GS SCORE
An Institute for Civil Services

SEPTEMBER 2022

GS ANALYST
MONTHLY CURRENT AFFAIRS MAGAZINE

☑ **Coverage of Monthly topics for GS Paper 1,2 , 3 & 4**

☑ **Key Concepts & Prelims Specific Topics**

☑ **Questions for Answer Writing Practice**

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KEY CONCEPTS

- Windfall Tax
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- Moonlighting
.... and many more

CONTEMPORARY ISSUE BASED ESSAY

The series of erratic rains, heat waves and floods throughout the world are signalling our failure to address climatic change

— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION: A
(MAINS)

CURRENT AFFAIRS

LIVES OF INDIAN WOMEN PRISONERS

CONTEXT:

Recently, the Supreme Court of India granted interim bail to activist Teesta Setalvad stating that the relief of interim bail is granted in the peculiar facts that the appellant happens to 'be a lady'.

◔ **This brief aims to analyse the Lives of India's Women Prisoners and how do they become a forgotten and shunned part of Indian society.**

◉ BACKGROUND

- Supreme Court had referred to a provision that says being a woman is a possible ground for granting bail, even when otherwise it cannot be considered.

- **Bail** is the conditional/provisional release of a person held under **legal custody** (in matters which are yet to be pronounced by the Court), by undertaking a promise to appear in the Court as and when required.
- It signifies a security/collateral deposited before the Court for release.

- **Section 437 of the CrPC** deals with bail in case of non-bailable offences.
  - ➤ A person shall not be released on bail if there is reasonable ground to believe that he has committed an offence punishable with death or life imprisonment; or, if he has been previously been convicted for an offence punishable with death, life imprisonment.

◉ ANALYSIS

What are the special conditions for women allowing Bail?

- When the woman is a **victim of sexual offence or associated to such case** of any age.
- If arrested in terms for presenting as **witnesses.**
- **Physically disabled** women and suffering from mental disorders are acquainted to relief from arrests.
- Under **Section 437** of the Code of Criminal Procedure (CrPC), a woman is entitled to favourable treatment.

Do you Know?

When a police officer requires the attendance of any person who he believes is acquainted with a case under **investigation,** the person has to appear before the officer (Section 160).

However, **no woman** shall be required to do so at any place other than the place in which **she resides**.

Need for Special Provisions	Consequences
• Due to Vulnerability of Women	• Easy escape provisions for Women against Crime
• **Fundamental Rights of women**: The Constitution of India guarantees the "right to equality" to women and prohibits unreasonable discrimination between persons.	• Real Suspect can misuse the women for criminal activities.
• India is a signatory to **Convention on the Elimination of All Forms of Discrimination against Women.**	• Less Judged and easy bail.

Other Provisions for women

- **Family Courts Act (1984)** provides for establishment of Family Courts for speedy settlement of family disputes.
- **Indian Penal Code (1860)** contains provisions to protect Indian women from dowry death, rape, kidnapping, cruelty and other offences.
- **Code of Criminal Procedure (1973)** has safeguards for women like obligation of a person to maintain his wife, arrest of woman by female police and so on.

Issues faced by women prisoners

- Lack of privacy
- They bear the brunt of a stigma
- Lack of hygiene and sanitation
- Overcrowding
- Small number of open prison
- Class, caste, religion and nationality have a big say in the women's potential prison experience

- Physical and mental health of prisoners often suffers.

- Female prisoners are housed in smaller enclosures within men's prisons – a prison within a prison

> Of the 1,350 prisons in India, just 31 are reserved for women, and only 15 states and union territories have separate women's jails.

Ways to help women prisoners

- A liberal application of bail
- Easier access to legal help
- Special fast-track courts and rehabilitation facilities
- Adequate healthcare, humane treatment, preserving dignity during searches and protection from violence
- Special consideration for women is required but under the legal framework.
- Investigations regarding women needs sensitization.

PRACTICE QUESTION

1. Violation of rights of women prisoners continues increasing despite a plethora of Provisions contained in the Indian Constitution and International Conventions. Critically Examine.

2. Women prisoners are placed in the criminal justice system both as victims of crime and Perpetrators of offences. Substantiate.

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CLIMATE CHANGE'S INFLUENCE ON HURRICANES

CONTEXT:

Hurricane Fiona had intensified into the 2022 Atlantic season's first major hurricane.

About Hurricanes

Hurricanes have three main parts:

- the calm eye in the center
- the eyewall where the winds and rains are the strongest
- the rain bands which spin out from the center and give the storm its size

- A hurricane is a large rotating storm with high speeds of wind that gust at least **74 mph** that forms over warm waters in tropical areas.

- In the southern hemisphere, hurricanes rotate in a **clockwise direction**, and in the northern hemisphere they rotate in an **anti-clockwise direction**.
  - This is due to what's called the **Coriolis force**, produced by the Earth's rotation.

How are hurricanes formed?

Hurricanes are given names by the **World Meteorological Organisation (WMO)** so that they can be distinguished.

- Hurricanes begin as **tropical disturbances** in warm ocean waters with surface temperatures of at least **80 degrees Fahrenheit** (26.5 degrees Celsius). Those **low-pressure systems** are fed by energy from warm seas.
  - **Tropical Depression:** A storm with wind speeds of 38 miles (61 km) an hour or less is classified as a tropical depression.
  - **Tropical storm:** It becomes a tropical storm, when its sustained wind speeds top 39 miles (63 km) an hour.

The system divides storms into five categories:

- **Category 1**: Winds 74 to 95 mph (Minor damage)

- **Category 2**: Winds 96 to 110 mph (Extensive damage — Can uproot trees and break windows)

- **Category 3**: Winds 111 to 129 mph (Devastating — Can break windows and doors)

- **Category 4**: Winds 130 to 156 mph (Catastrophic damage — Can tear off roofs)

- **Category 5:** Winds 157 mph or higher (The absolute worst and can level houses and destroy buildings)

How climate change is impacting hurricanes?

- **Rising temperature:** Hurricanes feed off of heat energy, so as Earth's global temperatures continue to rise.

- **Intensification:** Climate change is making hurricanes **wetter, windier and altogether more intense.** There is also evidence that it is causing storms to travel more slowly, meaning they can dump more water in one place.

- **Heavy rainfall:** Climate change can also boost the amount of rainfall delivered by a storm. Because a warmer atmosphere can also hold more moisture, water vapour builds up until clouds break, sending down heavy rain.
  - According to a recent study, during the 2020 Atlantic hurricane season (one of the most active on record), climate change boosted hourly rainfall rates in hurricane-force storms by 8%-11%.

PRACTICE QUESTION

1. How are hurricanes formed above the ocean waters? What are the conditions required for their occurrence?

2. Discuss the factors affecting the weather over the Arabian Sea due to Atlantic warming during summers.

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EASTERN ECONOMIC FORUM AND INDIA'S BALANCING ACT

CONTEXT:

Russia hosted the seventh Eastern Economic Forum (EEF) in Vladivostok; which provided a platform for entrepreneurs to expand their businesses into Russia's Far East (RFE).

What is Eastern Economic Forum (EEF)?

- The EEF was established in 2015 to encourage **foreign investments** in Russia.

- The forum displays the economic potential, suitable business conditions and investment opportunities in the region.

- As of 2022, almost **2,729 investment** projects are being planned in the region.

> The agreements focus on **infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.**

Geography of the Region:

- The Russian Far East is a region in **Northeast Asia.**

- It is the easternmost part of Russia and the Asian continent; and is administered as part of the **Far Eastern Federal District,** which is located between **Lake Baikal in eastern Siberia and the Pacific Ocean.**

Russia's Far Eastern Federal District

⦿ ANALYSIS

Why Russia wants other countries to invest in Far East Region?

- **Expansion of power**: Moscow seeks to strengthen its "administrative and economic footprint in the RFE" through such measures as increased regional investment and the May 2012 creation of a Ministry for the Development of the Russian Far East.

- **Establishing links with Neighbours**: Russia wants to strengthen economic links with its Asia-Pacific neighbours in an effort to tie its economy to the

dynamic and growing economies of the Pacific region.

Who are the major actors in the Russia's far eastern deal?

- **China** is the biggest investor in the region as it sees potential in promoting the Chinese Belt and Road Initiative and the Polar Sea Route in the RFE.
  - ➤ China's investments in the region account for **90% of the total investments**.
- **South Korea** has also been gradually increasing its investments in the region. South Korea has invested in shipbuilding projects, manufacturing of electrical equipment, gas-liquefying plants, agricultural production and fisheries.
  - ➤ In 2017, the **Export-Import Bank of Korea** and the Far East Development Fund has sanctioned funds for the developments in the region.
- **Japan** is another key trading partner in the Far East. In 2017, Japanese investments through 21 projects amounted to $16 billion.
  - ➤ Japan identified **eight areas of economic** cooperation and pushed private businesses to invest in the development of the RFE.

What is India's stand for investing in the region?

- India is interested in expanding trade, connectivity and investments in Russia.
- India is keen to deepen its cooperation in energy, pharmaceuticals, maritime connectivity, healthcare, tourism, the diamond industry and the Arctic.
- In 2019, India also offered a $**1 billion line of credit** to develop infrastructure in the region.
- Through the EEF, India aims to establish a strong inter-state interaction with Russia.
- **Business representatives of Gujarat** and the **Republic of Sakha** have launched agreements in the **diamond and pharmaceuticals industry**.

How Russia wants help from India?

- Russia wants to cultivate its own connectivity corridors in Eurasia, and in coordination with India and Iran, it is pushing **International North-South Transport Corridor (INSTC)**, a 7,200-km multi-mode network of ship, rail, and roads connecting **India, Iran, Azerbaijan, Russia, Central Asia and Europe.**
- Moscow also wants New Delhi to increase its presence in Central Asia as a balancing power.

India's act of balancing between EEF and Indo-pacific Economic framework (IPEF)

- Though India's interest in IPEF led by US, is more fulfilling than EEF. However, it seeks to balance out both the economic investments.
- The U.S.-led **Indo-Pacific Economic Framework for Prosperity (IPEF)** and the EEF are incomparable based on its **geographic coverage** and the **partnership with the host-countries.**
- India has vested interests in both the forums and has worked towards balancing its involvement.
- India has given its confirmation and acceptance to three of the **four pillars** in the IPEF.
- **Significance of IPEF:**
  - ➤ The IPEF plays a key role in **building resilient supply chains** for India. India's participation in the forum will help in disengaging from supply chains that are **dependent on China** and will also make it a part of the **global supply chain network**.
  - ➤ Additionally, the IPEF partners will act as new **sources of raw material** and other essential products, further reducing India's reliance on China for raw materials.

PRACTICE QUESTION

1. The Far East policy of Russia is encouraged by the Eastern Economic Forum. How significant is India's partnership with Russia in the Asia-Pacific region in this regard?

2. How India and Russia's special strategic partnership will affect India's bilateral relations with other countries in the Asia-Pacific region?

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ONE YEAR OF TALIBAN 2.0

CONTEXT:

As a year after the Taliban returned to power in Kabul, India is concerned about its relations with Afghanistan.

- Due to Afghanistan's geographic location and influence on Central Asia, it becomes important for India to maintain relations with it.

◉ BACKGROUND

- In the year 1996, it was the first time when Taliban took over Kabul. Back then, Afghanistan was in ruins, with much of its infrastructure destroyed by raging **civil war**.

- Over the last two decades, foreign powers including India helped rebuild roads, dams, government offices, hospitals, rural infrastructure, the economy, and education.

- In 2021, the Taliban took over a readymade country. However, the **international community** has not yet recognised the regime formally, and sanctions, including travel bans on many Taliban, remain in place.

- So, let us assess the journey of the Taliban and its policy for the new Afghanistan.

About Taliban:

- The **Taliban** or the **Islamic Emirate of Afghanistan** is a Deobandi **Islamic fundamentalist, militant, and jihadist** political movement in Afghanistan.

- It ruled approximately **three-quarters** of the country from **1996–2001**, before being overthrown following the **United States** invasion.

> It recaptured Kabul on **15 August 2021** after years of insurgency, and currently controls all of the countries.

What is the Taliban's view on India?

- The Taliban have welcomed India's return to the land and also expressed the hope that the embassy, which is now headed by a mid-ranking IFS officer, would be upgraded to the ambassadorial level.

What is India's stand on the Taliban?

India is critical to the terror activities of the Taliban, but has due endurances to the fact that it has to maintain ties with Afghanistan due to the following reasons:

- **Road to Central Asia:** India's strategic interests in the region, including access to Central Asia, and ensuring that Pakistan is not able to relocate India-focussed terror groups to Afghanistan.

- **Geographic significance:** Afghanistan enjoys a strategic location in South Asia and is particularly relevant to India as a geographical neighbour.

  ➤ The country has the Central Asian Republics to the North, Pakistan to its East, and through Iran and Pakistan the Indian Ocean deeper south.

- **Trade partnerships:** Afghanistan has been an important trading and craft centre for over 2000 years connecting the civilizations of **Persia, and Central Asia with India.**

Developments in Taliban during the last one year:

- Taliban introduced or supported punishments in line with their strict interpretation of Sharia law.

- Banned television, music, and cinema, and disapproved of girls aged 10 and over going to school.

- Decimated the rights of women and children" in Afghanistan.

- Civilian casualties and an increase in human rights violations.

- The unpredictable security environment.

- Threatened the gains made in the standard of living of Afghanistan's people over the two decades after the U.S. invasion.

- Afghan economy had contracted by an estimated 30%-40% since the Taliban takeover in August last year.

  ➤ Suspension of most international aid and the freezing of access to Afghanistan's foreign exchange reserves.

PRACTICE QUESTION

1. What approach should India apply in engaging with the Taliban regime of Afghanistan in light of its security implications?

2. Afghanistan has a central role in securing India's economic interests in Central Asia. Do you think that the recent approach by India vis-à-vis Afghanistan is a realistic one?

PANDEMIC PREPAREDNESS FUND

CONTEXT:

To counter financial obstacles, weak infrastructure, scarcity of healthcare, etc. the World Bank Board of Directors has approved setting up a Financial Intermediary Fund (FIF) for Pandemic Prevention, Preparedness, and Response (PPR).

What is Financial Intermediary Fund (FIF)?

◉ FIF is aimed to **address critical gaps** through investments and technical support at the national, regional, and global levels.

◉ The **fund will provide a dedicated stream of additional, long-term financing to strengthen PPR** capabilities in low- and middle-income countries.

◉ Financial Intermediary Funds (FIFs) provide the global development community with independently governed multi-contributor collaboration platforms.

◉ FIFs are designed to **mobilize significant financial support** and **engender collective action** for development priorities, often contributing to global public goods.

◉ Each FIF is a type of trust fund for which the **World Bank** serves as trustee.

Who developed the plan?

◉ The FIF for pandemic PPR is **put forward by G20 in the presidency of Italy.**

◉ During a G20 Summit in 2021, under Italy's presidency, it was decided to establish **G20 Joint Finance-Health Task Force for pandemic preparedness.**

◉ The FIF is also established by the strong support of the G20 nations and beyond.

◉ At present, calls for the **proposal for investments funded by the FIF will open in November 2022**.

