-eaters. Red Colobus monkey belongs to this group . This Group also includes langurs from South and Southeast Asia. Cercopithecine - These are omnivores and include animals in their diet. It includes macaques of south and southeast Asia and the mangabeys, mandrills, drills and baboons of Africa.
Habitat and Location	Location - They are primitive monkey species native to western, central, and eastern Africa. They are found from Senegal in the west to the Zanzibar Archipelago in the east . Habitat - Their habitats include humid forests, coastal thickets, and scrub.
Vulnerability Status	They have been listed as one of the world's 25 most endangered primates by the IUCN .
Features	<ol style="list-style-type: none"> Appearance- They have brown and orange coat, white whiskers and a black scalp. Distinctive feature- Unlike other monkey species, colobus monkeys do not have thumbs. Instead of thumbs, they have a small remnant bump. Nature- They are primarily arboreal and are mostly restricted to humid forests. Diet- They are mainly herbivores and thus feed upon young leaves, flowers, and unripe fruit. They are also known to eat charcoal or clay which help them to combat the cyanide some leaves may contain.

What are the Threats to the Red Colobus Monkey

There have been various threats to the survival of the primitive species:

- a) **Habitat loss**- It is the primary threat to colobus monkeys today due to **expansion of human populations**.
- b) **Hunting**- They have been hunted for their **beautiful fur and skin** as it has been used to make dance costumes, hats, and capes.
- c) **Predators**- They are often **preyed upon by other predators** such as chimpanzee, leopard etc.

What Conservation efforts are required

Being an indicator species, red colobus monkey needs conservation measures such as:

- a) **Financial support**-More **economic investment to create and manage protected areas** for red colobus monkeys.
- b) **Community engagement**- There is need to **provide support to and engaging with communities** that live in proximity to these primates.
- c) **Survey based study**-**Survey should be carried out** to estimate the exact populations of these monkeys and creating awareness about their conservation value.
- d) **Legal safeguard**- They **require legal safeguards** and should be **designated as priority species for conservation** in national legislations and international agreements.

World Press Freedom Index 2024

Why in the News?

In the World Press Freedom Index 2024, India is ranked 159 out of the 180 nations.

About World Press Freedom Index:

Aspects	Description
About	The World Press Freedom Index (WPFI) is an annual ranking of countries compiled and published by Reporters Without Borders (RSF).
Purpose	It compares the level of freedom enjoyed by journalists and media in 180 countries and territories.
Methodology	RSF evaluates countries based on various indicators related to press freedom. These indicators include- a) media independence b) legal framework c) safety of journalists
Indicators	The ranking is based on five Indicators - Political, legislative, economic, sociocultural and safety of journalists.

Findings of World Press Freedom Index 2024:

The shaky fourth pillar

The data for the charts are sourced from Reporters Without Borders' World Press Freedom Index



Table 2: The table lists the 2024 press freedom rankings of select countries

Country	Rank
Norway	1
Denmark	2
Sweden	3
South Africa	38
Nepal	74
Brazil	82
Maldives	106
Ethiopia	141
Bhutan	147
Sri Lanka	150
Pakistan	152
Palestine	157
Turkey	158
India	159
UAE	160
Russia	162
Bangladesh	165
Egypt	170
China	172
Iran	176
Afghanistan	178
Syria	179
Eritrea	180

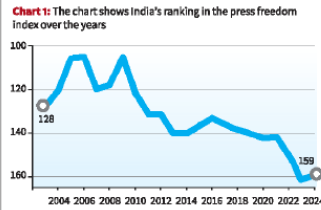


Table 3: The table lists the biggest losers and gainers in the press freedom rankings of 2024, compared with 2019

Country	Rank 2024	Rank 2019	Difference in rank
Central African Republic	76	145	+69
Timor-Leste	20	84	+64
Montenegro	40	104	+64
Eswatini	85	147	+62
Mauritania	33	94	+61
Moldova	31	91	+60
North Macedonia	36	95	+59
Gabon	56	115	+59
Bulgaria	59	111	+52
Burundi	108	159	+51
Thailand	87	136	+49
Republic of Congo	69	117	+48
Qatar	84	128	+44
Ukraine	61	102	+41
Peru	125	85	-40
Georgia	103	60	-43
Lesotho	122	78	-44
Senegal	94	49	-45
Madagascar	100	54	-46
Tunisia	118	72	-46
Nicaragua	163	114	-49
Burkina Faso	86	36	-50
El Salvador	133	81	-52
Papua New Guinea	91	38	-53
Afghanistan	178	121	-57
Hong Kong	135	73	-62
Bhutan	147	80	-67

Figure 2. Source: The Hindu

1. India's Press Freedom Ranking: India is ranked 159th in the 2024. It was ranked 161st in the 2023. This ranking places India alongside nations like the occupied Palestinian territories, UAE, Turkey, and Russia, indicating poor press freedom.

2. India's past performance: India has consistently ranked over 100 since 2003, showing a long-term trend of limited press freedom. The country's press freedom situation has deteriorated rapidly in recent years.

3. Global Comparisons:

a) **Scandinavian countries** (Norway, Denmark, Sweden) **top the rankings** with the highest press freedom. **Eritrea, Syria, and Afghanistan rank the lowest.**

b) Among BRICS nations, **Brazil and South Africa rank higher than India**, whereas **China and Russia are lower.** In South Asia, India ranks lower than all countries except Bangladesh.

4. Global Trends: The global trend shows a **decline in press freedom**, with an average drop of 7.6 points worldwide, accompanied by an increase in political repression of journalists and media.

a) **Press freedom remains robust primarily in European Union countries**, which recently implemented their first media freedom law (EMFA). In contrast, the **Maghreb and Middle East regions** face the **most severe government-imposed press restrictions.**

b) **Bhutan, Hong Kong, and Afghanistan** have seen significant **declines in press freedom** since 2019 whereas **Central African Republic, Timor-Leste, and Montenegro** have shown **notable improvements.**

Read more: [World Press Freedom Index 2023](#)

Subject: International relations

Global biofuel alliance

Why in the News?

Recently, the Ministry of Petroleum and Natural Gas has stated that the Global Biofuel Alliance (GBA) has initiated a work plan. This plan concentrates on evaluating national contexts, formulating policy frameworks, and organizing biofuel workshops.

Global biofuel alliance



Source: The Indian Express

Aspects	Description
About	<p>1. The Global Biofuel Alliance (GBA) was launched on the sidelines of the 2023 G20 summit in New Delhi.</p> <p>2. The Alliance is focused on securing the supply of biofuels, ensuring affordability and sustainable production of biofuels.</p>
Aim	<p>It aims at facilitating international cooperation and intensifying the use of sustainable biofuels. It aims to facilitate global biofuels trade and provide technical support for national biofuel programmes.</p>
Membership	<p>1. Member nation: It has been initiated by India, the United States, and Brazil. It has nine member countries: India, the US, Brazil, Argentina, Bangladesh, Italy, Mauritius, South Africa, and the UAE.</p> <p>2. Organisation members: The World Bank, Asian Development Bank, World Economic Forum, International Energy Agency, International Energy Forum, International Renewable Energy Agency, and International Civil Aviation Organization are among the organisations that have agreed to join the alliance.</p>
Functions	<p>1. The Global Biofuel Alliance aims to increase biofuel usage by:</p> <ol style="list-style-type: none"> Facilitating advancements in biofuel technology Promoting the use of sustainable biofuels to address concerns about indirect land use change (ILUC), Developing robust standards and certifications. <p>2. It will serve as a knowledge centre to enhance global cooperation and ensure the secure and affordable availability of biofuels.</p>

About Biofuel

1. About Biofuels: It refers to **renewable fuels derived from biomass—from plants or agricultural, animal, domestic, and industrial biowaste**. Biofuels are significantly cleaner than the conventional fossil fuels.

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2. Biofuel Potential: The International Energy Agency (IEA) forecasts a **significant surge in biofuel production by 2050**, projecting growth of 3.5-5 times, driven by global Net-Zero targets. This presents a substantial opportunity for India.

3. India's Contribution to Global Biofuel Procurement: In 2022, a record-breaking 171.2 billion liters of biofuels were procured worldwide, with India accounting for a mere 2.7%, or 4.6 billion liters. **India also maintains its position as the third-largest ethanol producer globally**, trailing only the United States (US) and Brazil.

Antarctic Treaty Consultative Meeting

Why in the news?

India plans to announce its **intention to build a new research station in Antarctica at the Antarctic Treaty Consultative Meeting** which will be held in Kochi later this month.

About the Antarctic Treaty Consultative Meeting

Aspects	Description
What is it?	The Antarctic Treaty Consultative Meeting (ATCM) is an annual gathering of the Parties to the 1959 Antarctic Treaty . The ATCM consists of the original twelve signatories of the Antarctic Treaty and other nations that conduct significant research in Antarctica.
Purpose	Its primary goals are to share information, discuss issues of mutual interest related to Antarctica , and propose measures to governments in line with the Treaty's principles.
Frequency and Hosting	1. The ATCM has been an annual event since 1994 . 2. Hosting duties rotate among the Consultative Parties in alphabetical order of their English names. 3. Participants include: a. Consultative Parties: Original Treaty signatories and others conducting substantial research. b. Non-Consultative Parties: Countries with an interest in Antarctic affairs. c. Observers and Experts: Organizations like the Scientific Committee on Antarctic Research (SCAR) and the International Association of Antarctica Tour Operators (IAATO).
Decision-Making Process	The ATCM makes decisions through Measures, Decisions, and Resolutions: a. Measures are legally binding once ratified by all Consultative Parties. b. Decisions relate to the ATCM's organizational matters and are non-binding . c. Resolutions offer guidance and are not legally enforceable . Although only Consultative Parties have decision-making power, all members contribute to discussions.

About CEP

Factly Compilation May (First Week) 2024

1. The Committee for Environmental Protection (CEP) is a **key advisory body** established under the **Protocol on Environmental Protection to the Antarctic Treaty**, commonly known as the Madrid Protocol, which was adopted in **1991**.
2. The primary role of the CEP is **to provide advice and recommendations to the Antarctic Treaty Consultative Meeting (ATCM)** on matters concerning the conservation and environmental protection of Antarctica.
3. This includes **overseeing the implementation of the Madrid Protocol** and suggesting new ways to enhance the environmental stewardship of the Antarctic region.

U.N. Counter-Terrorism Trust Fund

Why in the news?

India recently donated \$500,000 to the UN Counter-Terrorism Trust Fund, reinforcing its steadfast dedication to the global battle against terrorism.

About United Nations Counter-Terrorism Trust Fund (UNCTF)

Aspects	Description
What is it?	1. It was established in 2009 and subsequently incorporated into the UN Office of Counter-Terrorism (UNOCT) in 2017. 2. This framework allows the UNCTF to effectively address the evolving challenges of global terrorism by fostering international cooperation and strengthening the capacities of vulnerable regions.
Focus	The programs funded are primarily focused on enhancing the capacity of member states in eastern and Southern Africa to tackle the significant challenges of financing terrorism and curtailing the movement and travel of terrorists.
Contributors	The fund accepts donations from a broad array of contributors , including governments, intergovernmental and non-governmental organizations, private institutions, and individual donors.
Contribution Types	Contributions can be unrestricted or specifically earmarked for one of UNOCT's global programs or targeted initiatives.
Use of Contributions	India's recent financial contribution is specifically aimed at bolstering UNOCT's initiatives , such as the Countering Financing of Terrorism (CFT) and the Countering Terrorist Travel Programme (CTTP) .

About UN Office of Counter-Terrorism (UNOCT)

1. **About UN Office of Counter-Terrorism (UNOCT):** It was established on June 15, 2017, by the United Nations General Assembly.
2. **Purpose:** The UN Office of Counter-Terrorism (UNOCT) serves as a pivotal entity in the global counter-terrorism efforts.
3. **Functions and responsibilities of UNOCT:**

a) Leadership Role: UNOCT provides guidance on the counter-terrorism mandates that the General Assembly has entrusted to the Secretary-General, coordinating efforts across the United Nations system.

b) Coordination and Coherence: The office enhances coordination among the entities of the Global Counter-Terrorism Coordination Compact to ensure the effective implementation of the four pillars of the UN Global Counter-Terrorism Strategy.

Subject: Science and technology

Thrombocytopenia Syndrome (TTS)

Why in the News?

Recently, concerns were raised over the rare side effects of the AstraZeneca-Oxford COVID vaccine. AstraZeneca has admitted that its vaccine can cause Thrombocytopenia Syndrome (TTS) in rare case.

About Thrombocytopenia Syndrome (TTS)

1. About Thrombocytopenia Syndrome (TTS): It is a **rare condition** in which there is simultaneous **occurrence of blood clots (thrombosis) and a low platelet count (thrombocytopenia)**. It is also known as '**vaccine-induced immune thrombotic thrombocytopenia**' (VITT).

Note: **Thrombosis** is the **formation of a blood clot**, which can reduce normal blood flow in an affected blood vessel.

2. Symptoms: Various symptoms are linked to TTS, such as **shortness of breath, chest or limb pain, tiny red spots or bruising on the skin beyond the injection site, headaches, and numbness in certain body regions**. TTS may result in restricted blood flow due to clot formation.

3. Diagnosis and treatment:

Diagnosis- Diagnosis of TTS involves a combination of blood tests and imaging studies, such as CT scans.

Treatment- Treatment for TTS is typically comprised of the following-

- a. **Anticoagulant medications** to prevent further clotting.
- b. **Intravenous immunoglobulin (IVIG)** which involves infusing a blood product containing antibodies
- c. **High-dose prednisone**, which is a form of steroid medication.

How are TTS and blood clots linked to the AstraZeneca vaccine?

1. TTS was a rare syndrome reported in people who received a Covid-19 **adenovirus vector-based vaccine**. The incidence of TTS has been **marginally higher among individuals under 60 years of age**.
2. TTS can be seen in various body regions, **including the brain, the abdomen, the lungs, limb veins and arteries**.
3. The process that causes TTS is not fully understood, but it is believed to be similar to **heparin-induced thrombocytopenia (HIT)** which is also a rare reaction to a medicine called heparin that affects how platelets works.

UPSC Syllabus: Science and technology (Health)

Salmonella contamination in spices

Why in the news?

In last six months, U.S has rejected 31 per cent of all spice-related shipments from Mahashian Di Hatti (MDH) due to salmonella contamination concerns. Recently, Hong Kong and Singapore have also suspended the sales of certain MDH and Everest Food Products.

Why such spices are being rejected?

1. Reasons for rejection- MDH export shipment have been rejected **due to salmonella contamination**. FDA inspection of MDH's manufacturing plant has also found **inadequate sanitary facilities and accommodations**, as well as contamination of equipment and utensils.

2. FDA Guidelines on Refused Shipments- As per the guidelines by the FDA, if a shipment is refused entry, the importer can either destroy it or export it out of the US.