> The FIF has commitments from India, the USA, the UK, Australia, Canada, China, the European Commission, the Republic of Korea, France, Germany, Indonesia, Italy, Japan, New Zealand, Norway, Singapore, South Africa, Spain, the United Arab Emirates, the Bill & Melinda Gates Foundation, the Rockefeller Foundation, and Welcome Trust.

What is the structure of the PPR FIF?

PPR FIF will have four main elements:

◉ **Governing board** - the decision-making body

of the FIF that sets the overall work program and makes funding decisions;

◉ A **secretariat performing administrative functions**, including support to the governing board in the delivery of its responsibilities,

◉ **Financial trustee** served by the World Bank, and

◉ The FIF implementing entities to carry out the FIF's work program at the country, regional and global levels.

Why is there a need for a FIF on pandemic prevention, preparedness, and response (PPR)?

◉ **Lack of investment:** Pandemic preparedness and response are quintessential "global public goods". Despite these facts, investment in pandemic preparedness and response has been insufficient.

◉ **Panic-neglect cycle:** The frequency of pandemic events has increased in the past decades and the global pandemic response has typically followed cycles of panic followed by neglect.

How would this new fund help?

◉ **Saving resources:** Investing now will save lives and resources for the years to come.

◉ **Bridging of financial gaps:** The fund will provide **long-term financing to low or middle-income countries** to bridge the gaps that they face during a pandemic.

◉ **Strengthening of the health system:** The **new FIF on PPR will help focus and sustain much-needed high-level attention on strengthening health systems.**

◉ **Building capacity:** As per the WHO, FIF will help in building PPR capacity in zoonotic disease surveillance, emergency communication, management, laboratories, community engagement, critical health workforce, etc.

PRACTICE QUESTION

1. Examine the necessity of pandemic preparedness funds for maintaining the weak infrastructure, and scarcity of healthcare through inclusive cooperation during the global pandemic.

2. The global community wants the World Bank's multilateral financial intermediary fund to assist low- and middle-income nations and regions in improving their preparedness for international health crises. Examine the necessity of a fund in this context.

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NATIONAL CRIME RECORDS BUREAU (NCRB) DATA FOR 2021 RELEASED

CONTEXT:

The latest National Crime Records Bureau report sheds some key insights into the crime statistics in India.

◉ KEY HIGHLIGHTS:

- The latest **National Crime Records Bureau (NCRB) report** covers crimes against women, kidnappings, suicides, and traffic accidents in India.

- **Crimes against women** have increased by 15.3 per cent in 2021 as compared to the earlier report.
  - ➤ With 56,083 cases, **Uttar Pradesh** topped the list of crimes against women, followed by Rajasthan (40,738) and Maharashtra (39,526).
  - ➤ Nagaland reported **the lowest** number of crimes against women with a 5.5 per cent rate in 2021. The north-eastern state also had the lowest number of actual cases (54) last year.
  - ➤ **Delhi** accounted for the highest rate of crimes against women in 2021 among the Union territories.

Percentage Distribution of Suicide Victims by Profession During 2021
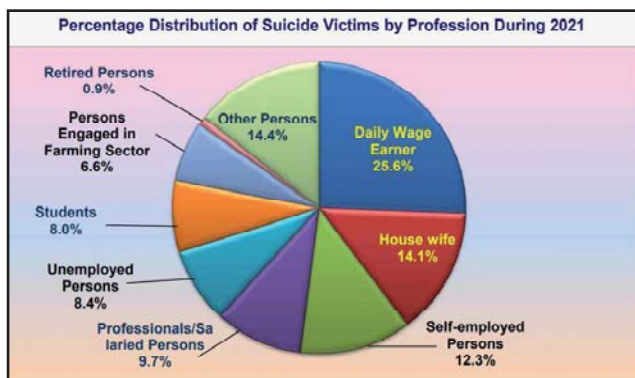
- **Suicide rates** also increased as compared to the last report;
  - ➤ Maharashtra (22,207) tops the list,
  - ➤ Tamil Nadu (18,925),
  - ➤ Madhya Pradesh (14,965)
  - ➤ West Bengal (13,500)
    - The causes of suicides in India were associated with **career, loneliness, abuse, violence, familial disputes, mental illness, alcoholism, financial loss, and chronic pain**.
- **Trafficking:** Eight children were trafficked every day in the country in 2021 and were exploited.

NCRB Report: Other concerns showcased

- Uttar Pradesh saw the highest number of deaths (24,711) in **traffic accidents.**

- Jammu and Kashmir registered the most **Unlawful Activities (Prevention) Act (UAPA)** cases under the 'special and local laws' in 2021.

- And Jharkhand and Maharashtra filed the highest cases **of communal riots** last year with 100 and 77 cases respectively.

- On the other hand, most **caste conflict violence** was reported in Bihar with 201 cases last year.

What are the areas of concern?

- **For Government:** The government is concerned about the country's situation of increasing crime against women, accidents, communal conflicts, and Suicides.
  - ➤ NCRB data shows the government's lack of policy implementation and the regional divide across the country.

- **For Society:** On the societal level, the increasing crime rates indicate a lack of values and social order among Humans.
  - ➤ In order to make a stance on such issues, community participation is not up to the mark.
  - ➤ **Gender disparity, poverty alleviation, and food insecurity** are highlighted and are one of the causes of these crimes.

What can be the possible steps to be taken for reducing crimes in India?

- **Surveillance:** Police surveillance is one of the activities that are used for crime prevention and is also considered effective.

- **Offender Tracking:** Offender tracking system contains information about the prisoners or previously prosecuted criminals and that information makes it easy for police to catch the actual perpetrator.

National Crime Records Bureau (NCRB)

- The NCRB was established in 1986 to compile and keep records of data on crime.
- It functions under the **Union Home Ministry.**
- The NCRB report contains data received from the 36 states and Union Territories across the country.

◉ **Crime Analysis:** Crime analysis means the analysis of crime data recorded by the police. Crime analysis can be helpful in crime prevention as it would disclose the 'pattern' by which a crime is occurring.

◉ **Socio-economic development and inclusion:** The integration of crime prevention considerations into social and economic policies should be done including education, health, employment, etc. policies and to majorly focus on communities, families, and youth.

PRACTICE QUESTION

1. Do you think that NCRB data correctly reflects the actual incidence of crime in India? Suggest some measures to make NCRB data reporting more efficient.

2. Indian policy toward women is always oriented toward their empowerment but recent NCRB data shows that 'crimes against women' is what actually need urgent attention. Comment.

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PUNJAB BANS SARPANCH PROXIES

CONTEXT:

The Punjab government has decided to ban Sarpanch proxies in any meeting of Panchayati raj institutions to empower women instead of paying lip service.

What's the issue?

- Most of the women's sarpanches do not attend meetings.

- **Instead,** the male family members of several women's sarpanches were attending official meetings on their behalf. Some male members even sign documents on their behalf.

How does it impact the system?

- Proxy sarpanches **diminish women's authority** and block the election of women keen on bringing about a change in society through a career in politics.

- This is not only making **a mockery of the reservation of women** in Panchayati Raj institutions but also appears to be a hurdle for other deserving women candidates

> **About Panchayat:**
>
> - **'Panchayat'**, being **"Local government"**, is a state subject and part of the State list of the **Seventh Schedule of the Constitution of India.**
>
> - Through the 73rd constitutional amendment, one-third of seats in Panchayats were reserved for women. Several **states raised the quantum of reserved seats to fifty per cent**.
>   - ➤ This was aimed at empowering women and ensuring their participation in the political process and decision-making at the grass root level.
>
> - Punjab has also made provisions of 50% reservation for women in Panchayati Raj Institutions in their respective State Panchayati Raj Acts.

> - **Clause (3) of Article 243D** of the Constitution ensures the participation of women in Panchayati Raj Institutions by **mandating not less than one-third reservation for women** out of the total number of seats to be filled by direct election and the number of offices of chairpersons of Panchayats.

Reasons for the emergence of ''sarpanch proxies":

- **Resistance due to Social barriers**

- **Poor social status of women**
  - ➤ poor level of literacy
  - ➤ confined to domestic spaces
  - ➤ lack financial independence

- **Lack of skills:** Lack of efforts for women's capacity building, training, or inculcating confidence

- Failure of government to act appropriately against such malpractice and blatant misuse of power.

Required measures:

- Additional work is needed on the **capacity building of women** in matters of governance. This can be done by:

- **Raising society's awareness** about women's rights

- **Sensitizing bureaucracy** about the relevance of women's participation at the panchayat level.

- **Social barriers due to traditional society** need to go away.

PRACTICE QUESTION

1. Analyse the term 'Sarpanch Pati' and also discuss its impact on Panchayati Raj institutions working and society at large.

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NCRB: RISE IN THE CASES OF PREVENTIVE DETENTION

CONTEXT:

The latest crime statistics released by the National Crime Records Bureau (NCRB), have reported a rise in Preventive detentions in 2021 of about 23% compared to 2020.

What is Preventive Detention?

Two Types of Detentions:

- **Preventive detention** is when a person is held in police custody only based on a suspicion that they would conduct a criminal act or cause harm to society.

- **Punitive detention**, which means detention as a punishment for a criminal offense. It occurs after an offense is committed, or an attempt has been made towards the commission of that crime.

- Preventive detention refers to taking into custody an individual who has not committed a crime yet but the authorities believe him to be a threat to law and order.

Constitutional safeguard against misuse of preventive detention:

- **Article 22 (2)**: Every arrested person must be produced before a magistrate within 24 hours after arrest.

- **Article 22 (4):** It provides that no law for preventive detention authorizes any individual to be detained for more than three months unless an advisory panel claims a reasonable justification for such detainment.

- **Article 22 (5):** It specifies that the reason for detention shall be conveyed to the individual as quickly as possible by any official when detaining any individual under preventive detention.

Key Highlights of the National Crime Records Bureau (NCRB) Data:

- **The Highest number of Detention:** A total of over 24,500 people placed under preventive detention were either in custody or still detained as of the end of 2021, the highest since 2017 when the NCRB started recording this data.

  - In 2017, the NCRB's Crime in India report found that 67,084 persons had been detained as a preventive measure that year.

Behind bars | A look at the number of preventive detentions under the National Security Act over the past five years
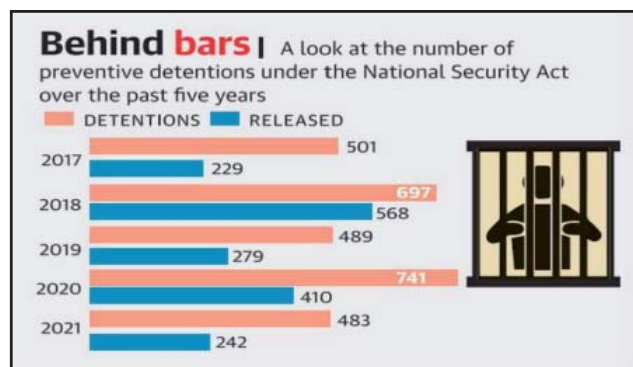
- Of these, 48,815 were released between one and six months of their detention, and 18,269 were either in custody or still in preventive detention as of the end of the year.

- **Detentions under the National Security Act:** Over 483 were detentions under the National Security Act, of which almost half (241) were either in custody or still detained as of 2021-end.

- **State and Union Territories**: Tamil Nadu followed by Telangana and Gujarat recorded the most preventive detentions in 2021 among the States while Jammu and Kashmir recorded the highest number of such detentions in Union Territories (UTs).

Various provisions invoked for Preventive Detention (no: of cases)

Among other laws under which the NCRB has recorded data on preventive detentions are the:

- **Goonda Act** (State and Central) (29,306)

- **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988** (1,331)

- A category classified as "**Other Detention Acts",** under which most of the detentions were registered (79,514).

  - Since 2017, the highest number of persons to be placed under preventive detention has consistently been under the "**Other Detention Acts**" category.

  - In addition to the above-mentioned provision, several other laws provide the basis for preventive detentions, for example:

- Unlawful Activities (Prevention) Act
- Maharashtra Control of Organized Crime Act also provides for making preventive detentions.

Issues with preventive detention

- **Arbitrariness:** The police determinations of whether a person poses a threat are not tested at a trial by leading evidence or examined by legally trained persons.

- **Rights violation:** Quiet often, there is no trial (up to 3 months), no periodic review, and no legal assistance for the detained person.

- **Abuse**: It does not provide any procedural protections such as to reduce detainees' vulnerability to torture and discriminatory treatment, and to prevent officials' misusing preventive detention for subversive activities.

- **Tool for suppression:** In the absence of proper safeguards, preventive detention has been misused, particularly against the Dalits and minorities.

PRACTICE QUESTION

1. According to the National Crime Records Bureau's (NCRB) most recent crime figures, there is a 23% increase in preventive detention in 2021 compared to 2020. Analyse the state of law and order in rural India in this setting.

2. Discuss the evolution of preventive detention laws in India as well as the jurisprudence of safeguards against their misuse developed by the Supreme Court.

****

ADOPTION AND RELATED LAWS IN INDIA

CONTEXT:

The Ministry of Women and Child Development has written to State governments, asking them to immediately implement the revised adoption rules requiring adoption orders to be passed by District Magistrates (DMs) instead of courts with effect from September 1.

◘ However, the latest rules have several aspects questioning the adoption procedure in India and its applicability.

⦿ ABOUT:

Current laws for Adoption in India:

◉ Adoptions in India are governed by two laws —

  ➤ **The Hindu Adoption and Maintenance Act, 1956 (HAMA)**

  ➤ **The Juvenile Justice Act, 2015.**

Both laws have separate eligibility criteria for adoptive parents.

> The **Central Adoption Resource Authority (CARA),** a statutory body of the Ministry of Women and Child Development (MoWCD), deals with the adoption of orphaned, abandoned, and surrendered children through its associated or recognized adoption agencies. It was set up in 1990.

What is in the new rule?

◉ The District Magistrates (DM) has been empowered to give adoption orders instead of courts.

◉ All cases pending before courts have to be now transferred.

Why is there concern over the revised rules?

◉ Parents, activists, lawyers, and adoption agencies are worried as cases already before courts will have to be transferred and the process will have to start afresh.

◉ There is a possibility that the Judiciary will be less informed about adoption and further crimes can be aggravated.

◉ Further, the complexity of the procedure might increase, due to the possibility of a lack of cooperation among different involved agencies.

Why adoption is a challenge?

◉ Long delays in the adoption process due to the involvement of several institutions **(Judiciary, Executive, and Legislators)** and lack of coordination among them.

◉ The involvement of multiple stakeholders (Centre, States, CARA) makes the process complex

◉ **Loopholes in the adoption system;**

  ➤ DMs are authorized but are not informed of their duties regarding Adoption and lack of awareness.

  ➤ Post-adoption and succession-related cases are further heard by courts, which remains a challenge to the legality of passing the order for adoption by DMs.
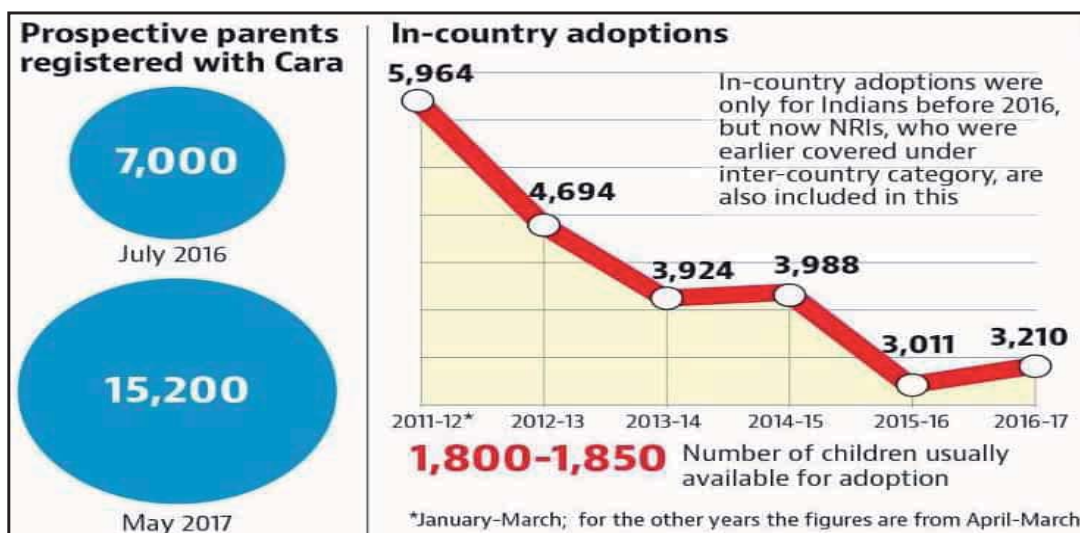
Prospective parents registered with Cara

7,000 — July 2016

15,200 — May 2017

In-country adoptions

5,964 (2011-12*)
4,694 (2012-13)
3,924 (2013-14)
3,988 (2014-15)
3,011 (2015-16)
3,210 (2016-17)

In-country adoptions were only for Indians before 2016, but now NRIs, who were earlier covered under inter-country category, are also included in this

1,800–1,850 Number of children usually available for adoption

*January-March; for the other years the figures are from April-March

Consequences

◉ **On Adopted Children:** The children adopted legally or illegally, are vulnerable and hence need proper management in every step before adoption.

◉ **On People aspiring for Adoption:** In Indian society, having an adopted child is itself a challenge and the adoption-related process under the law has made it further tedious.

◉ **On Constitutional Machinery:** As the **executive and judicial powers** have conflicted with the adoption process, it can lead to future problems while the legality of the succession rights would be considered.

Steps were taken to overcome the issues of Adoption

◉ **Centralization of Adoption laws:** In 2015, the then Minister for Women and Child Development Maneka Gandhi centralized the entire adoption system by empowering CARA to maintain in various specialized adoption agencies, a registry of children, prospective adoptive parents as well as match them before adoption.

◉ **Involvement of NGOs and Civil society:** NGOs should be allowed to directly give children for adoption after obtaining a **no-objection certificate** from CARA.

PRACTICE QUESTION

1. The concept of adoption was brought to give the right to families for the orphan, abandoned, and surrendered children. In this context examine the social situation at present.

2. Discuss the legal requirements outlined in Indian legislation pertaining to adoption and provide reasoning for the issue of protecting orphans in the current climate.

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GSSCORE

RAJASTHAN LAUNCHES INDIRA GANDHI URBAN EMPLOYMENT GUARANTEE SCHEME

CONTEXT:

The Rajasthan government has launched an employment guarantee scheme for people living in cities for 100 days. The scheme is seen based on similar lines as MGNERGA. However, both schemes have several differences.

About Indira Gandhi Urban Employment Guarantee Scheme

- **Objective:** It aims to provide economic support to the poor and needy families living in the cities through work to be provided on demand for 100 days in a year.

- **Eligibility:**
  - ➤ Those in the age group of 18 to 60 years residing within the limits of urban local bodies are eligible.
  - ➤ There is no income limit, though the poor and destitute people, especially those who lost their livelihood during the pandemic, will be given preference.

- **The budget allocated**: A budgetary provision of ₹800 crores was announced by Chief Minister.

- **Agencies involved:** At least 50 persons in each ward of urban local bodies will be given employment and the work permitted under the scheme will be approved and executed through committees at the State, district, and local body levels.

- **Implemented by:** The State government's **Department of Local Bodies** will be responsible for the scheme's implementation.

How this scheme is different from MGNERGA?

- **Urban Vs. Rural Beneficiaries:**
  - ➤ Announcing the employment scheme for urban areas on the lines of Mahatma Gandhi NREGA for rural areas in his budget speech
  - ➤ While MGNREGA assists people in rural areas, there is no such scheme for **street vendors**, as well as those working at **dhabas** and **restaurants** in urban areas.

- **Type of work:** The work allocated under the scheme will be based on the following considerations:
  - ➤ Environment Conservation, water conservation, Cleanliness and Sanitation-Related Works, etc., which are not included under MGNERAGA.

- **Maintain Records:**
  - ➤ To register for it, a **Janaadhar card** or its registration slip is required. Registrations can be done at **e-Mitra centres**.

- ➤ Unlike MGNERAGA, where informal registration goes on which leads to misconduct and exploitation of workers at the site.

- **Salary and pay to labours:**
  - ➤ The ratio of cost of material to payment for labour work of "**general nature**" will be in the ratio of 25:75, while for **special works**, it will be 75:25.

Why social security is needed in urban areas?

- **Major Contributor to Economy:** Urban areas are an integral part of the development process of the country. As in most countries, India's urban areas make a major contribution to the country's economy.

> **Other similar initiatives**
> - Ayyankali Urban Employment Guarantee Scheme in **Kerala,**
> - Urban Wage Employment Initiative under UNNATI in **Odisha,**
> - Mukhya Mantri Shramik Yojana in **Jharkhand** and,
> - Mukhya Mantri Yuva Swabhiman Yojana in **Madhya Pradesh.**

- Indian cities contribute to about **two-third of the economic output**, host a growing share of the population, and are the main recipients of **FDI** and the originators of innovation and technology.

- **A magnet for Businesses:** The cities are a collective magnet for a great diversity of economic activities.

- The cities attract business and people, as a result of scale and agglomeration advantages (supply of educational facilities, presence of suppliers, etc.).

- **Hotbed of Social Capital:** The cities are a hotbed of social capital or a 'melting pot' of culturally or socially diversified groups.

- **Cities are Power Centres:** The city is an ever-expanding power-block, which reinforces its position to the detriment of towns and villages in its hinterland.

PRACTICE QUESTION

1. Indira Gandhi Urban Employment Guarantee Scheme was recently introduced in Rajasthan. Describe how this plan would protect the safety of a family living in an urban location and the difficulties that will arise in keeping this plan's integrity.

2. The Indira Gandhi Urban Employment Guarantee Scheme's main goal is to help poor and needy households financially. Consider

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NEW REGULATIONS REGARDING THE USE OF MEDICAL DEVICES

CONTEXT:

A recent Parliamentary panel Report stated that the Central Drugs Standard Control Organization (CDSCO) is falling short in effectively regulating the medical devices industry.

⦿ ABOUT:

- The parliamentary panel has presented its 138th report on "**Medical Devices: Regulations and Control**" pertaining to the department of health and family welfare to the head of Rajya Sabha and Lok Sabha.

- The committee has observed that the function of the **Central Drugs Standard Control Organization (CDSCO)** primarily focus on the regulation of drugs as a regulatory body was set up originally to regulate pharma and other Medical Devices segment as well.

- The **Medical devices Rule (MDR) 2017 mandated the CDSCO** to regulate medical devices as well. But the organization in its existing structure and expertise **(which is more pharma centric)** is unable to regulate the medical devices industry.

Central Drugs Standard Control Organization (CDSCO):

- It is headed by the Drugs Controller General of India, under the Ministry of Health & Family Welfare.

- CDSCO along with state regulators is jointly responsible for the grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, I. V. Fluids, Vaccine, and Sera.

Major functions of CDSCO:

- Regulatory control over the import of drugs,
- Approval of new drugs and clinical trials,
- Meetings of the Drugs Consultative Committee (DCC) and Drugs Technical Advisory Board (DTAB),
- Approval of certain licenses as Central License Approving Authority is exercised by the CDSCO headquarters.

Committee Observation:

- ⦿ **Insufficient Medical Device Testing Laboratories**: The country has only 18 certified Medical Device Testing Laboratories that have been approved by CDSCO and it is minuscule keeping in view the size of the country.

- ⦿ **Underuse of Labs:** The institutes which have high-tech labs are not being used and are not allowed to be used to test medical devices for their electronic, electromagnetic, and biochemical-run aspects.

MEDICAL DEVICES AND THE EXPLOITATION OF PATIENTS

	Device	Wholesale price (₹)	MRP (₹)	You pay extra...
An FDA Maharashtra report sent **June 2017** urging Centre to "**initiate steps in public interest**"	Urine bag (You pay nearly 6 times more)	14	80	5.7 times
	Face mask: a dozen	1.30	6	4.6
	Oxygen mask	290	1,100	3.8
	Disposable endotracheal tube	63.00	180	2.9
	Arterial catheter set	800-900	2,200-2,500	2.8
	Balloon catheter (Angioplasty)	3,000-9,945	20,000-28,000	2.2-6.7
	Guiding catheter (Angioplasty)	2,346-4,321	5,000-10,500	2.1-2.9
	Imported intraocular lens	3,750-15,200	5,400-26,550	1.4-2.8
	Device	Wholesaler price (₹)	MRP (₹)	You pay extra...
In 2014, Odisha drug controller sent a similar report	IV set (10 times more)	9.80	98	10
	Blood transfusion set	14.70	115	7.8
	IV catheter with injection port	35.85	110	3.1
	Disposable syringe 10ml	4.40	11	2.5
	Spinal needle 23	44.40	105	2.4
	Oncofusion set	252	583	2.3
	Tracheostomy tube	264.50	621	2.3
	Urinary catheter 8 (Foleys)	178.50	295	1.7

- **Absence of Research Ecosystem**: Indian Medical Devices Industry presently lacks a research ecosystem and infrastructure for manufacturing of high tech, advanced medical devices (Class C&D)

- **Adequate common infrastructure:** Accredited laboratories in various regions of the country for standard testing can encourage local manufacturers to get their products tested for standards. It may reduce the cost of production which ultimately will improve the availability and affordability of medical devices in the domestic market.

- **Low Standards**: The Indian Medical Devices Industry doesn't have the facilities to produce such medical devices comparable to global standards.

Recommendations of Committee

- **Post-market surveillance system for Medical Devices:** The Committee noted that there is a dire need for developing IT enabled feedback-driven post-market surveillance system for Medical Devices to **evaluate the efficiency of specific Medical Devices**.

- **Need for Medical device registry:** This is to ensure the traceability of patient who has received the implant, to assess the performance of the implant also to seek feedback on the functional capacity of medical devices.

- **Imparting necessary skill-set:** The union government and the State governments must work in coherence and impart the necessary skills to the local medical device officers and also devise a mechanism to regularly designate State Medical personnel so that the mandate of the legislation can be implemented effectively.

- **Ensuring Participation of Institutions:** The Ministry should allow the new regulator to involve institutions such as IISC, CSIR, DRDO, and the network of IITs to test medical devices for safety and efficacy. These institutes have high-tech labs

and thus can be used to test medical devices for their electronic, electromagnetic, and biochemical-run aspects.

- **Single Window System**: The multiplicity of regulations is creating chaos. So, a single window clearance would significantly boost investment in R&D in the field of medical devices and would also reduce the time required for obtaining approvals from different Departments/Ministries.

- **Research Linked Incentive (RLI) Scheme**: Indian Medical Devices Industry **lacks the infrastructure** for manufacturing advanced medical devices. It is recommended to start a Research Linked Incentive (RLI) Scheme in Line with the PLI scheme.

- **Improving on Research and Development**: Indian Medical Devices Industry also **lacks the research ecosystem** for manufacturing high medical devices (Class C&D). We need to inculcate a culture of research and development in medical devices in institutions of excellence.

Significance:

- **Encourages Local Manufacturers**: Having adequate common infrastructure including accredited laboratories in various regions of the country for standard testing would significantly encourage local manufacturers to get their products tested for standards.

- **Lower Cost of Production**: The measures undertaken would also help in reducing the cost of production which ultimately will improve the availability and affordability of medical devices in the domestic market.

- **Matching with the pace of industry growth**: The industry is growing by leaps & bounds, and if the medical device regulations are dispensed with by qualified and well-trained Medical Device Officers to give a fillip to the Medical Device industry in the country.

PRACTICE QUESTION

1. Does the Indian medical device industry have the necessary resources to produce medical products that meet international standards? Explain

2. Discuss how the medical device industry will support the MSME sector and contribute to India being the 5 trillion economy.

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ROLE OF 'DEPARTMENTAL COMMITTEES' FOR ACCOUNTABILITY OF PARLIAMENT FUNCTIONING

CONTEXT:

The Competition (Amendment) Bill, 2022 and the Electricity (Amendment) Bill, 2022 has been sent for reconsideration to Standing Department Committee of parliament after consideration in monsoon session.

◻ So, let us examine how referring a Bill to the Department Related Parliamentary Standing Committees does help the process of law making.

⊙ ABOUT

The Parliamentary Standing committee:

- A standing committee is a committee consisting **of Members of Parliament.**

- It is a **permanent and regular committee** which is constituted from time to time according to the provisions of an **Act of Parliament or Rules of Procedure and Conduct of Business.**

- **Standing committees are of the following kinds** :

  ➤ Financial standing committees (FSC)

  ➤ **Department related standing committees (DRSC)**

  ➤ Other standing committees (OSC)

- The Parliament has **24 Department Related Parliamentary Standing Committees (DRSC),** comprising members of the Parliament of both the Lok Sabha and the Rajya Sabha in the ratio **2:1.**

- These committees are constituted by the **Speaker of Lok Sabha** and the **Chairman** of the Rajya Sabha.

- The **term of office** of these committees does not exceed **one year.**

- These committees are serviced either by **Lok Sabha secretariat** or the **Rajya Sabha secretariat**, depending on who has appointed the chairman of that committee.

> Any Bill introduced in Lok Sabha or Rajya Sabha can be referred to a DRSC by either **the Speaker** of the Lok Sabha **or Chairman** of the Rajya Sabha.

Functions of the parliamentary Committees:

- It examine various legislations referred to it

- The budget proposals of different Ministries

- Policy thinking on the vision, mission

- Future direction of the Ministries concerned

Why these committees are important?

- **Analysis of Bills in respective houses:** It has been alleged that Bills which are not being referred to the parliamentary committees, are not examined properly, especially from the perspective of consumers and stakeholders. **Example**: Farm bills.

- **Effective law making:** The committee involves participation of parliamentary members and add value to the content of the legislation, the Members, their party positions notwithstanding, try to reach a consensus.

How the Standing Committee assure accountability of functioning?

- **Think on critical issues:** Parliament deliberates on matters that are complex, and therefore needs technical expertise to understand such matters better.