About salmonella:

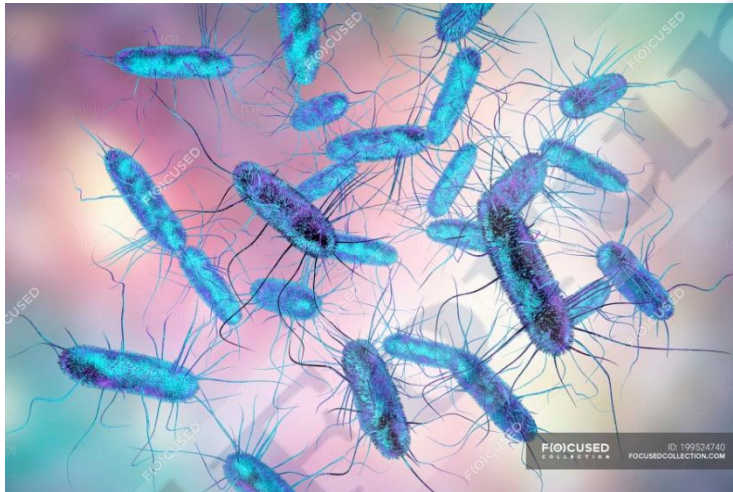


Figure 3. Source: BBC

1. About Salmonella: It is a type of bacteria that can **cause gastrointestinal illness and fever, known as salmonellosis**.

2. Nature of the bacteria: Salmonella is a **resilient and widespread bacteria**. It is **capable of surviving for weeks in dry environments and months in water**.

3. It naturally resides in the intestines of animals and can be present in their faeces.

4. How humans get impacted: Humans get infected when they come into contact with salmonella-infected animals or contaminated items.

5. Risks Associated with Salmonella:

a) Salmonella infection can lead to symptoms such as diarrhea, fever, and stomach cramps.

b) Certain groups, including children under 5 years old, adults over 65 years old, and individuals with weakened immune systems, are vulnerable to Salmonella infection.

Phishing Attacks in India

Why in the News?

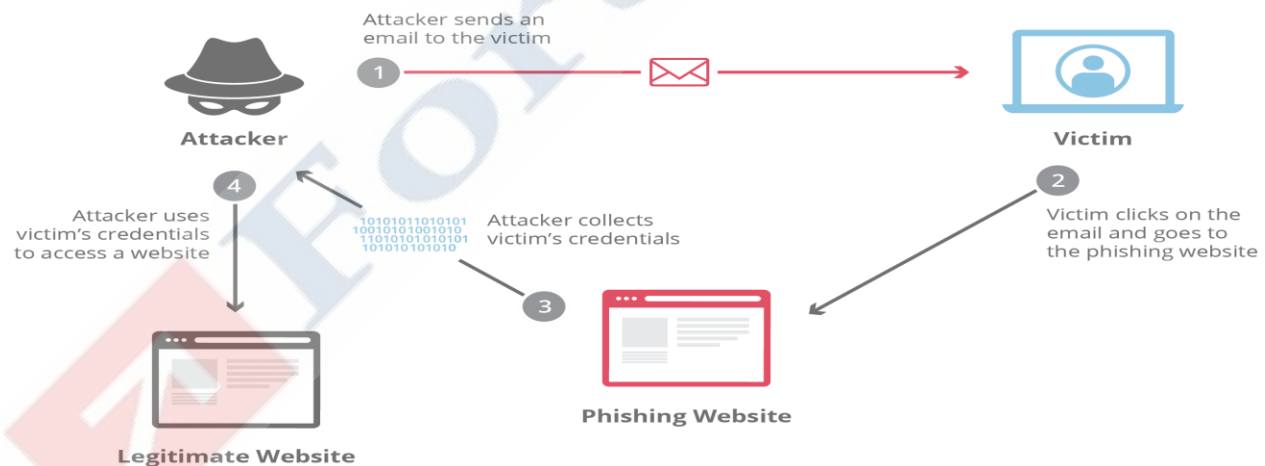
A report from Verizon Business has emphasized the rising incidence of phishing in India. Cybercriminals are resorting to **new and sophisticated methods** to deceive unsuspecting users into opening malicious emails or clicking on harmful links.

As a result, there is an **increased risk of users experiencing financial losses and the compromise of their personal data**.

Highlights of the study:

- The report highlighted that **there has been improvement in reporting practices of such incidents of phishing in India**. However only 20% of users now identify and report phishing during simulation tests.
- Another Report of the company reveals that **espionage attacks dominate the cyber security landscape in the Asia-Pacific region**, including India.
- In the **Asia-Pacific region**, 25% of cyberattacks stem from espionage, a stark contrast to the 6% and % in Europe and North America, respectively. **The Asia-Pacific region saw a 180% growth in vulnerability exploitation**.
- System intrusion, social engineering, and basic web application attacks** represent **95% of breaches** in Asian Pacific region.
- The study also found that the most common types of data compromised are **credentials (69%), internal (37%), and secrets (24%)**.

About Phishing



Source: Cloudflare

1. About Phishing: It refers to an attempt **to steal sensitive information** in the form of usernames, passwords, credit card numbers, bank account information or other important data to utilize or sell the stolen information.

2. How Phishing is done:

- In a phishing attack, the **sender pretends to someone trustworthy to the recipient**, such as a family member, the CEO of their company, or a well-known figure offering giveaways.

b) The **message prompts immediate action**, often with a sense of urgency and directing the recipient to a fake website resembling a legitimate one.

c) They are asked to input their login credentials which are then stolen by the attacker for identity theft, financial fraud, or selling personal information. **The phishing email's destination URL closely resembles the legitimate one.**

Supersonic Missile-Assisted Release of Torpedo (SMART) system

Why in the news?

The Defence Research and Development Organisation (DRDO) recently tested a Supersonic Missile-Assisted Release of Torpedo (SMART) system. This signifies a leap forward in India's defense technology.

It has been tested from a ground-based mobile launcher positioned at the **launching complex 4 of Abdul Kalam Island.**

About Supersonic Missile-Assisted Release of Torpedo (SMART) system



Figure 4. Source: PIB

1. **About:** SMART is a **next-generation missile-based light-weight torpedo delivery system.**

2. **Developed by:** It has been designed and developed by the **DRDO.**

3. **Aim:** It aims to **enhance the anti-submarine warfare capability of the Indian Navy.**

4. **Features:** It has several features which distinguish it with conventional range of lightweight torpedo.

a) It can be **launched from both coasts and warship.**

b) It is **canister-based missile system** which consists of several advanced sub-systems, namely **two-stage solid propulsion system, electromechanical actuator system, precision inertial navigation system etc.**

Note: The **system is canister-based** means that it is housed within a sealed container that can be easily transported and launched.

c) The system **carries advanced light-weight torpedo** as payload along with **parachute-based release system.**

d) It also **consists of several state-of-the-art mechanisms** such as symmetric separation, ejection and velocity control.

5. Significance: The SMART would enhance the Navy's strength and will revolutionize underwater warfare capabilities of India. It also serves as testament of India's advancements in indigenous defence research and development.

UPSC Syllabus: Science and technology (Defence)

Eta Aquariids meteor showers

Why in the News?

Eta Aquariids meteor showers are active from April 16 and will peak on May 5 and 6. These meteor showers are seen in May every year and are best visible in countries such as Indonesia and Australia in the Southern Hemisphere.