  ➤ Committees help with this by providing a forum where Members can engage with domain experts and government officials during the course of their study.

- **Regional aspects considerations:** Committees also provide a forum for building consensus across political parties. The proceedings of the House during sessions are televised, and MPs are likely to stick to their party positions on most matters.

- **Maintain Cooperation**: Committees also examine policy issues in their respective Ministries, and make suggestions to the government.

- **Economic functions**: Besides Bills, the DRSCs also examine **the budget.** The detailed estimates of expenditure of all ministries, called Demand for Grants are sent for examination to the DRCSs.

PRACTICE QUESTION

1. Examine how referring a Bill to the Department Related Parliamentary Standing Committees does help the process of law making?

2. What is the role and responsibilities of departmental committees and how they examine policy Issues in their respective ministries? Comment

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UNDERSTANDING THE FUNCTIONING OF THE ATTORNEY GENERAL FOR INDIA

CONTEXT:

One of the Supreme Courts' senior Advocates, Mukul Rohatgi declined the government's offer to be the Attorney General (A-G) for India.

Attorney General of India:

> **Incumbent Attorney General, K K Venugopal:**
> - The term of the incumbent A-G, K K Venugopal, ends on September 30.
> - He is **91 years old** and on his third extension.
> - Venugopal has conveyed to the government that in view of his advanced age, he would not be able to continue after the end of his current term.

- The A-G is the Government of India's first law officer and has the right of audience in all courts of the country.
- **Eligibility:** Under *Article 76(1),* the A-G is appointed by the President from among persons who are "qualified to be appointed a Judge of the **Supreme Court".**
- **Term of Office:** (No specified tenure) *Article 76(4)* says "the Attorney-General shall hold office during the pleasure of the President, and shall receive such remuneration as the President may determine."
- **Duty:** *Article 76(2)* of the Constitution says "it shall be the duty of the Attorney-General to give advice to the Government of India upon such legal matters and to perform such other duties of a legal character, as may from time to time be referred or assigned to him by the President".
- **Removal:** Holds office during President's pleasure & can be removed by President at any time. No grounds for removal or procedure are mentioned in Constitution.
- Articles Related to Attorney-General of India
- The Constitution of India under **Article 76** has provided for the office of the Attorney General for India. He is the **highest law officer** in the country.
- Under **Article 88**, the "Attorney-General of India shall have the right to speak in, and otherwise to take part in the proceedings of, either House, any **joint sitting** of the Houses, and any committee of Parliament of which he may be named a member". However, he "shall **not** by virtue of this article be **entitled to vote**" in the House.

- *Article 105* of the constitution deals with the powers, privileges, and immunities of the Attorney General.

Duties and Functions:

As the chief law officer of the Government of India, the duties of the AG include the following:

- To give advice to the Government of India upon such legal matters, those are referred to him by the President.
- To perform such other duties of a legal character that is assigned to him by the president.
- To discharge the functions conferred on him by the Constitution or any other law.

The president has assigned the following duties to the AG:

- To appear on behalf of the Government of India in all cases in the Supreme Court in which the Government of India is concerned.
- To represent the Government of India in any reference made by the president to the Supreme Court under **Article 143** of the Constitution.
- To appear (when required by the Government of India) in any high court in any case in which the Government of India is concerned.

Special rights enjoyed by the Attorney General of India

- The attorney general enjoys the right of audience in any court of the country when concerned with his duties.
- He further enjoys all the immunities and special privileges available to an MP.
- He has the right to participate in the proceedings of both houses without the right to vote and can be designated as a member.

> **Factual Information:**
> - The first two incumbents of the post were the legendary M C Setalvad and C K Daphtary.
> - The A-G for India is not, like the A-G for England and Wales and the A-G of the United States, a member of the Cabinet.

PRACTICE QUESTION

1. Discuss the role and function of the A-G stating why he has the right to an audience in all courts of the country.

2. Justify by stating the role and constitutional legality of A-G that he is the Government of India's first law officer.

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HYPER-LAPSE CONSUMERISM

CONTEXT:

Consumption is an important element of human civilisation. The notion of consumption has changed and today, several streams of thought co-exist. The COVID-19 pandemic brought shifts in consumer behaviour.

What is consumerism?

◉ Consumerism is the idea that **increasing the consumption of goods and services** purchased in the market is always a desirable goal and that a person's well-being and happiness depend fundamentally on obtaining consumer goods and material possessions.

◉ In an economic sense, it is related to the **predominantly Keynesian idea** that consumer **spending is the key driver of the economy** and that encouraging consumers to spend is a major policy goal.
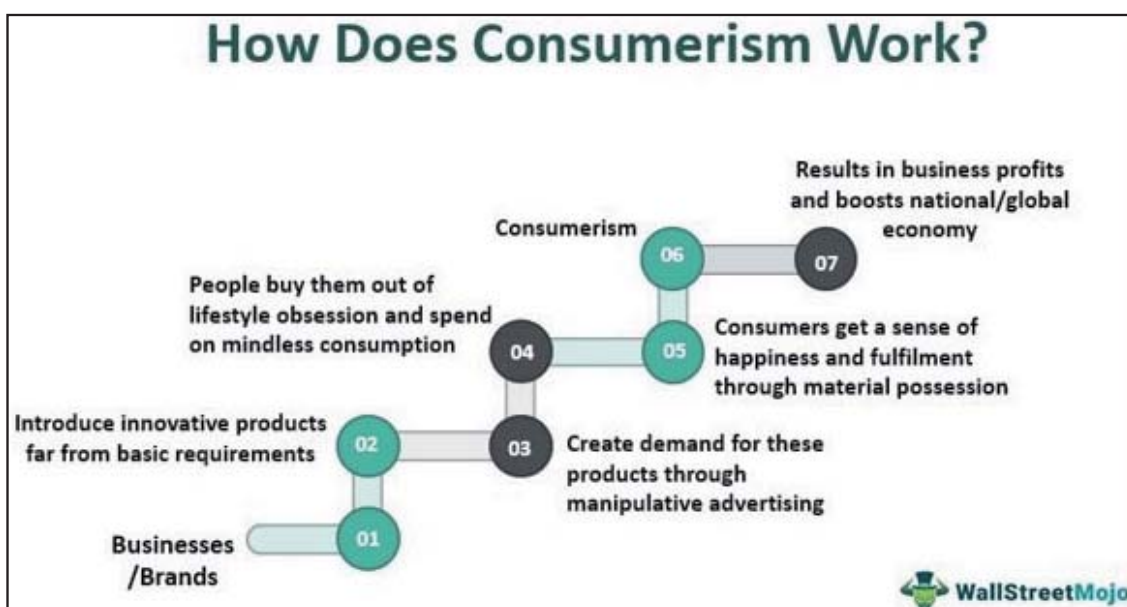
Changes in consumerism:

◉ Lockdowns brought more people into the **e-commerce** fold.

◉ Due to the economic impact of the pandemic, the world witnessed shrinkage of demand.

◉ But post-pandemic recovery and suppressed consumerism are now leading to *'revenge shopping'* **(exorbitantly expenditure on luxury items).**

◉ Modern-day consumerism is not only about wanting more but also wanting it fast.

Hyper Lapse Consumerism

◉ Hyper Lapse Consumerism refers **not only to the kinds of products being sold** but also to the **ease with which consumers order** them and the **speed at which such products are delivered.**

Hyper Lapse Consumerism in India:

◉ In India, food and grocery delivery companies are announcing 10-minute deliveries for consumers.

 ➤ This is being done by strengthening the hyper-local logistical network, leveraging predictive algorithms, process optimisation, and, in some cases, providing incentives and disincentives for delivery partners.

◉ Such indiscriminate work pressure can lead to **fatigue, mental health issues, and other health issues among delivery professionals.**

A NITI Aayog report**, 'India's Booming Gig and Platform Economy'**, suggests extending social security for gig and platform workers, including paid sick leave, health access and insurance, and occupational disease and work accident insurance.

PRACTICE QUESTION

1. Modern-day consumerism is not only about wanting more but also wanting it fast which suggests that we are in the age of Hyper-Consumerism. Comment.

2. India's burgeoning gig economy has the potential to provide up to 90 million jobs in the non-farm economy alone in the long term. Examine the statement with current aspects of the economy. Also, discuss various problems associated with the Gig economy and suggest some policy measures.

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INDIA & ITS START-UP ECOSYSTEM

CONTEXT:

The average annual growth rate of Indian unicorns is more than that of the U.S., the U.K., and many other countries.

⊙ ANALYSIS

What is a Start-up?

- The term start-up refers to a company in the first stages of operations.
- Start-ups are founded by one or more entrepreneurs who want to develop a product or service for which they believe there is demand.

Why is India seeing the rise of start-ups?

- **Benficial demographic dividend:** India's demographic dividend has blessed it with a population of such an age group that has either not entered the job market or is willing to leave the existing job and start a business.
- **Government initiatives** such as start-up India and stand-up India are focused on providing finance, training, market access, tax breaks, etc. to entrepreneurs.
- **Availability of investors**, both foreign and domestic, whose purpose of financing start-ups is to gain multi-bagger returns.
- **Increasing demand** for products and services that can cater to the needs of India's expanding middle class.
- **Telecom and the IT revolution** in India have made getting access to new products and services fairly easy and therefore generating a customer base through a website or an app is not that difficult for start-ups.

How can Start-ups help the Indian Economy?

- **Opportunity:** Start-ups are providing an opportunity to the entrepreneurial youth of India an opportunity to express their idea and grow their finances exponentially.
- **Wealth creation** has therefore become synonymous with start-ups.
- **Employment:** The establishment of a start-up brings with it growth in employment opportunities.
- **Catering to the needy section:** The creation of products or services can cater to the needs of a section of the Indian population and make them economically more potent. For example, the availability of online e-commerce platforms to traditional artisans who can now more easily reach their customers.

Why start-ups are not a complete panacea to India's economic woes?

- **Short-term:** Statistically, a large number of start-ups do not make it big and are shut down.
- **Economic issues:** Closure of start-ups leads to
  - ► loss of the capital invested in them
  - ► loss of employment
  - ► sets a demotivating example for those willing to take chance by establishing a business entity
- **Disparities** in salary and working conditions are also known to exist in the start-up ecosystem to a large extent.
- **Unregulated:** The start-up sector being less regulated has also led to no or minimum labour laws being applied to it.
- **Exploitation:** Most labourers working for the start-ups are not entitled to worker's welfare legislation and therefore face exploitation.

PRACTICE QUESTION

1. India has become the 3rd largest start-up ecosystem in the world after the US and China. Discuss the crucial role played by the government in facilitating the growth of Early-stage start-ups through the implementation of progressive policies and creating relevant infrastructure.

2. India's huge diversity in culture, language, ethnicity and religion has proved to be both a curse and a blessing for start-ups. Examine.

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CHALLENGES OF SUB-NATIONAL FISCAL CORRECTION

CONTEXT:

As per the paper released by RBI an upward trend in States' outstanding debt had observed. An increase in the Debt-GSDP ratio between 2013 and 2022 has been reported in the paper.

What does the recent RBI report have to say about the situation?

◎ **Increase in the States' outstanding debt**: The possible reasons given for this are the implementation of the **Ujwal DISCOM Assurance Yojana (UDAY), farm loan waivers, sustained increase in populist welfare measures,** and **growth slowdown,** especially in 2019-20.

◎ **Increased debt-GSDP ratio**: A combination of increased expenditure and out-of-proportion revenue mobilization efforts has resulted in the increased debt-GSDP ratio (***gross state domestic product)*** between 2013 and 2022.

  ➤ The debt-GSDP ratio of States increased from 22.6 in 2013 to 25.1 in 2018, and further to 31.2 in 2022 *(budget estimates).*

> The **debt-to-GDSP ratio** is the ratio between a state's debt and its gross domestic product. It is a reliable indicator of how capable a state is of paying its debts.

◎ **Decline in revenue receipt**: There is also a decline in revenue receipts due to a fall in the State's own tax revenue.

'Poorly-directed freebies' may adversely affect the country's economy:

◎ Most of the time **freebies are poorly directed** and are a **fiscal mistake** with significant adverse consequences resulting from "**political compulsions".**

◎ Freebies given by state governments can wreak havoc with state finances. We have seen in Sri Lanka's case that **fiscal profligacy always leads to disaster.**

◎ It could only **accentuate the already worsening public debt** situation in many states and create perverse incentives as well as intergenerational friction.

Two kinds of Public Expenditure:

◎ **Mandatory Spending:** Expenditure governed by formulas or criteria set forth, rather than by periodic appropriations and as such, unless explicitly changed.

◎ **Discretionary Spending:** Expenditure governed by annual or other periodic appropriations.

  ➤ Such expenditure is used to stimulate the economy during periods of low demand and declining jobs because of the higher multiplier effect of **government spending.**

Issues related to Discretionary spending by the state:

◎ **No assured output:** The evidence from the other countries shows that there is no direct correlation between the **growth output** and **discretionary spending.**

◎ **Fiscal Stress:** Once started, it is **hard to decrease government** spending later on, as it requires dealing **with the resistance from the public.**

◎ **Spillover effect:** In a federal system, States' fiscal stress gets spilled over to the Centre, leading to a situation of overall ***magnified fiscal slippages.***

◎ **Unsustainable resource mobilization:** To finance discretionary spending, state governments might **resort to borrowing** which may ultimately require **additional resource mobilization which is not sustainable.**

How should governments strike a balance between fiscal deficit and welfare spending?

◎ All government spending contributes to the fiscal deficit, so we need to **scrutinize all spending.** We need to understand "**welfare as a redistributive mechanism",** intended to assist with the leftovers.

◎ The fiscal deficit, arising out of it can be tackled by raising more revenue through taxation, not restricted to income tax.

◎ There is also a widening gap between rich and poor states. Transferring resources from rich to poor states might be a solution but it should not bring another dimension of complexity.

States spending the most on subsidies: According to the Reserve Bank of India (RBI), **Jharkhand, Kerala, Odisha, Telangana, and Uttar Pradesh** are the top five states with the largest rise in subsidies over the last three years.

Fiscal Consolidation: Path of course of correction

◉ The **funds raised through borrowings must be used for capital formation**. This would contribute to the **real income of future generations** and **add** to the **repayment capacity** of the government as well.

◉ The centre needs to **demonstrate its commitment to fiscal discipline** by following to announce fiscal path to ensure the sustainability of a **frictionless cooperative federal structure.**

◉ It is necessary to have strict enforcement of provisions laid under **Article 293(3) and (4)** including a **'system of credit rating'** being introduced for grant of credit facilities to the state government.

PRACTICE QUESTION

1. An increase in the Debt-Gross State Domestic Product (GSDP) ratio of States in India has been reported in RBI's report. Discuss the causes behind this. Suggest some measures.

2. Do you think that the political promises (freebies) before the elections are fiscally sound when the fiscal deficit in India is already high, especially after COVID-19?

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ENVIRONMENT-DRIVEN TAXES

CONTEXT:

The designing and imposing environmental taxes with specific objectives remains challenging due to the complexities involved as there is a very large basket designed in different countries.

Ecotax

- An ecotax **is a tax whose tax base is defined so as to internalise the negative externality** generated either from the production/consumption/ extraction behaviour in an economy.

- The basis of such taxes is **aimed at capturing elements of externalities**.

  ➤ Such taxes are intended to discourage the overuse of natural resources that damage the ecology.

- Countries like China also impose various taxes like "**ecotax" on land use (1984), vehicles (2001), consumption of ecologically harmful products (1994), farmland occupation tax (1987), and pollution levy system (1982).**

- According to the **OECD** (2006), there are about **375 environmentally related taxes** in the OECD countries.

  ➤ The evolution of these taxes has shown that most revenue comes from energy, motor vehicle and transport taxes.

Fiscal instruments to support ecological issues

Carbon taxes are the most contentious fiscal instruments widely discussed which serve the dual purpose of acting as deterrent and raising resources from activities that impact sustainable economic development.

Some of the other taxes in this area which have also been explored globally are:

- **Taxes on plastic bags in Ireland** were introduced in 2002. The use of plastic bags in the litter was reduced from 5% to 0.13% in 2015.

- **Deposit refund packaging scheme in Finland** was first introduced in 1950, where a refund was provided on the deposit of used beverage packaging. Similar schemes are also in place in the UK and the USA.

- **Landfill tax in the UK** was introduced in 1996 to reduce the amount of waste sent for landfilling and boost waste recycling.

- **Tax on nitrogen emissions in Sweden** was introduced in 1992 to discourage activities with nitrogen emissions.

  ➤ This resulted in a reduction in nitrogen emissions by 30-40%.

- **Fishing license in Ireland** was introduced in 2007, primarily due to declining stocks of salmon and overfishing in the area.

  ➤ License fees were doubled, resulting in the stabilisation of salmon stock, generated revenues with a significant impact on the river banks and restoration of riparian zones.

Ecotax in India:

Some examples of "ecotax" in India at a regional level are

- **Clean energy tax** by the Government of India introduced in 2010, imposed on coal, peat and lignite

- **Gujarat Green Cess** imposed on electricity, presently stayed by the courts.

- **Vehicle entry tax** introduced in Himachal Pradesh in 2004

- **Tax on old vehicles** introduced by 6 States in India for discouraging old vehicles which impact ecological balance.

- **Cess on non-biodegradable substances**, introduced by Sikkim State in 2005

- **Goa Green Cess** imposed by Goa in 2013.

PRACTICE QUESTION

1. Environmental tax bases should be based on the polluting behaviour rather than on the Polluter. Comment.

2. Environmental challenges are increasing the pressure on governments to find ways to reduce environmental damage while minimising harm to economic growth. In this regard, discuss the advantages offered by Environmental taxes and their use to address the environmental challenges.

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ECOLOGICAL NICHE MODELLING

CONTEXT:

The use of Ecological niche modelling has been started in India, and trying to develop crops and species to grow with the help of technology to reduce the effect of climate change and balance out the demands of the population too.

⊙ ABOUT

What is an Ecological Niche?

- **Niche:** An ecological niche is the right set of environmental conditions under which an animal or plant species will thrive or grow.

- A range of ecological niches can occur within an ecosystem.

- Biodiversity is the result of these niches being occupied by species that are uniquely suited to them.

- **For example:** Desert plants are suited for dry, arid ecological niches because they have the ability to store water in their leaves.
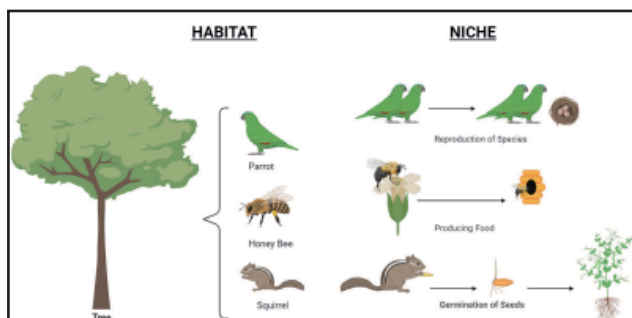
What is Ecological Niche Modelling?

- Ecological niche modelling is a **predictive tool** for identifying new possibilities or new inhabitants for an existing habitat, and even for new geographical locations where a desirable plant may grow well.

- The modelling involves the use of **computer algorithms** to compare data about the environment and to make forecasts about the ideal conditions for a given ecological niche.

Significance of Ecological Niche modelling

- Ecologists use information obtained from modelling for **conservation efforts** as well as for future developments in Agriculture.

- Ecological niche modelling can be used to examine economic feasibilities within the context of **changing ecological scenarios**.

Saffron Plant:

- **Scientific Name:** *Crocus sativus*

- The saffron plant is propagated through underground stems **called corms.**

- It is best suited **in Mediterranean climatic conditions.**

- The **flower** of the plant has three **bright crimson stigmata**, which are handpicked and dried for the commercial saffron.

- Ancient Indian medical texts prescribed saffron for treating disorders of the **nervous system**.

- It adds **flavour and essence** to food items.

How this can be applied in Indian context?

- A recent paper highlights the uses that ecological niche modelling can be put to within the context of India's geographies and agricultural economies in **Himachal Pradesh's Saffron cultivation strategies.**

- Saffron plant is **native to Greece;** however, it can be grown in soils in parts of Jammu and Kashmir and several states in India.

- India produces **5% of the world's saffron**.

- The temperate climate of Jammu and Kashmir is well-suited with a well-drained soil of high pH value (6.3 to 8.3), summer temperatures (when flowers develop) of around **25°C** and good soil nutrient availability.

- Similarly applying this strategy for other native crops can bring economic benefits for other regions too.

What are the stages of development for Niche Modelling?

- **Surveying:** Firstly, the surveying is to be conducted to analyse the conditions of soil, pH, Temperature and other resources for the crop to be grown.

  ▶ For Example; Terrain data for saffron crops (slope, aspect and elevation) came from the Space shuttle radar topography mission (SRTM) **Digital Elevation Model.**

- **Selection of sites:** selection of sites by developing sample plant crops in the region.

- **Availability of resources:** Resources like **funds, scientists and researchers, conservation practices** from wild animals etc.

Impacts of Ecological Modelling

Positive impacts	Negative impacts
• Agricultural development in the region	• Can harm local species in the development region.

• Development of new niche • Supporting economy • Harness the potential of India's Technologies	• Can be destroyed by wild animals and insects. • **Human-wildlife conflict** as the unexplored areas in the forests can be used for crop cultivation.

PRACTICE QUESTION

1. Describe the significance and value of ecological niche modelling in balancing the population's dietary needs.

2. Discuss how ecological niche modelling disrupts the nutritional quality of crops to balance out the food demands?

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SCIENTISTS UNSURE ABOUT HOW 'NANO UREA' BENEFITS CROP

CONTEXT:

Although, Nano Urea (a fertilizer) has been approved by the government for commercial use but several experts have questioned the science underlying its efficacy.

What is Nano Urea?

- It is urea in the form of a **nanoparticle**. It is a **nutrient (liquid)** to provide nitrogen to plants as an alternative to **conventional urea.**

- Urea is chemical nitrogen fertilizer, **white in colour**, which artificially provides nitrogen, a major nutrient required by plants.

Why farmers opt for Nano urea?

- It is developed to replace conventional urea and it can curtail the requirement of the same by at least 50%.

- It allows more absorption than conventional urea as it has Nano particles which consequently absorbed more by the plants.

- The small size (20-50 nm) of Nano Urea increases its availability to crop by more than 80%.

How does Nano urea work?

- When sprayed on leaves, **Nano Urea easily enters through stomata** and other openings and is assimilated by the plant cells.

- It is easily **distributed through the phloem** from the source to sink inside the plant as per its need.

- **Unutilized nitrogen is stored in the plant vacuole** and is slowly released for proper growth and development of the plant.

Why have experts raised questions about the efficacy of Nano Urea?

- **Discrepancy in the percentage of available nitrogen:** Chemically packaged urea is **46% nitrogen** which means a 45 kg sack contains about 20 kg of nitrogen. Contrastingly, **Nano Urea sold in 500 ml bottles has only 4% nitrogen** (or around 20 gm.).

  ➤ This discrepancy in the percentage of available nitrogen has left many experts puzzled.

- **Effectiveness of nitrogen uptake is questionable**: **Urea is highly water soluble** and **already reaches the lowest form of concentration** when absorbed. **Foliar spraying** (spraying on leaves) improves fertilizer uptake is known for over half a century.

  ➤ Even if 100% of 20 gm. of Nano Urea, which is what is effectively available, is utilized by the plant, it will yield only 368 gm. of grain. **Therefore, the total attempt is futile causing sheer wastage of money.**

- **Incidence of increase in yield is superfluous:** Some experts say that, in the first year of application of Nano urea, the nitrogen present in the soil and fertilizer was already sufficient, and supplying nitrogen via Nano Urea was superfluous.

What is the counter-argument?

- **Conventional forms of urea** when fall on the soil, all the **nitrogen present in that granule**, typically 1-2mm in size, becomes available readily to the crop. But because of **burst release,** the **ammonia escapes into the environment**, reacts with oxygen in the environment, and becomes nitrous oxide which is a **greenhouse gas.**

- On the contrary, Nano-urea is sprayed on the plant leaf. These are particles of 20 to 50 nanometres. They get readily absorbed by the plant, and release nitrogen inside the plant.

  ➤ They also **stimulate the enzymes involved in nitrogen metabolism** inside the plant cells and **boost the protein content**, **chlorophyll content,** and the nucleotides such as RNA content or **DNA content.**

PRACTICE QUESTION

1. What is Nanotechnology? How it benefits India's Agriculture practices?

2. The global agricultural landscape has radically changed since the revolution of green nanotechnology. Discuss in this light the role of Nano Fertilizers in ensuring nutritional requirements of crops.

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10 YEARS OF CRISPR TECHNOLOGY

CONTEXT:

Over the last few years, gene-editing technology has produced flawless results in clinical trials. India has approved a 5-year project to develop CRISPR to cure sickle cell anaemia.
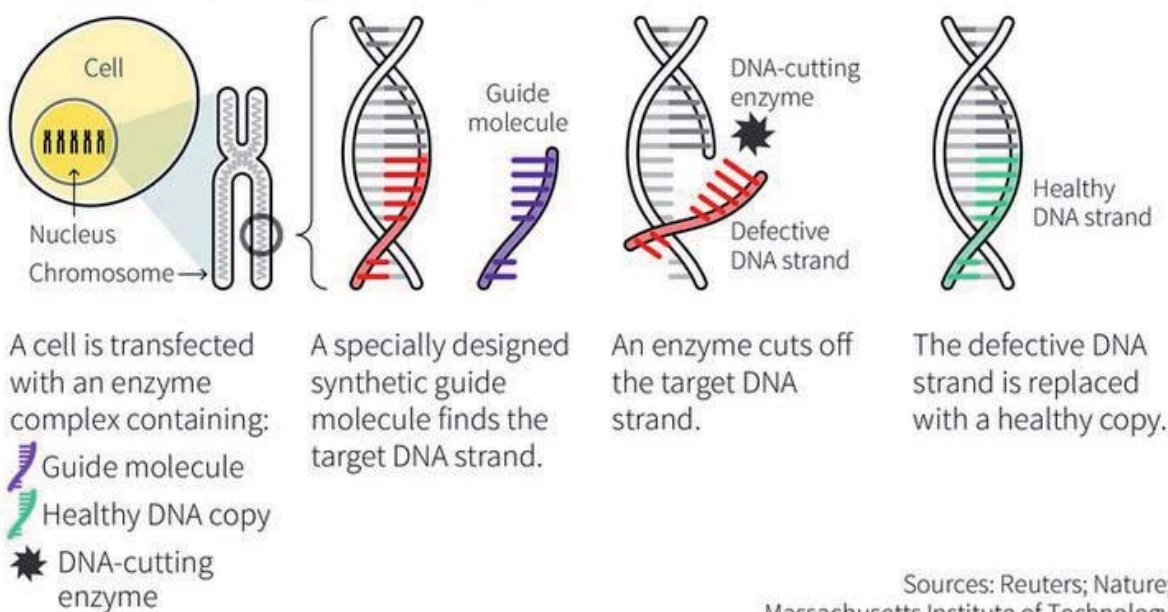
What is Genome Editing?

- **Genome editing (also called gene editing)** is a group of technologies that give scientists the ability to change an organism's **Deoxy-Ribonucleic Acid (DNA).**

- These technologies allow genetic material to be added, removed, or altered at particular locations in the genome.

- Advanced research has allowed scientists to develop the highly effective **Clustered Regularly Interspaced Palindromic Repeat (CRISPR)**, associated proteins-based systems. This system allows for targeted intervention at the genome sequence.

- It is currently the simplest, most versatile, and most precise method of genetic manipulation and is therefore causing a buzz in the science world.

DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

HOW THE TECHNIQUE WORKS

A cell is transfected with an enzyme complex containing:
- Guide molecule
- Healthy DNA copy
- DNA-cutting enzyme

A specially designed synthetic guide molecule finds the target DNA strand.

An enzyme cuts off the target DNA strand.

The defective DNA strand is replaced with a healthy copy.

Sources: Reuters; Nature; Massachusetts Institute of Technology

The CRISPR technology:

- CRISPR is short for **Clustered Regularly Interspaced Short Palindromic Repeats**, which is a reference to the *clustered and repetitive sequences of DNA* found in bacteria, whose natural mechanism to fight some viral diseases is replicated in this gene-editing tool.

- In popular usage, "**CRISPR**" (pronounced "crisper") is shorthand for "**CRISPR-Cas9**." CRISPRs are specialized stretches of DNA, and the **protein Cas9**, where **Cas stands for "CRISPR-associated",** is an enzyme that acts like a pair of molecular scissors, capable of cutting strands of DNA.

- CRISPR is a powerful tool for editing genomes, allowing researchers to easily alter DNA sequences and modify gene function.