About Eta Aquariids meteor showers



Source: The Indian Express

About	The Eta Aquariid meteor shower is an annual celestial event that occurs when Earth passes through the orbital plane of Halley's Comet.
Origin	1. It is named after the Aquarius constellation, where its radiant point is located. Radiant points are the positions in the sky from which meteor showers appear to originate. 2. Eta Aquariids are associated with Halley's Comet, which orbits the Sun approximately once every 76 years. (The last time Halley's Comet was visible from Earth was in 1986, and Halley's comet is due to enter the inner solar system again in 2061)
Unique Characteristics	1. Rapid Speed and Glowing Tails- The Eta Aquariid meteor shower is known for its rapid speed, resulting in long-lasting, glowing tails that can persist for several minutes. 2. Observational Rates: Observers in the Southern Hemisphere typically witness 30 to 40 meteors per hour during the peak, whereas viewers in the Northern Hemisphere observe a

lower rate of around 10 meteors per hour .

Why number of Aquarid meteors decreases in Northern hemisphere?

The number of Aquarid meteors decreases in the Northern Hemisphere **due to their radiant point's position in the sky**. In the hemisphere, the radiant point appears to be skimming the earth. Hence termed as Earth gazers.

However, in the Southern Hemisphere, the radiant points are higher in the sky and more visible. Hence the meteors are more visible.

About comets and Meteors

Comets- Comets consist of **dust, rock, and ice**. They **travel around the Sun in highly elliptical orbits**, with some taking hundreds of thousands of years to complete one orbit. Currently, 3,910 comets are known, but many more are believed to exist **beyond Neptune in regions like the Kuiper Belt and the distant Oort cloud**.

Meteors- Meteors are **celestial objects**, including rocks and debris, that ignite and vaporize upon entering Earth's atmosphere, resulting in a luminous streak across the sky. Meteors are often referred to as **shooting stars or falling stars**. However, they are not stars.

Relation between Meteor showers and Comets- Comets play a significant role in meteor showers **by shedding dust and debris** along their orbits around the Sun. As comets approach the Sun, they heat up and release gases and dust, forming a glowing head that can be larger than a planet.

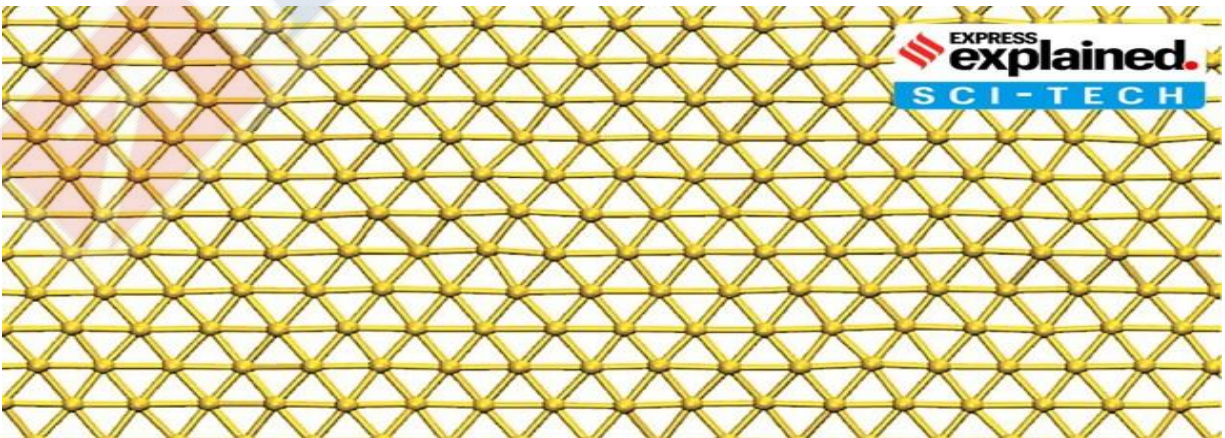
UPSC Syllabus: Science and technology (Space)

Development of Goldene

Why in the News?

For the first time, scientists have successfully developed a free-standing, single-atom-thick sheet of gold. This marks the first instance of a metal being transformed into a 2D sheet. This breakthrough paves the way for numerous exciting opportunities in the future.

About goldene



Source: Indian Express

Aspect	Description
About Goldene	Goldene is a 2-dimensional allotrope of gold , which means it consists of a single layer of gold atoms arranged in a two-dimensional structure.
Unique features	<p>i) It exhibits semiconductor properties when fabricated into this single-atom-thick layer. Typically, gold is known for its excellent conductivity, but it behaves differently in its goldene form.</p> <p>ii) These sheets of goldene are roughly 100 nanometres thick (a nanometre is a billionth of a metre), approximately 400 times thinner than the thinnest commercially available gold leaf.</p>
How is it created?	<p>i) Goldene has been created by first placing a single layer of silicon between titanium carbide layers.</p> <p>ii) Then gold is added which diffused into the structure and replaced the silicon, forming a monolayer of gold.</p> <p>iii) This was done with the help of an age-old Japanese technique using chemical popularly known as Murakami's reagent. This chemical is also used to forge katanas and high-quality knives.</p>
Potential applications	<p>i) Electronics Industry Revolution: Goldene ultra-thin and lightweight properties could significantly reduce the amount of gold needed in electronics.</p> <p>ii) Catalysis: As a catalyst, goldene offers economic benefits over traditional three-dimensional gold due to its efficiency and reduced material usage. This could be useful in various chemical processes.</p> <p>iii) Extension to Other Metals: The technique developed to create goldene could also be adapted to produce two-dimensional sheets of other precious metals like iridium and platinum, expanding the range of applications.</p> <p>iv) Special Properties for Advanced Applications: Goldene has a unique structure where each atom connects to six others, not twelve. This could lead to specific uses in turning carbon dioxide into other materials, producing hydrogen, and purifying water.</p>

UPSC Syllabus: Science and technology

MQ-9B Predator drones

Why in the News?

The Defence Ministry recently approved the procurement of **30 MQ-9B Predator drones (SeaGuardian variant) from the US** to enhance the surveillance capabilities of the armed forces.

About MQ-9B Predator drones



Source: Moneycontrol

Aspects	Description
What is it?	<ol style="list-style-type: none"> 1) It is an unmanned aerial vehicle (UAV) that can perform flight operations either under remote control or autonomously. 2) It is a version of the MQ-9 “Reaper”. 3) It is the first hunter-killer unmanned aerial vehicle (UAV) built for prolonged surveillance at high altitudes.
Developed by	It is developed by General Atomics Aeronautical Systems (GA-ASI) .
Features	<ol style="list-style-type: none"> 1) The MQ-9B features integrated signals and communications intelligence systems. It consists of various custom sensors can be fitted to it as needed. 2) It has two versions: the SkyGuardian and the SeaGuardian. 3) It is capable of remaining airborne for around 35 hours. 4) It is equipped with precision strike missiles. The MQ-9B has enhances capabilities in land and maritime surveillance, anti-submarine and anti-surface warfare, electronic warfare, and various expeditionary missions. 4) It facilitates automatic take-offs and landings, integrates into civil airspace, and enhances real-time situational awareness in maritime environments for both military and civil authorities. 5) It has carrying capacity of up to 5,670 kg and a fuel capacity of 2,721 kg. This boosts the operational capability of these drones.
Significance	<ol style="list-style-type: none"> 1) Unmanned armed vehicles play a crucial role at borders by providing real-time reconnaissance, target acquisition, and tracking of people and illegal activities through high-quality video feeds. 2) They also enhance security and operational efficiency by supporting the armed forces in transporting essential supplies.

UPSC Syllabus: Science and technology (Defence)

Magnetic resonance imaging

Why in the News?

The **Magnetic Resonance Imaging (MRI) market** is projected to hit \$9.8 billion by 2028. This technology plays a pivotal role in medical science, offering diverse applications throughout the human body.

About Magnetic resonance imaging (MRI)



Figure 5. Source: The HINDU

1. About MRI: It is a **non-invasive medical imaging technique** that provides detailed images of internal structure in the human body, including **organs, Bones, Muscles, Blood vessels and Joints.**

2. How Does MRI Work?

MRI leverages the magnetic properties of **hydrogen atoms**, which are **abundant**

in the body's fat and water content. The procedure involves four main components:

- Superconducting Magnet** that generates a strong magnetic field around the targeted body part.
- Radio frequency **Pulses** which excite hydrogen atoms, raising their energy level.
- Larmor Frequency** is the specific frequency at which hydrogen atoms resonate and absorb radio waves, varying by magnetic field strength and tissue type.
- After the pulse, hydrogen atoms emit energy as they revert to their normal state, which is **captured by a detector and converted into images by a computer.**

3. Significance of MRI:

- It is used to obtain images of **soft tissues within the body.** It is widely used to image the brain, the cardiovascular system, the spinal cord and joints, various muscles, the liver, arteries, etc.
- MRI is particularly **crucial for diagnosing and monitoring various cancers**, such as prostate and rectal cancer, and is also essential for tracking neurological conditions including Alzheimer's disease, dementia, epilepsy, and stroke.
- Functional MRI is **used to track changes in blood flow in the brain** which helps to understand how neuronal activity shifts.

Pros of MRI

- Versatile Imaging:** Due to its construction and the arrangement of magnets, an **MRI can image the body virtually from all useful directions** and in very fine increments as needed.
- Safety:** MRI uses magnetic fields and radio waves instead of ionizing radiation, **making it safer for patients** compared to other imaging modalities like X-rays and CT scans.
- No Residual Effects:** MRI scans are non-invasive, which means that the magnetic fields used do not have

lasting effects on the atoms in the body once the scan is complete.

4. Minimal Health Risks: Generally, MRI scans are associated with no long-term health risks, except for pregnant women.

Challenges associated with MRI

1. Cost: MRI machines are expensive, leading to high expenses for patients, particularly those without insurance or needing multiple scans.

2. Discomfort and Noise: Patients **endure discomfort and noise** while remaining still inside the MRI bore, especially challenging for claustrophobic individuals.

3. Safety Concerns: Strong magnetic fields in MRIs pose risks for individuals with metallic implants or embedded objects, potentially excluding them from undergoing scans

UPSC Syllabus: Science and technology (Health)

Neural Processing Unit

Why in the news?

Recently, Apple launched the M4 chip with the iPad Pro. Its key feature includes a 16-core Neural Engine which is equivalent to an NPU.

About Neural Processing Unit

1. About NPU: A Neural Processing Unit is a **specialized processor designed to accelerate neural network processes**. These neural networks are fundamental to machine learning algorithms for data processing. They are part of the semiconductors specifically designed for machine learning operations, which enables AI features such as generating text or images.

2. Applications:

i) NPUs excel in AI-related tasks like **speech recognition, natural language processing, and image or video editing processes** such as object detection.

ii) They enable **efficient handling of complex AI operations**, enhancing performance in consumer gadgets like smartphones, laptops, and tablets.

iii) **NPUs play a crucial role in efficiently** deploying AI-powered applications directly on hardware.

Differences Between NPU, CPU, and GPU

About CPU (Central Processing Unit): It processes instructions one at a time and ideal for tasks requiring sequential data processing. It is **best for general computing, applications, and systems operations**.

About GPU (Graphics Processing Unit): It is capable of multiple calculations simultaneously, optimized for graphics and complex computations. It focuses on **graphic rendering and resolution upscaling** and are also used in AI development stages.

About NPU (Neural Processing Unit): It is similar to GPUs but **exclusively optimized for neural network and AI computations**. It is more efficient and is less power-consuming for AI tasks, and running refined AI models on devices.

Subject: Schemes and programmes

Project ISHAN

Why in the News?

With the idea of One nation, one airspace, India has initiated Project ISHAN (Indian Single Sky Harmonized Air Traffic Management) at Nagpur. This project aims to **enhance the capacity of the aviation industry to handle the increasing domestic passenger numbers**, which has been predicted to double by 2030.

About Project ISHAN

1. About Project ISHAN: It is an **integration initiative** which seek to merge India's four Flight Information Regions (FIRs) in Delhi, Mumbai, Kolkata, and Chennai into **one airspace around Nagpur**.

Note: In aviation, a flight information region (FIR) is a specified region of airspace in which a flight information service and an alerting service (ALRS) are provided.

2. Aim: The aim behind the initiative is to **reduce carbon footprint, enhance safety, and reduce aircraft fuel usage**.

3. Advantages: A single flight information region (FIR) created as part of Project ISHAN would offer numerous advantages in terms of **safety, efficiency, user satisfaction, reduced carbon footprint, and optimal manpower utilization**.

4. Challenges in implementing the ISHAN Initiative: There are several challenges in implementation such as **standardization of technology, revision of procedures, and formulation of new policies**.

For the better implementation of ISHAN initiative, there will be requirement of **Uniform technology implementation** across all regions, **comprehensive retraining** of air traffic control officers, **policy reforms and updates** to accommodate new processes and technologies.

CBSE emphasizing on promoting mother tongue in learning

Why in the News?

The Central Board of Secondary Education (CBSE) has issued a circular instructing schools to prioritize educational material focusing on learning in students' mother tongues. This initiative aligns with the **National Education Policy, 2020**, and the **National Curriculum Framework, 2022**, which advocate for teaching and learning in local languages.

About the Initiative:



Figure 6. Source: The Hindu

a) CBSE has urged schools to utilize educational materials emphasizing learning in students' mother tongues or regional languages.

b) The initiative is supported by the collaboration between the National Council for Educational Research and Training (NCERT) and the Indian Institute of Languages.

c) They have developed 52 entry-level primers tailored to various mother tongues and local languages spoken across India. These primers are available in languages such as Bhutia, Bodo, Garo, Khandeshi, Kinnauri, Kuki, Manipuri, Nepali, Sherpa, and Tulu. These serve as basal readers for local languages and introduce numerals to children attending balvatikas and anganwadis.

d) Schools are encouraged to promote the use of these primers among teachers and students to foster strong language skills in their native languages. The aim is to preserve linguistic diversity and promote multilingual education, as highlighted in national educational documents.