CRISPR–Cas9 is a unique technology that enables editing parts of the genome by removing, adding or altering sections of the DNA

Guide RNA (gRNA) guides Cas9 to the right part of the genome

Enzyme Cas9 (acts as a pair of 'molecular scissor')

Target DNA

CRISPR molecule

1 SEARCH
A CRISPR molecule finds a precise location in the target DNA.

2 CUT
The CRISPR enzyme cuts the target DNA at the point found by the guide.

3 EDIT
A new custom sequence can be added when the DNA is repaired.
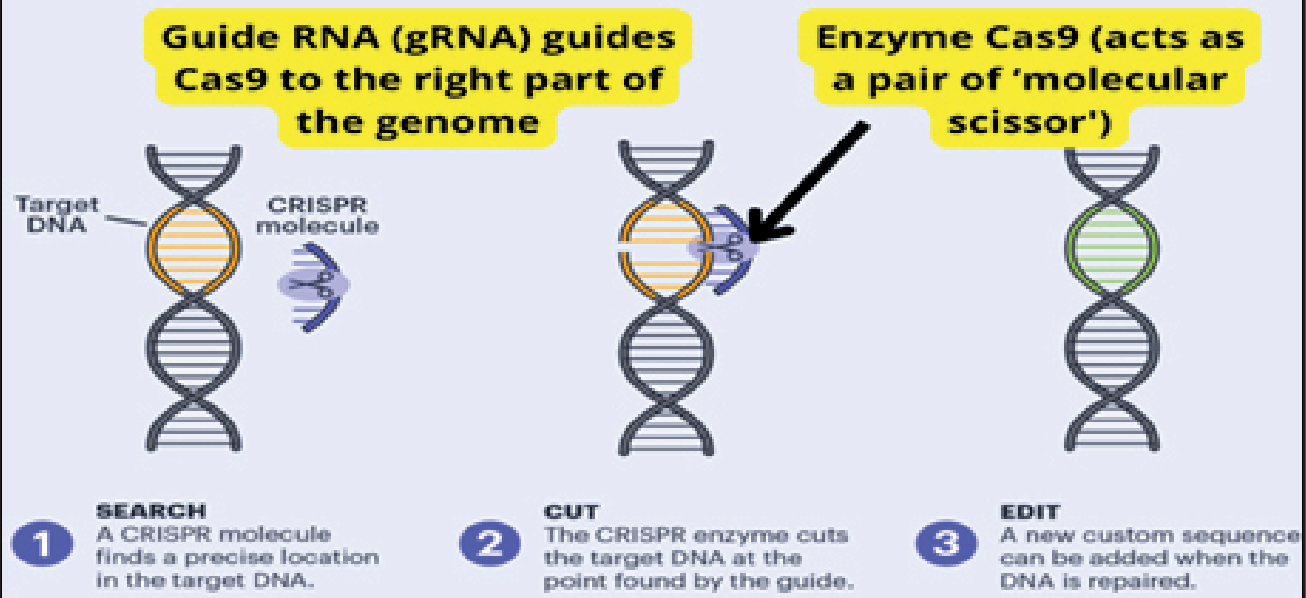
How this Technology is simple from any of its predecessors?

- It is simple, and still far more accurate — and it **does not involve the introduction of any new gene from the outside.**

- Its mechanism is often compared to the **'cut-copy-paste'**, or **'find-replace'** functionalities in common computer programs.

- A bad stretch in the DNA sequence, which is the cause of disease or disorder, is located, cut, removed; and then replaced with a 'correct' sequence.

- **And the tools used to achieve this are not mechanical, but biochemical**, specific protein and RNA molecules.

- The **technology replicates a natural defence mechanism** in some bacteria that use a similar method to protect themselves from virus attacks.

- Potential of CRISPER-gene editing technology:

- **Correcting genes:** It open ups the **possibility of 'correcting' genetic information** to cure diseases, prevent physical deformities, or to even produce cosmetic enhancements.

- **Permanent cure to genetic disorders:** This technology opens up the possibility of finding a permanent cure for many of these diseases arising due to genetic disorders, like sickle-cell anaemia.

- **Cure to deformities due to abnormalities in gene sequences:** It also works in deformities arising out of **abnormalities in gene sequences**, like stunted or slow growth, speech disorders, or inability to stand or walk.

CSIR's Institute of Genomics and Integrative Biology has indigenously developed a **CRISPR-based therapeutic solution for sickle cell anaemia**, which is now being readied for clinical trials.

PRACTICE QUESTION

1. Genome editing is a group of technologies that give scientists the ability to change an organism's DNA. How this technology will contribute to the treatment of serious illnesses? Discuss

2. Discuss the significance of CRISPR technology and how it would beneficial for understanding human evolution over time.

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MOON LIGHTING AND ETHICS

CONTEXT:

Recently, IT sector of India has broken with the debate w.r.t. moonlighting, which has been triggered by the comment of Wipro Chairman. He called 'moonlighting' as cheating and considered it unethical for Employees.

What does Moonlighting means?

- The practice of working for one organisation while also taking up extra responsibilities and jobs, typically without the employer's knowledge, is referred to as **moonlighting.**

- It is called so the **side employment** is typically performed at night or on the weekends.

Legality of Moonlighting in India

- Yes, **it is legal,** subjected to **restrictions** by the Institution of employment and depends upon the employer conditions.

- A person can work more than one job in India without breaking the law. However, a person with a similar set of jobs could give rise to concerns about a violation of confidentiality because many employers include such restrictions in their employment agreements in addition to prohibitions against holding down multiple jobs.

- **Contractual provisions:** Moonlighting could be considered cheating if an employee's contract calls for non-compete and single employment, which is the situation with the majority of conventional employment contracts.

Criteria to Judge the ethics related to moonlighting

Moonlighting as Ethical	It is considered ethical when working with other Institution or company does **not hamper the efficiency** of the employee and in any cost he/she will not affect the decorum of the Employment place.
Moonlighting as Unethical	Moonlighting is considered Unethical, when working with other Institution or engagement in other work hampers the **cost, revenue, efficiency and legality of the Employer by employee.**

Ethical dilemmas for different Stakeholders

- Every company's ethical dilemmas may be unique to their industry or company; however, other types of ethical issues affect all types of businesses.

- **For IT sector**, ethical dilemmas are to be focused because they pay more to their employees and possess contract relationship for a period of time.

- **For other private institutions**, ethical concerns must be addressed with wisdom so to reduce the impact of moonlighting.

- **For Public institutions**, Moonlighting is unethical for government institutions as it is restricted by the government agencies for their employees to work outside the organisation or for another institution.

Factors responsible for Moonlighting

Influence Moonlighting	To control Moonlighting
• Lack of employee friendly conditions	• Providing adequate pay
• Insufficient pay to employees	• Incentivising Employment benefits
• Exploitation at workplace	• Awareness regarding Ethical concerns
• less responsibilities	• To Provide more responsibility

Techniques to be adopted by Institutions to resolve ethical dilemmas

- **Ethical relativism**: It refers to multinational corporations doing business in a country by strictly adhering to its culture or ethics.

- **For example**, if bribery is a culture or ethics of doing business in a specific host country, multinational corporations must adhere to the local culture or ethics in order to survive.

  ➤ Ethical relativism may assist multinational companies in surviving in the host country's market without barriers, but it also has drawbacks.

- **Ethical universalism**: It refers to a set of ethical standards that apply to all countries.

  ➤ Ethical universalism has an advantage because it is seen as having a higher moral responsibility because corporations are said to be more ethical and stricter in following human rights.

  ➤ In terms of disadvantages, in some cases, it may lead to a form of cultural imperialism, in which multinational corporations believe that a certain country's culture is immoral and inferior.

SECTION: B
(CONTEMPORARY ISSUES BASED ESSAY)

THE SERIES OF ERRATIC RAINS, HEAT WAVES AND FLOODS THROUGHOUT THE WORLD ARE SIGNALLING OUR FAILURE TO ADDRESS CLIMATIC CHANGE

Through voluntary international cooperation, the world sought to mitigate the series of erratic rains, heat waves and floods throughout the world by the Montreal Protocol of 1992 and went a long way to solving the problem of the hole in the ozone layer. Using it as their model for the solution to the even more daunting problem of global warming, in 1997 most nations of the earth signed the Kyoto Protocol. It was eventually ratified by almost all advanced economies being asked to commit to greenhouse gas emission targets. The Paris Climate Agreement in 2015 set the limit of temperature rise by 2 degree Celsius. Similarly the most recent Glasgow Climate Pact under COP 26 also tried to get the temperature limits and the funding source to address climate change.

Virtually no one any longer believes that temperature will be able to be contained to the internationally recognised tipping point of two degrees Celsius above temperature levels at the time of the industrial revolution. Many climate scientists fear a temperature rise of four or five degrees Celsius by century's end. We know that if we continue to use fossil fuels as our primary energy source, the conditions of life on the earth for our own species and for others will be damaged, perhaps beyond repair. And yet, eyes wide shut the nations of the earth are doing very little to avert the impending, entirely foreseeable catastrophe.

Climate change has immense, but largely neglected, implications for human rights also. The rights to life, food, housing, and water will be dramatically affected. But equally importantly will be the impact on democracy, as governments struggle to cope with the consequences and to persuade their people to accept the major social and economic transformations required. In such a setting, civil and political rights will be highly vulnerable along with the climate associated threat through natural and man-made disasters. This perceptible threat causes us to think that where we are heading and what needs to be done to get the desired outcomes?

Nations participate in the international system predominantly to safeguard and advance their self-interest – the so-called "national interest". Only when they think the national interest is served will they form alliances or involve themselves in broader schemes of international cooperation. The United Nations is powerless to compel cooperation. Even in military alliances, national sovereignty is preserved. Very occasionally, as with the Montreal Protocol, international cooperation to solve an environmental problem through economic self-denial is successful. But such action is always merely on the margins of an economy and in no way even a possible threat to the pursuit of national interest.

International action against global warming needs to be different. The action required involves a series of domestic economic revolutions—transferring the source of energy from fossil fuels to clean alternatives in a relatively short time. This necessarily involves some sacrifice of national self-interest in the short and the medium term. Immediate, radical cuts in greenhouse gas emissions are expressions not of national interest as commonly understood but rather of national altruism. Progress in combating climate change requires acts of good global citizenship. Only a handful of advanced economies—Germany, Denmark, Norway most notably—have acted thus.

Nor is it only the two economic superpowers U.S and China, which are systematically resistant to the kind of subordination of national self-interest necessary for concerted and radical action to curb greenhouse gas emissions. As the problem of global warming is an historical product of the early industrial nations, it is almost impossible to convince the largest newly emerging and fast growing economies, like India or Brazil or South Africa—that their overriding obligation is to act in the interests of the earth and not in the immediate, short-term interests of their own people.

Similarly, it has been, and will continue to prove, impossible to convince the fossil fuel-reliant economies, like Russia and the oil producing nations of the Middle East, to sacrifice supposed national economic self-interest in favour of the future wellbeing of human and other species. As everyone knows, the electoral cycles are systematically biased towards political and policy short-termism. The fierce party-political competition reduces the capacity for the creation of bi-partisanship or multi-party agreement on an issue as contentious and costly as a revolution in the source of energy, while increasing the likelihood of opportunistic populism. There are also other formidable roadblocks to change.

Instead, we've had a slew of measures to address climate change which rely on making emissions reductions profitable. But the quickest ways to reduce emissions aren't always the most profitable. And what is profitable for some can be harmful for less powerful people and communities. One example is carbon credits – permits that allow firms and governments to meet emissions targets and offset their pollution by funding projects that reduce emissions elsewhere, mainly in developing countries. The Clean Development Mechanism (CDM) organised by the UN was meant to help reduce emissions this way. As agreed in the 1997 Kyoto Protocol, the CDM was supposed to mobilise investment to install renewable energy, retrofit factories and restore habitats. While a large market developed for carbon offsets, it failed to substantially reduce emissions. A major reason for this

was its reliance on profit-seeking private investors. Many of the projects funded through the CDM were probably profitable on their own; the distribution of CDM credits very closely mirrors patterns of private foreign investment in developing countries, with the vast majority funding projects in China and India.

Another major plank of climate action so far has been incentivising the adoption of new technologies with lower emissions. Governments in developed countries have offered subsidies for people to buy electric cars, or increased funding for research and development of clean energy technology. It is tempting to think public and private investment in renewable energy might allow governments, businesses and civil society to pull together and fight climate change. But there remain significant obstacles. As long as producing fossil fuels remains profitable, these firms will resist efforts to stop selling them.

Psychologists have long recognised the phenomenon of denial in the individual. More sociological work is now needed to outline the dynamics of patterns of denial that are society-wide. In tandem with political scientists such work will need to investigate the explicitly denialist movements that have gained hold of opinion in the Anglosphere during the past few years. Perhaps even more challenging however will be the investigation of the far more common and dangerous pattern, to which almost none of us is immune: namely denialism in everyday life, or the ways in which so many citizens, knowing what they do, manage somehow to live their lives in parallel universes, on one level of existence accepting intellectually that the threat of catastrophic global warming exists, and on another finding ways of living and thinking, calmly and comfortably, as if nothing of great moment was happening that was placing the future of humankind and of other species in gravest peril.

The main hope rests now not with the chimera of some comprehensive, binding international agreement but with the ultimately interconnected possibilities. Climate action so far has failed to confront the interests of powerful businesses and governments, while passing costs on to vulnerable people and places which have contributed very little to the climate crisis. If we want results, we may need to go beyond simply demanding action and instead focus on changing the way the global economy is organised and governed. Historically, the largest emissions come from the fossil fuel burnings of the developed world. What right have they now to demand that developing countries exercise greenhouse gas emissions restraints in their struggles to reach levels of prosperity approximating those of the already developed economies? Unfortunately, however, the atmosphere of the earth is indifferent to arguments of historical or social justice.

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SECTION: C
(PRELIMS)

CURRENT AFFAIRS

RAJPATH TO KARTAVYA PATH

⊙ **CONTEXT:** **Prime Minister inaugurated the 'Kartavya Path' (the revamped Central Vista Avenue) at the India Gate and renamed it from 'Rajpath' denoting the freedom from the slavery and terms used during British Raj.**

⊙ **ABOUT**

- Rajpath (formerly known as Kingsway), is a ceremonial path in New Delhi, India, that runs from Rashtrapati Bhavan on Raisina Hill through Vijay Chowk and India Gate to National Stadium, Delhi.

- The avenue is lined on both sides by huge lawns, canals and rows of trees.

- Considered to be one of the most important roads in India, it is where the annual Republic Day parade takes place on 26 January.

History related to the Name

- When built the road was built, named as the King's Way, or Kingsway, in honour of the Emperor of India George V, who had visited Delhi during the Durbar of 1911.

- Following the independence of India, the road was given its Hindi name, 'Rajpath', in place of its English designation. However, it was mere a translation of the English word to Hindi.

> **The Design:**
>
> The area of the present-day central vista was designed by British architects **Sir Edwin Lutyens and Herbert Baker** from (1921-1927).

The Redevelopment Project:

- The Central Vista Redevelopment Project started construction on 4 February 2021 and is planned to be finished in 2026 in phases.

The New Kartvya Path (Indianised feeling)

- There is not only change in the names but also several features were added for glorifying the beauty of Azaadi ka Amrit Mahostav.

- The statue of **Netaji Subhas Chandra Bose**, is being installed which was crafted by **Arun Yogiraj,** the main sculptor, carved from a monolithic granite stone and weighs 65 metric tonnes.

- It also envisages a new triangular Parliament building, a common central secretariat, revamping the three-km Rajpath, a new prime minister's residence and office, and a new vice-president's enclave.

Eliminating the Colonial Hangover:

These are several recent steps taken by the government for Shifting from terms used, symbols and other works at that time;

- Renaming of Andaman Islands after **Netaji Bose,**
- To rename the Race Course Road as **Lok Kalyan Marg**
- The Indian Navy has also adopted **Chhatrapati Shivaji's symbol**
- The time and date of the Indian Budget, which was following the times of the British Parliament for so many decades, have also been changed.
- Inclusion of Regional Languages in the **New Education Policy.**

KEDAMBADY RAMAYYA GOWDA'S STATUE TO BE BROUGHT TO MANGALURU

⊙ **CONTEXT:**   **A bronze statue of Kedambady Ramayya Gowda, who revolted against the British in a mass insurrection in 1837, will be brought to Dakshina Kannada, Mangaluru, Karnataka.**

About Kedambady Ramayya Gowda's:

- Kedambady Ramayya Gowda has revolted against the British in a mass insurrection in 1837.
- He led the 'Amara Sullia uprising'.
- Gowda's army succeeded in defeating the British army and had lowered the British flag before hoisting the Kodagu Haleri dynasty's flag in Bavutagudda on April 5, 1837.
- After the 13th day of hoisting the flag, the rebellion was crushed by the British army.