Subject: Art and culture

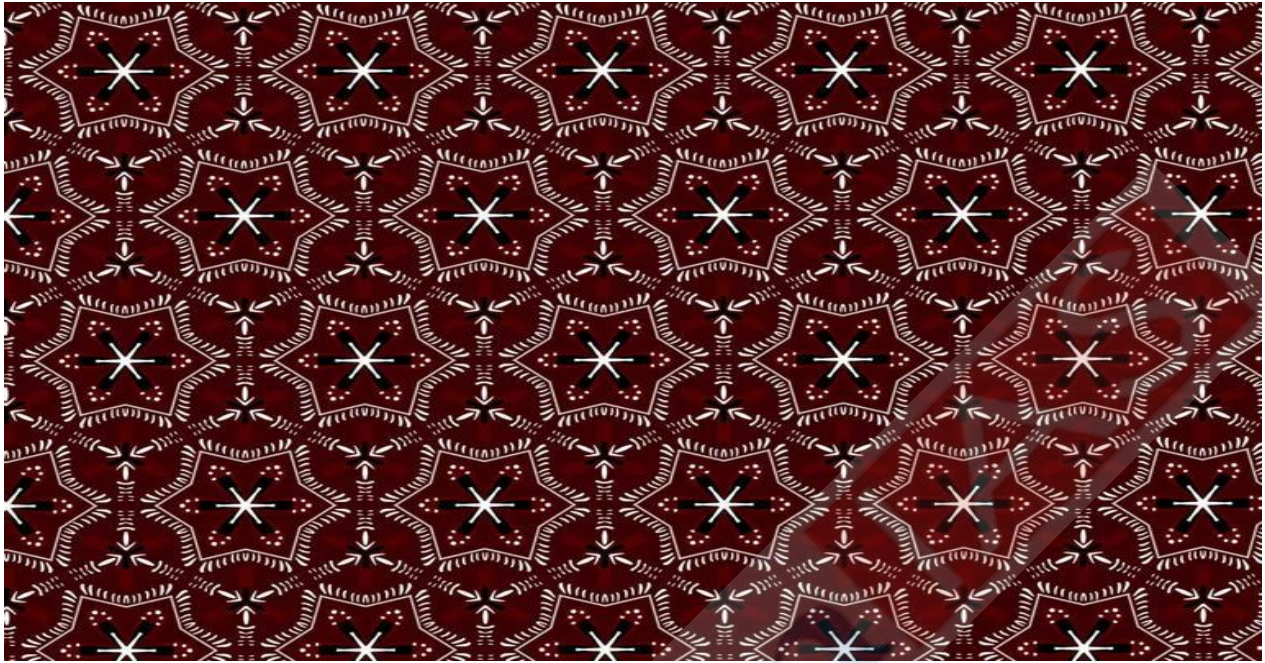
Kutch Ajrakh

Why in the News?

Recently, The traditional artisans of 'Kutch Ajrakh', were bestowed the Geographical Indication (GI) certificate by the Controller General of Patents, Designs, and Trademarks (CGPDTM). This art form has originated from the culturally rich Kutch region in Gujarat.

This recognition serves as a testament to the exceptional artistry and cultural significance of the age-old craft practised by the artisans in the region.

About Kutch Ajrakh



Source: Times of India

Specifications	Details
Origin of the Art Form	The name 'Ajrak' finds its roots in 'Azrak', which denotes Indigo. Indigo is widely used as a potent dye to produce a blue hue.
Key Details of the art Form	<ol style="list-style-type: none"> The art form involves hand-block printing of elaborate designs on treated cotton fabric. Natural vegetable and mineral colours are used in this printing. Predominantly dominated by three colours- <ol style="list-style-type: none"> Blue- Symbolizing the sky Red- Symbolizing earth and fire White- Symbolizing the stars
Centres of practice of the art Form	The art work is predominantly practised in the Sindh, Barmer, and Kutch regions of Gujarat. Ajrakhpur is the epicenter of Ajrakh work in Gujarat.
Prominent users	Nomadic pastoralist and agricultural communities like the Rabaris, Maldharis, and Ahir's are the prominent users of the products derived from these artform. They wear Ajrakh printed cloth as turbans, lungis, or stoles .

What is the significance of the Kutch Ajrakh?

- 1. Historic significance-** This craft holds historical significance as it was introduced to Ajrakhpur region over **400 years** back by the **Sind Muslims**.
- 2. Socioeconomic significance-** Kutch Ajrakh provides a platform for artisans to **showcase their craftsmanship** on a global stage.
- 3. Promotion of Sustainability-** The award of GI tag to Kutch Ajrakh will **promote sustainable livelihoods** within the community of weavers belonging to this region.

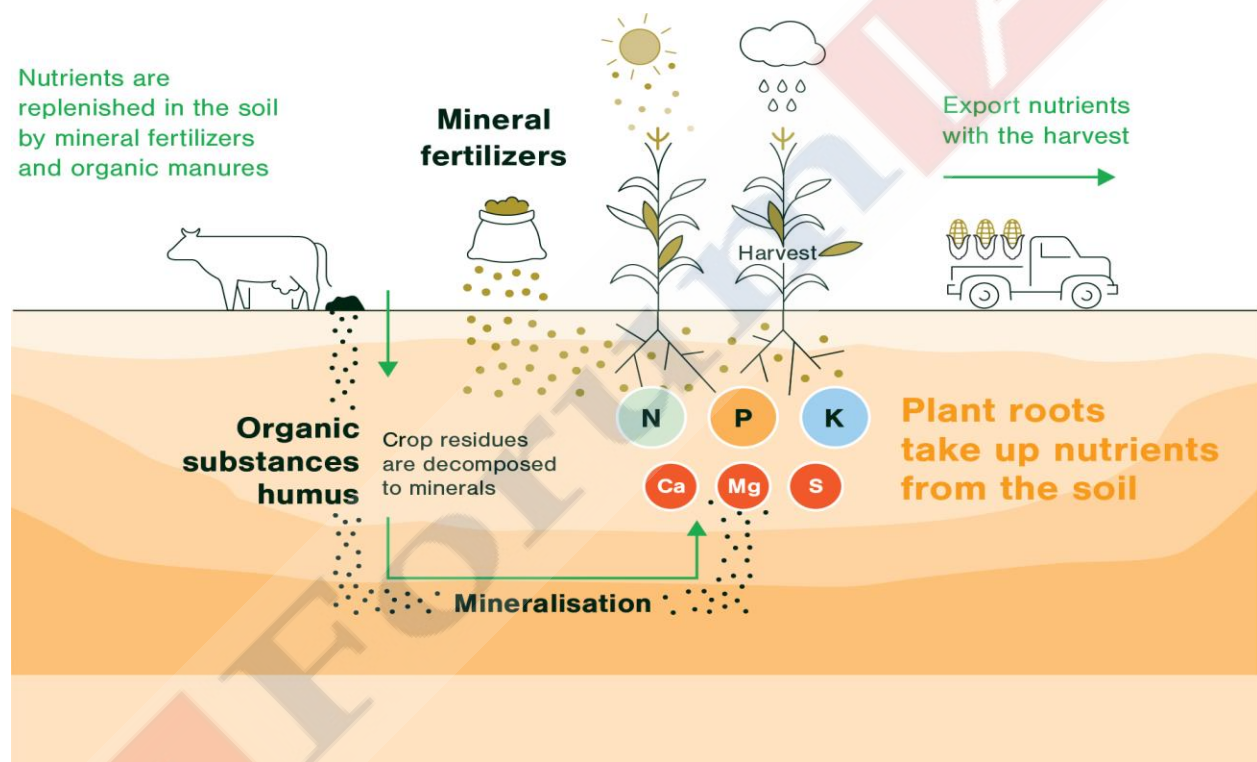
Subject: Indian Economy

Balanced fertilization

Why in the News?

The promotion of Balanced fertilisation will be a crucial agricultural priority for the incoming government post Lok Sabha elections. Balanced fertilisation discourages farmers from applying **excessive of fertilisers having only primary nutrients in high concentrations**, such as urea, di-ammonium phosphate (DAP) or muriate of potash (MOP).

About Balanced fertilisation



Source: Fertilizers Europe

1. About Balanced fertilization- Balanced fertilization refers to the process of **supplying essential nutrients** to crops in the right proportion. The nutrients are supplied taking into consideration the soil type and the specific requirements of the crop at different growth stages.