About the revolt:

- The **'Amara Sullia Danger or Kodagu- Canara Mutiny** took place twenty years before the First War of Independence in 1857.
- The revolt was against the high land revenue (tax) assessment and the absence of a lucrative market for farm produce.
- The revolt broke out against the **East India Company** in the coastal belt during 1830-31.
  - ⊙ It reached the stage of an armed struggle in 1837.

V.O. CHIDAMBARAM 151ST BIRTH ANNIVERSARY

⊙ **CONTEXT:**   **Thousands of people gathered at the Coimbatore Central Prison to pay homage to freedom fighter V. O. Chidambaram on his 151st birth anniversary.**

Who was V. O. Chidambaram?

- Vallinayagam Olaganathan Chidambaram Pillai (VOC) was popularly known as Kappalottiya Tamilan (The Tamil Helmsman).

- Chidambaram Pillai was born on 5th September 1872 to an eminent lawyer Olaganathan Pillai and Paramyee Ammai in Ottapidaram, Tirunelveli district of Tamil Nadu.

- He graduated from Caldwell College, Tuticorin.

- He died on 18th November 1936 in the Indian National Congress Office at Tuticorin as was his last wish.

Entry in Politics:

- He entered politics in 1905 following the partition of Bengal.

- By the end of 1905, he visited Madras and was **drawn closer to the Swadeshi Movement initiated by Bal Gangadhar Tilak and Lala Lajpat Rai**.

- **He was drawn towards Ramakrishna Mission** and came into contact with **Subramania Bharati and the Mandayam family.**

- By 1906, he won the support of merchants and industrialists in Tuticorin and Tirunelveli for the idea of establishing a Swadeshi merchant shipping outfit by the name of the Swadeshi Steam Navigation Company.

- He **established many institutions** like **Swadeshi Prachar Sabha**, **Dharmasanga Nesavu Salai**, **National Godown**, **Madras Agro-Industrial Society Ltd,** and **Desabimana Sangam.**

- **Even before Gandhiji's Champaran Satyagraha (1917),** he took up the cause of the working class in Tamil Nadu, and thus **he is a forerunner to Gandhiji in this respect**.

- He along with other leaders resolved to take out a mammoth procession on the morning of 9th March 1908 to celebrate the **release of Bipin Chandra Pal from jail and to hoist the flag of Swaraj.**

Important Literary work can be summarized as follows:

- Meyyaram (1914), Meyyarivu (1915), Anthology (1915), Thirukural with literary notes of Manakudavar (1917), Tholkappiam with literary notes of Ilampooranar (1928), Autobiography (1946).

HERITAGE CAMP AT RAMAPPA TEMPLE

⊙ **CONTEXT:**   **A 12-day World Heritage Volunteers (WHV) Camp-2022 is organised under the aegis of the Warangal-based Kakatiya Heritage Trust at the historic Ramappa temple in Palampet of Mulugu district.**

About Ramappa Temple

- **Ramappa Temple, also known as the Rudreshswara (Lord Siva) temple,** is a UNESCO World Heritage Site located in the state of Telangana.

- It lies in a **valley in Palampet village of Venkatapur Mandal of Mulugu district,** a tiny village long past its days of glory in the **13th and 14th centuries.**

- An inscription in the temple dates it to the **year 1213 CE** and says it was built by a **Kakatiya General Recharla Rudra Deva,** during the period of the **Kakatiya ruler Ganapati Deva.**

- This temple was constructed by **Kakatiya king Ganapati Deva's general Recharla Rudra.**

- Kakatiya Dynasty was the South Indian dynasty that ruled Andhra Pradesh in India from 1083 CE to 1323 CE.

- **Ramalingeswara Swamy** is the presiding deity of this temple.

- **Marco Polo,** during his visit to the Kakatiya Empire, allegedly called the temple **"the brightest star in the galaxy of temples".**

Architecture:

- The temple complexes of Kakatiyas have a distinct style, technology, and decoration exhibiting the influence of the Kakatiyan sculptor.

- The temple stands on a 6 feet high star-shaped platform with walls, pillars, and ceilings adorned with intricate carvings that attest to the unique skill of the Kakatiyan sculptors.

- The foundation is built with the **"sandbox technique",** the flooring is granite, and the pillars are basalt.

- The technique involved filling the pit — dug up for laying the foundation — with a mixture of sand-lime, jaggery (for binding) and karakkaya (black myrobalan fruit) before the buildings were constructed on these 'sandboxes'.

- The sandbox in the foundation acts as a cushion in case of earthquakes.

- Most of the vibrations caused by earthquakes lose their strength while passing through the sand by the time they reach the actual foundation of the building.

- The lower part of the temple is **red sandstone** while the **white gopuram** is built with light bricks that reportedly float on water.

- The Kakatiya temples, dedicated mostly to Shiva, reveal in their construction a happy blending of the styles of North India and South India which influenced the political life of the Deccan.

- They adopted both the **North Indian Nagara Bhumija style and the South Indian Dravida style.**

- The most important of these temples are those at **Palampet (Ramappa temple), Hanamkonda (Thousand Pillared temple)** and the temples in the Warangal fort including the big ruined temple complex — **Swayambhunadha temple.**

ASI FINDS BUDDHIST CAVES, AND TEMPLES IN MP

⊙ **CONTEXT:** **The Archaeological Survey of India (ASI) has reported 20 Buddhist caves, ranging from the 2nd Century BC to 5th Century BC, at Madhya Pradesh's Bandhavgarh Tiger Reserve.**

⊙ **ABOUT:**
- The Buddhist religious artefacts found in the **region of Baghelkhand** are of the **Mahayana sect** of Buddhism.

- This is also the **first time Bandhavgarh has been explored** since archaeologist NP Chakravarti **last explored it in 1938**.

- **Key Findings:** Some of the **key findings** are
  - board games
  - monolith depicting the ten avatars of Vishnu
  - a votive stupa
  - two Saiva Math belonging to the Kalachuri period
  - chaitya-shaped doors, coins, stampage and as many as 46 new sculptures which were never seen before
  - Fragments of a Buddhist pillar dating to the 2nd or 3rd Century BC were found at the site as well
  - Over 24 Brahmi inscriptions, dating to 2nd Century to 5th Century BC, were also found.
    - ➤ The inscriptions mention sites such as Mathura and Kaushambi, and Pavata, Vejabharada and Sapatanaairikaa.
    - ➤ The kings they mention include Bhimsena, Pothasiri and Bhattadeva.
  - Also part of the findings is 26 ancient temples and remains from the Kalachuri period.
  - The team also found evidence of 19 water bodies.
  - Remains of the Gupta period, such as door jambs and carvings from 4th to 5th century BC were documented during the exploration.

The **Kalachuri dynasty**, which spread over parts of Gujarat, Maharashtra and Madhya Pradesh, is also associated with the earliest Ellora and Elephanta cave monuments.

About Bandhavgarh Tiger Reserve:

- Bandhavgarh National Park is located in the **Umaria district of Madhya Pradesh**.

- Bandhavgarh was declared a **national park in 1968** and then became **Tiger Reserve in 1993.**

- **Historical Significance**: Its mention can be found in the ancient books of the **'Narad Pancharatra'** and the **'Shiv Purana'** that this place is being associated with Ramayana.

  - The park derives its name from the most prominent hillock of the area, which was said to be given by Hindu Lord Rama to his brother Lakshmana to keep a watch on Lanka. Hence the name Bandhavgarh (Sanskrit: Brother's Fort).

  - The Bandhavgarh Fort is a **great masterpiece** of **"Treta Yuga"** (one of the ages of mankind in Hinduism).

  - It was ruled by major dynasties including **Sengars**, the **Kalchuris,** and the **Baghels** (believed to rule the regions for the longer period).

About Archaeological Survey of India (ASI):

- The Archaeological Survey of India (ASI), under the **Ministry of Culture**, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation.

- **Maintenance** of ancient monuments and archaeological sites and remains of national importance is the prime concern of the ASI.

- Besides it **regulate all archaeological activities** in the country as per the provisions of the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.

- It also **regulates Antiquities and Art Treasure Act, 1972.**

RAINBOW CLOUDS

◉ **CONTEXT:** Recently, an unusually-shaped rainbow cloud appeared over China. The cloud in question resembles a pileus cloud, and the phenomenon of bright colours appearing on a cloud is called cloud iridescence.

◉ **ABOUT** **What is a pileus cloud?**

- A pileus cloud is usually **formed over a cumulus or cumulonimbus cloud**.

- It is formed when the **base cloud pushes a moist current of air upwards** and the water vapour from the current condenses to somewhat resemble wave-like crests or umbrellas.
- A pileus cloud is **transient in nature** and lasts barely for a few minutes, making it difficult, and at the same time, exciting, to spot.

Cloud iridescence:

- Cloud iridescence or Irisation is an **optical phenomenon** that mostly occurs in wave-like clouds, including
  - pileus
  - Altocumulus lenticularis
- Iridescence in clouds means the **appearance of colours on clouds**, which can either be in the form of parallel bands like in a rainbow or mingled in patches.
- In ancient Greek mythology, Iris is the goddess of the rainbow.
- "Irisation", the phenomenon of rainbow-like colours in clouds, is derived from her name.
- The iridescence of clouds is a **photometer – an optical phenomenon produced by the reflection, refraction, diffraction, or interference of sunlight.**

Cause of cloud iridescence:

- In pileus clouds, small water droplets or ice crystals, usually of a similar size, diffract the sunlight from falling on them. The thinness of the cloud ensures more exposure to sunlight for each water droplet or ice crystal.
- To ensure its wave crest-like appearance, water droplets or ice crystals in these clouds are always moving – droplets form at one side of the cloud and evaporate from the other end – and hence these clouds remain small and thin since the droplets have no way of combining and growing in size.
- **Diffraction:** Iridescence or Irisation is caused by diffraction within 10 degrees from the sun. Beyond ten degrees and up to about 40 degrees, interference of light is the main cause of iridescence.

'TRIPLE DIP' LA NINA AND ITS IMPACT ON INDIA'S MONSOON

⊙ **CONTEXT:**   Australia's Bureau of Meteorology (BOM) predicted that a third consecutive event of La Niña could be underway.

What is La Niña?

> **El Nino-Southern Oscillation (ENSO)**
> - ENSO is the interaction between the atmosphere and ocean in the tropical Pacific.
> - It is a series of linked weather and ocean-related phenomena.

- La Niña involves the large-scale cooling of the ocean surface temperatures in the central and eastern equatorial Pacific Ocean coupled with changes in the tropical atmospheric circulation (winds), pressure, and rainfall.
- It usually has the opposite impact on weather and climate as El Niño.

- La Niña is characterized by lower-than-normal air pressure over the western Pacific.

- These low-pressure zones contribute to increased rainfall.

- La Niña years are associated with above-average trade winds, pushing the warmer waters towards Asia and drawing in cooler than normal water temps to the equatorial pacific.

- Causes: La Niña is caused by a build-up of cooler-than-normal waters in the tropical Pacific, the area of the Pacific Ocean between the Tropic of Cancer and the Tropic of Capricorn.

  - Unusually strong, eastward-moving trade winds and ocean currents bring this cold water to the surface, a process known as **upwelling.**

- **Effects:** La Niña affects; patterns of rainfall, atmospheric pressure and global atmospheric circulations.

What does a *triple La Niña mean*?

- A **triple La Niña or a 'triple dip' La Niña** is a rare occurrence, lasting for three years in a row. It has happened only twice since 1950.

- On the contrary, the occurrence of two consecutive La Niña winters in the Northern Hemisphere is common.

Impact of El Nino and La Nina

- El Nino is associated with drought or weak monsoons.
- La Nina is associated with strong monsoons and above average rains and colder winters.

Impact on India

- **Monsoon:** India may experience an extended monsoon lasting up to October due to La Niña.

- **Agriculture:** La Nina could have negative impacts on Indian agriculture. Farmers will be at risk of losing their standing Kharif crops if it rains during this period.

'ONE NATION, ONE FERTILIZER' SCHEME

⊙ **CONTEXT:**   **The Ministry of Chemicals and Fertilisers announced to implement** *of One Nation One Fertiliser.*

- India is among the world's largest buyers of fertiliser, besides China, Brazil, and the US.
- India imports four types of fertilisers:
  - ➤ Urea
  - ➤ diammonium phosphate (DAP)
  - ➤ muriate of potash (MOP)
  - ➤ nitrogen-phosphorous-potassium (NPK)

About the "One Nation One Fertiliser" scheme:

- The scheme would be done by introducing a "**Single Brand for Fertilisers and Logo**" under the fertiliser subsidy scheme named "**Pradhanmantri Bhartiya Janurvarak Pariyojna" (PMBJP).**

- The scheme would extend to all four fertilisers – Urea, Di-Ammonium Phosphate, Muriate of Potash, and complex NPK – with BHARAT pre-fixed.

- The single brand name would be **BHARAT UREA, BHARAT DAP, BHARAT MOP, and BHARAT NPK, etc**. respectively for all Fertiliser Companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs).

- Under the scheme, **companies are allowed to display their name, brand, logo, and other relevant product** information **only on one-third space** of their bags.

- On the remaining **two-thirds of the space**, the "**Bharat" brand** and **Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo** will have to be shown.

Government's argument for introducing this scheme:

- **Uniformity:** It will bring uniformity in fertiliser brands across the country.

- **Stop crisscross movements**: It will stop the crisscross movement of fertilisers, especially urea, which leads to its diversion for industrial purposes.

- **Brand-wise demand for fertilisers** in specific areas by farmers is one of the reasons for the crisscross movement of fertilisers. Since fertiliser companies get the freight subsidy, they do not hesitate moving bags a longer distance.

Central government subsidy on fertilizers:

- The fertiliser sector is a **highly subsidised area** wherein the maximum retail price (MRP) is fixed for urea and subsidy is fixed for non-nitrogenous fertiliser phosphate and potassium (P and K).

  - ➤ Nearly 80 per cent of the cost of production of urea and P&K is being paid to fertiliser manufacturers in the form of **central government subsidy**.

  - ➤ As for freight subsidy, about Rs.3, 038 crores per annum for urea and Rs.3, 300 crore per annum for P&K would be paid out this fiscal year.

SUPREME COURT ISSUES NOTICE TO EC, GOVT ON PARTIES USING RELIGIOUS NAMES, SYMBOLS

⊙ **CONTEXT:** **The Supreme Court had issued notice to the election commission to cancel the registration of political parties that use religious symbols or names of religions in their nomenclature.**

⊙ **ABOUT** **Registration of a political party in India:**

- According to the Election Commission, any party seeking registration has to apply to the Commission within a period of 30 days.