2. Essential Nutrients Supplied-

- Primary nutrients** which include **nitrogen (N)**, **phosphorus (P)**, and **potassium (K)**
- Secondary nutrients** which include **Sulfur (S)**, **calcium**, and **magnesium**.
- Micronutrients** which include **iron**, **zinc**, **copper**, **manganese**, **boron**, and **molybdenum**.

Challenges related to Balanced fertilisation

Factly Compilation May (First Week) 2024

1. Price Controls leading to lower prices of single nutrient rich fertilisers- Restoration of price controls on non-urea fertilizers like the Diammonium phosphate (DAP) has led to lowering of its prices as compared to other nutrient balanced complex fertilisers like 10:26:26:0 and 12:32:16:0 NPKS complex fertilisers.

2. Vague fixing of prices- The fertiliser prices are vaguely fixed without considering the market demand and supply. For ex- The Muriate of Potassium (MOP) price is not feasible either for the farmers for direct application in the field nor to the fertiliser firms to make complex fertiliser. Hence, it is not being used in the farms, leading to potassium deficiencies.

Steps which can be taken to promote Balanced fertilisation

1. Rationalization of DAP and MOP prices- The recent reduction in landed prices of imported urea, DAP, and MOP due to present geopolitical situation such as Russia's invasion of Ukraine should be used by the government to rationalize MRPs of fertilizers domestically and promote balanced plant nutrition.

2. Bringing Urea under NBS Scheme- The government can leverage lower international prices to encourage balanced plant nutrition by potentially bringing urea under the Nutrient-Based Subsidy (NBS) scheme.

3. Crop-specific usage of fertiliser- The fertiliser usage must be restricted to particular crops. For ex- DAP usage should be restricted to rice and wheat.

4. Granular form of fertiliser- The fertilisers must be marketed in granular forms as it prevents adulteration and ensure slower release of nutrients. (SSP in granular form slows release of Phosphorous)

Scheme launched by the Govt to promote Balanced Fertilization

The Government launched the Nutrient Based Subsidy (NBS) Scheme to promote balanced fertilization in the country.

1. About NBS: The nutrient-based subsidy (NBS) system was instituted in April 2010 to promote balanced fertilization.

2. Provision: Under it, the government fixed a per-kg subsidy for N, P, K and S.

3. Aim of the NBS: This system aimed to encourage product innovation and steer farmers towards using complex fertilizers that contain a balanced mix of nitrogen (N), phosphorus (P), potassium (K), sulfur (S), and other nutrients in appropriate proportions.

4. Impact of NBS: Between 2009-10 and 2011-12, there was a decline in the consumption of DAP and MOP fertilizers, while there was an increase in the usage of NPKS complexes and single super phosphate (SSP).

5. Reason for failure: The Nutrient-Based Subsidy (NBS) scheme failed due to its exclusion of urea. Despite the introduction of NBS, urea consumption continued to rise steadily as its maximum retail price remained controlled with only marginal increase.

Bima Vistaar

Why in the News?

The Insurance Regulatory and Development Authority of India (Irdai) has proposed Bima Vistaar. Bima Vistaar is an ambitious all-in-one affordable mass product which aim to target the rural areas of the country.

About Bima Vistaar

Cover drive for the uninsured

The Insurance Regulatory and Development Authority is driving multi-pronged changes to expand citizens' safety nets



■ A new bundled insurance product Bima Vistar to provide life, health, accident and property cover through a single, simple policy



■ A Bima Sugam platform as a one-stop shop for customers, integrating insurers and distributors



■ Linking digital death registries to platform so claims can be settled within hours or a day



■ Permitting insurers to sell value-added services with policies; for example, a yoga class bundled with a health scheme



■ Women to lead campaign to spur insurance penetration in each Gram Sabha



■ Roping in States to form insurance committees and expand coverage across districts

■ Move will also allow smaller, micro and regional insurers to reach different strata of society

Source: The Hindu

1. About Bima Vistaar: It is a **comprehensive insurance product** that combines **life, health, accident, and property coverage**. It is provided by both public and private insurance companies.

2. Initiated by: This is initiated by the **Insurance Regulatory and Development Authority of India (IRDAI)** as part of its **Vision 2047**.

3. Aim: The policy aims to address the essential insurance needs of India's rural population with a single, affordable product. It has been made accessible at Rs 1,500 per policy.

4. Features:

a) This product forms part of **IRDAI's Bima Trinity initiative**. It includes:

- i) **Bima Sugam** which includes **online insurance marketplace**
- ii) **Bima Vistaar** which is a **comprehensive bundled policy**
- iii) **Bima Vaahak** which works as a **distribution channel**

IRDAI is banking on the troika to help further its goal of **'Insurance for All' by 2047**.

b) It is a benefit-based policy: This means that if the event were to occur, the pre-decided amount (the sum insured) will be paid out to the policyholder, or her nominees and the policy will cease to exist.

c) Policy cost: The policy offers **life cover for Rs 820, health cover for Rs 500, personal accident cover for Rs 100, and property cover for Rs 80**. If taken as a family floater, it costs Rs 2,420, with an extra Rs 900 for additional family members.

d) Benefits of the Bima Vistaar Policy:

i) Increased Insurance Penetration: The policy facilitates the **expansion of insurance coverage in rural areas of India**, promoting financial security among underserved populations.

ii) Affordable Insurance: With competitive pricing, the Bima Vistaar policy offers accessible insurance solutions to individuals and families and thus ensuring **reliable coverage at reasonable costs**.

iii) Promotion of Financial Inclusion: By encouraging insurance investment and accessibility, this initiative contributes to **broader financial inclusion**, empowering more people to safeguard their financial future.

iv) **Enhanced Distribution and Adoption:** The policy incentivizes agents to promote and sell Bima Vistaar policies to **wider distribution and adoption of insurance products** particularly in rural and underserved communities.

State of Insurance Sector in India:

1. According to the Economic Survey 2022-23, **India's life insurance density increased from USD 11.1 in 2001 to USD 91 in 2021.**

2. The Indian insurance market is poised to **emerge as one of the fastest-growing globally in the coming decade.** India is currently the **10th largest insurance market globally** and is expected to rise to the **6th position by 2032.**

Read more: [All-in-one policy plan to spread insurance in India](#)

Standalone Primary Dealers to borrow in foreign currency

Why in the news?

The Reserve Bank of India (RBI) has recently allowed **standalone primary dealers (SPDs)** to borrow in foreign currency from their parent companies and entities authorized by it.

Standalone primary dealers **will also be allowed to access overdraft facilities in nostro accounts** solely for operational use.

NOTE- Nostro account- A nostro account is a bank account held by a domestic bank in a foreign country's currency. This account is primarily used to facilitate foreign exchange and international trade transactions.

About Primary Dealers

Introduction-In 1995, the Reserve Bank of India (RBI) **introduced the Primary Dealers (PDs) system** in the Government Securities Market. This system includes independent entities specifically involved in Primary Dealer activity.

Definition- A primary dealer is an RBI-registered entity that is authorized to buy and sell government securities. There are **2 types of primary dealers in India** – standalone primary dealers and bank primary dealers.

About Standalone Primary Dealer

Description-They are either **subsidiaries of scheduled commercial banks** or entities incorporated abroad or those incorporated under the Companies Act.

Status-They are registered as **non-banking financial companies.** As of March 31, 2023, there were 7 SPDs registered as non-banking financial companies (NBFCs) with the RBI.

What are the regulatory guidelines released by the RBI regarding SPDs?

- 1) Borrowings by SPDs must adhere to prescribed limits for **foreign currency.**
- 2) If withdrawals go over the limit and aren't fixed within 5 days, they need to be reported to the RBI within 15 days from the end of the month when the limits were exceeded.
- 3) The RBI has included SPDs within the scope of norms for **risk management** and **interbank dealings.**

4) **Capital Requirements and Reporting**-The board of authorized dealers can set the net overnight open position limit (NOOPL) to calculate the capital charge on forex risk. This limit shouldn't go over **25% of the dealer's total capital**.

What is the significance of the recent move of the RBI?

- 1) It would help SPDs in managing funding for their **foreign exchange business**.
- 2) It would facilitate and smoothen **foreign exchange operations** for primary dealers.
- 3) It will allow SPDs to **fund settlement failures** in forex transactions by borrowing from their parent companies.

Read more-[T+1 settlement system: how it works, and how it will help investors](#)

Swing trading

Why in the News?

The stock market has experienced significant volatility recently due to the ongoing Lok Sabha elections. Amidst these ups and downs, swing trading has become a popular topic online as various stocks have shown marked fluctuations.

About swing trading

Aspects	Description
About Swing trading	Swing trading involves holding stocks for more than a day, usually for several days or weeks. This trading style is widely used in the Indian stock market.
Objective	<ol style="list-style-type: none"> i) The primary goal of swing trading is to profit from short- to medium-term fluctuations in stock prices. ii) Swing traders capitalise on both upward and downward movements in the market, seeking to take advantage of trends and momentum.
Strategy	Swing traders employ technical analysis to forecast price changes and identify trading opportunities. Common Strategy include trend following (predicting market direction) or mean reversion (buying or selling based on historical price data).
How does swing trading work?	<ol style="list-style-type: none"> i) Swing traders focus on stocks with high trading volume and price volatility. ii) They use fundamental analysis and technical indicators such as RSI (Relative Strength Index) and MACD (Moving Average Convergence Divergence) to evaluate stocks. iii) They establish trades by setting stop-loss orders to minimize losses and target prices to secure profits, based on key price levels of support and resistance. iv) Traders buy stocks at support (low prices) and sell at resistance (high prices), capitalizing on the expected price swings between these levels.
Advantages	<ol style="list-style-type: none"> i) Flexibility: Swing trading allows traders to adapt their strategies and positions based on market fluctuations. ii) Time Efficiency: It is generally less time-consuming than day trading, as it doesn't

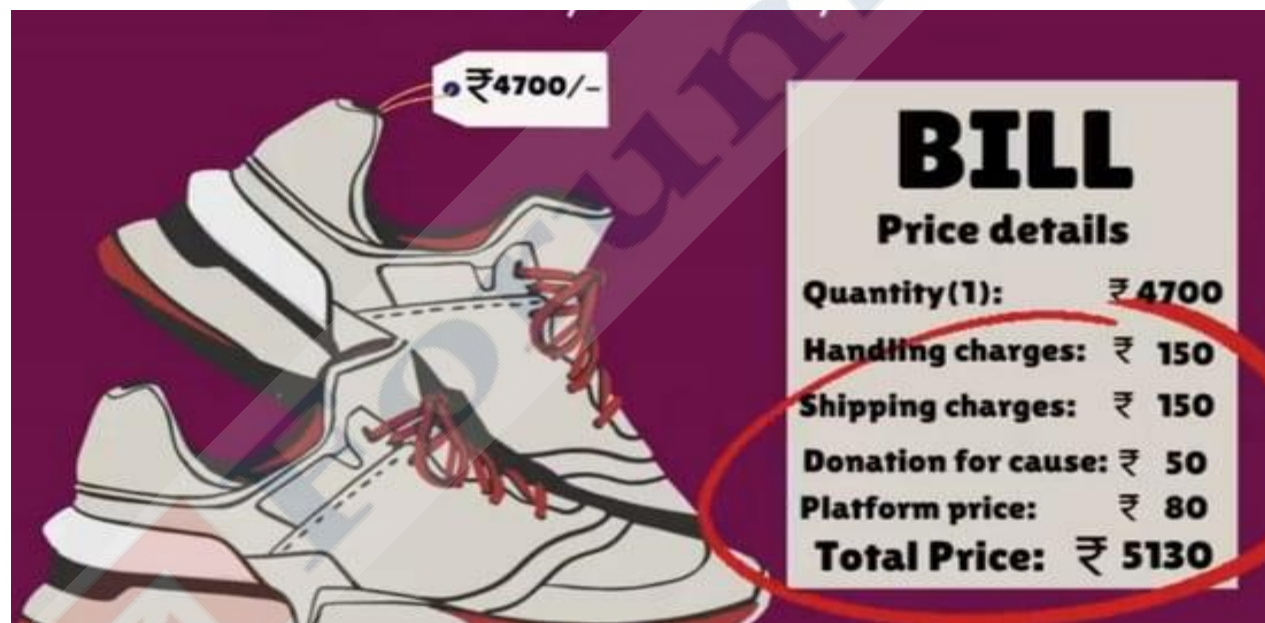
	require constant market monitoring. iii) Profit Potential: It offers opportunities to capture profits from short- to medium-term price movements in the market.
Disadvantages	i) Market Knowledge Requirement: It requires a thorough understanding of market dynamics and technical analysis, which can be complex. ii) Missed Long-Term Gains: Swing traders may miss out on the larger profits that can come from holding positions over a longer term, as they typically capitalize on shorter market movements.

Drip pricing

Why in the News?

Consumers often faces drip pricing while purchasing any commodities or services. Considering this, the Department of Consumer Affairs asked consumers to reach out to the ministry if they observe 'drip pricing'.

About Drip Pricing



Source: Twitter

1. About Drip pricing: It is a **marketing strategy** where initially only a portion of a products or service's total cost is shown. The **full price is disclosed progressively** as the customer moves through the purchase process.

2. Strategy used: This strategy often involves concealing essential fees like taxes or booking fees, or excluding necessary add-ons such as internet access or amenities that are essential for the use of the product or service.

The **price advertised in print, emails, or on websites, known as the "headline price,"** may not accurately represent the total cost that the consumer will ultimately pay.

3. **Why companies indulge in Drip Pricing-** Businesses use drip pricing to attract customers by starting with a lower price, and hoping that they will continue with the purchase even after seeing additional costs later.

4. **Impact on Consumer Behaviour:** Drip pricing can make it difficult for consumers to compare prices effectively.

5. **Sellers offering transparent prices at disadvantage-** Drip pricing may put sellers who offer more transparent pricing at a disadvantage.

Nifty Non-Cyclical Consumer Index Fund

Why in the News?

Groww Mutual Fund has recently introduced India's First Nifty Non-Cyclical Consumer Index Fund.

About Nifty Non-Cyclical Consumer Index Fund

Aspects	Description
About	1) It is a mutual fund designed to foster long-term capital growth through investments in the securities of the Nifty Non-Cyclical Consumer Index (TRI). 2) It is India's first index fund which enables people to invest in the top stocks from consumer industries such as FMCG, Textiles, etc.
Launched by	Groww Mutual Fund
Aim of the fund	The aim of the fund is to achieve long-term capital growth by investing in the securities of the Nifty Non-Cyclical Consumer Index (TRI) in their respective proportions and weightings.
Purpose of the fund	This index comprises 30 companies that exhibit resilience to economic fluctuations and maintain steady demand.
Characteristics	1) Non-cyclical stocks are also known as defensive stocks. 2) It tends to perform well in the stock market even during economic instability. 3) These stocks maintain constant demand and are not influenced by cyclical fluctuations because they provide everyday essentials such as food, water, and utilities.