- Following the date of its formation as per guidelines prescribed by the Commission in the exercise of the powers conferred by **Article 324** of the Constitution of India and Section 29A of the Representation of the People Act, 1951.

- The registration of all political parties is governed by the provisions of **Section 29A** of the **Representation of the People Act 1951**.

Why registering with the EC is important?

- It is not mandatory to register with the Election Commission but registering as a political party with the EC has its advantage in terms of intending to avail itself of the provisions of the Representation of the People Act, 1951.

- The candidates set up by a political party registered with the EC will get preference in the matter of allotment of free symbols vis-à-vis purely independent candidates.

Issuing Symbols:

> An **electoral symbol** is a standardized symbol allocated to an independent candidate or political party by a country's election commission for use in election ballots.

- The registered political parties can get recognition as a '**state party or a 'national party'** subject to the fulfilment of the conditions prescribed by the Commission in the **Election Symbols (Reservation and Allotment) Order 1968.**

Related Judgments

- **Abhiram Singh vs. C D Commachen:** An appeal to vote on the ground of the religion (or caste, community, race, or language) of a candidate or to refrain from voting for a candidate based on these features would amount to a corrupt practice.

CONTEMPT OF COURT

⊙ **CONTEXT:** The Madras High Court recently found activist and YouTuber A.Shankar, popularly known as 'Savukku' Shankar, guilty of criminal contempt and sentenced him to six months' imprisonment for his remarks about the higher judiciary.

⊙ **ABOUT**

What is Contempt of Court?

- Contempt of Court can be easily understood as when we are **disrespectful or disobedience towards the court of law** which means that we wilfully fail to obey the court order or disrespect the legal authorities.

- According to the Contempt of Courts Act, 1971, contempt of court can either be civil contempt or criminal contempt.

  ◉ **Civil Contempt** means wilful disobedience of any judgment, decree, direction, order, writ or other process of a court, or wilful breach of an undertaking given to a court.

  ◉ **Criminal contempt**, on the other hand, means the publication (whether by words, spoken or written, or by signs, or by visible representations, or otherwise) of any matter or the doing of any other act whatsoever which;

    ► scandalises or tends to scandalise, or lowers or tends to lower the authority of, any court; or

    ► prejudices, or interferes or tends to interfere with, the due course of any judicial proceeding; or

> ➤ Interferes or tends to interfere with, or obstructs or tends to obstruct, the administration of justice in any other manner.

- **Punishment:** Contempt of court may be punished with simple imprisonment for a term which may extend to six months, or with a fine of maximum Rs 2,000, or with both, provided that the accused may be discharged or the punishment awarded may be remitted on apology being made to the satisfaction of the court.

Essentials of Contempt of Court:

Contempt of Court also has certain essentials and these are as follows:

- Disobedience to any type of court proceedings, its orders, judgment, decree, etc should be done '**willfully'** in case of Civil Contempt.

- In Criminal Contempt **'publication'** is the most important thing and this publication can be either spoken or written, or by words, or by signs, or by visible representation.

- The court should make a '**valid order'** and this order should be in '**knowledge'** of the respondent.

- The action of contemnor should be deliberate and also it should be clearly disregard of the court's order.

These essentials should be fulfilled while making someone accused of Contempt of Court

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Provision in Indian Constitution:

Article 129; says that the Supreme Court shall be the 'Court of Record' and it has all the powers of such courts including the power to punish for contempt of itself.

- The 'Court of Record' means a Court having its acts and proceedings registered for everlasting memory or that memory which has no end and as evidence or proof.

Article 142(2);

- When any law is made by the Parliament on the provisions mentioned in clause 1 of this Article, the Supreme Court has all the power to make an order for securing any person's attendance, production of any documents or has the power to give punishment to anyone for its contempt.

- This also does not mean that the Supreme Court can do anything against the right of personal liberty if it has power to punish under Contempt of Court.

NITI AAYOG CELEBRATES ONE-YEAR ANNIVERSARY OF 'SHOONYA CAMPAIGN'

◉ **CONTEXT:**   **NITI Aayog to commemorate the one-year anniversary of Shoonya, India's zero pollution e-mobility campaign.**

About Shoonya Campaign:

- The Shoonya campaign aims to **improve air quality** in India by accelerating the deployment of **electric vehicles (EVs)** for ride hailing and deliveries.

- The Shoonya campaign brings together consumers and industry, to reduce emissions from the commercial passenger and urban freight sector by promoting EV adoption.

- The campaign is administered by NITI Aayog and RMI in partnership with leading industry players.

- The goal of the campaign is to raise awareness about EVs among consumers and recognise industry efforts through an integrated combination of corporate branding, impact assessment and consumer awareness.

Major Components: 'Three' components to the Campaign

Corporate Branding Programme	Consumer Awareness Drive	Resource Toolkit
The corporate branding programme recognises efforts made by industry partners to promote vehicle electrification.	A public-facing awareness drive is designed to highlight the health and environmental benefits of EV adoption.	The resource toolkit provides EV users with online tools to assess the costs and impact of electric vehicle adoption.

CABINET APPROVES ADDITION OF FOUR TRIBES TO ST LIST

⊙ **CONTEXT:**

The Union Cabinet approved the addition of four tribes to the list of Scheduled Tribes.

Newly added tribes:

- **Himachal Pradesh**: Hatti tribe

- **Tamil Nadu:** Narikoravan and Kurivikkaran hill tribes

- **Chhattisgarh:** Binjhia (They were listed as ST in Jharkhand and Odisha but not in Chhattisgarh)

- **Karnataka:** Kadu Kuruba community

What is the process to include tribes in ST list?

- **State Government:** The process begins with the recommendation from the respective State governments.

- **Ministry of Tribal Affairs:** The request is made to the Tribal Affairs Ministry, which reviews and sends them to the Registrar General of India for approval.

- **NCST:** This is followed by the National Commission for Scheduled Tribes' approval before the list is sent to the Cabinet for a final decision.

Important Constitutional Provisions:

- **Article 366 (25)** defined scheduled tribes as "**such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution**".

- **Article 342**, which is reproduced below, prescribes procedure to be followed in the matter of specification of scheduled tribes.

Scheduled Tribes in India

- The tribal population of the country, **as per 2011 census, is 10.43 crore, constituting 8.6% of the total population.**

- 89.97% of them live in rural areas and 10.03% in urban areas.

- The decadal population growth of the tribal's from Census 2001 to 2011 has been 23.66% against the 17.69% of the entire population.

- Broadly the **STs inhabit two distinct geographical areas** – the Central India and the North- Eastern Area.

  - More than half of the Scheduled Tribe population is concentrated in Central India, i.e., Madhya Pradesh (14.69%), Chhattisgarh (7.5%), Jharkhand (8.29%), Andhra Pradesh (5.7%), Maharashtra (10.08%), Orissa (9.2%), Gujarat (8.55%) and Rajasthan (8.86%).

  - The other distinct area is the North East (Assam, Nagaland, Mizoram, Manipur, Meghalaya, Tripura, Sikkim and Arunachal Pradesh).

- More than **two-third of the ST population is concentrated only in the seven States** of the country, viz. Madhya Pradesh, Maharashtra, Orissa, Gujarat, Rajasthan, Jharkhand and Chhattisgarh.

- There is **no ST population in 3 States** (Delhi NCR, Punjab and Haryana) and 2 UTs (Puducherry and Chandigarh), as no Scheduled Tribe is notified.

WORLD DAIRY SUMMIT 2022

⊙ **CONTEXT:** **Prime Minister officially inaugurated the International Dairy Federation World Dairy Summit (IDF WDS) 2022, being held at the India Expo Centre and Mart in Greater Noida.**

⊙ **ABOUT**
- Theme of the IDF WDS is 'Dairy for Nutrition and Livelihood'.

- Last time India hosted the International Dairy Congress in 1974.

- The dairy summit is a congregation of global and Indian dairy industry leaders, experts, farmers, and policy planners.

International Dairy Federation

- IDF is the leading source of scientific and technical expertise for all stakeholders of the dairy chain.

- Since 1903, IDF's network of dairy experts has provided a mechanism for the dairy sector to reach global consensus on how to help feed the world with safe and sustainable dairy products.

Indian Dairy Sector:
- India is self-sufficient in milk and the world's top milk producer as well as consumer.

- India accounts for 23 per cent of the global output.

- The annual domestic production of milk in the country is estimated at 220 million tonne.

- India is home to about 19 percent of in-milk cattle and 63 percent of in-milk buffaloes in the world.

- 50 well-defined breeds of cattle and 19 of buffaloes are well adapted to the local environment.

26TH MEETING OF THE FINANCIAL STABILITY AND DEVELOPMENT COUNCIL (FSDC)

◉ **CONTEXT:**   The Union Minister of Finance and Corporate Affairs chaired the 26th Meeting of the Financial Stability and Development Council (FSDC).

What is Financial Stability and Development Council?

- It is an apex regulatory body constituted by the Government of India.

- FSDC was created after the global financial crisis of 2008 when some similar institutions were created in some other countries.

- FSDC has replaced the High-Level Coordination Committee on Financial Markets, which was facilitating the regulatory coordination functions prior to setting up of FSDC, though it was not a formal body.

- It was constituted on the recommendations of the **Raghuram Rajan Committee on Financial Sector Reforms in 2008**. The FSDC is an autonomous body which deals with the financial regularities in the entire financial sector of India.

What are the functions of FSDC?

- FSDC is responsible for the financial stability and the development of financial sector in India.

- It is also responsible for Inter-regulatory coordination, financial literacy and financial inclusion within the country.

- No funds are allocated separately to the council for undertaking its activities.

Who are the members of FSDC?

- The Finance Minister of India is the chairman of Financial Stability and Development Council.

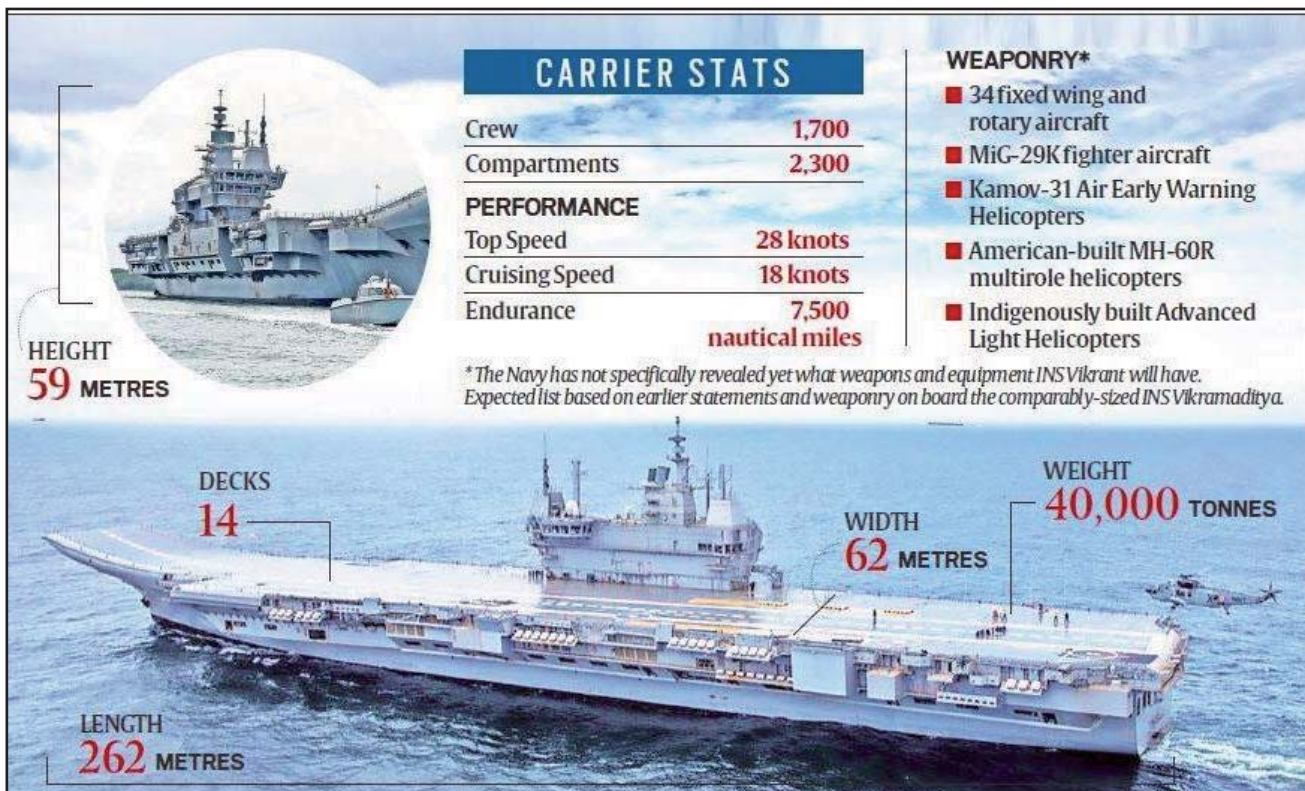| Members from Regulatory Bodies	Members from Government Departments
• RBI Governor (RBI Governor is also the head of FSDC Sub-committee). • Chairman of Securities and Exchange Board of India i.e. SEBI.	• Finance Secretary or Secretary of Department of Economic Affairs. • Secretary of Department of Financial Services.
• Chairman of Insurance Regulatory and Development Authority of India i.e. IRDAI. • Chairman of Pension Fund Regulatory and Development Authority i.e. PFRDA. • Chairman of Insolvency and Bankruptcy Board of India i.e. IBBI.	• Secretary of Ministry of Corporate Affairs. • Chief Economic Advisor, Ministry of Finance. • Secretary of Ministry of Electronics & Information Technology i.e. MeitY.

'VIKRANT': INDIA'S FIRST INDIGENOUS AIRCRAFT CARRIER

◉ **CONTEXT:**   The nation's first Indigenous Aircraft Carrier (IAC-1) is to be commissioned in September.

Indigenous Aircraft Carrier 1: Vikrant

- IAC Vikrant is the **largest warship** to have ever been **built in India**.

- It is also the first indigenously designed and built Aircraft Carrier for the Indian Navy.

- IAC Vikrant is **262 m long and 62 m wide** and displaces approx. 43000 T when fully loaded, having a maximum designed **speed of 28 Knots** with an endurance of 7500 NM.

- **Designed by the Indian Navy's in-house Directorate of Naval Design (DND)** and built by the CSL, a Public Sector Shipyard under the Ministry of Ports, Shipping and Waterways

- It is capable of carrying more than 30 assorted aircraft including combat jets and helicopters.

CARRIER STATS

Crew	1,700
Compartments	2,300

PERFORMANCE

Top Speed	28 knots
Cruising Speed	18 knots
Endurance	7,500 nautical miles

WEAPONRY*
- 34 fixed wing and rotary aircraft
- MiG-29K fighter aircraft
- Kamov-31 Air Early Warning Helicopters
- American-built MH-60R multirole helicopters
- Indigenously built Advanced Light Helicopters

*The Navy has not specifically revealed yet what weapons and equipment INS Vikrant will have. Expected list based on earlier statements and weaponry on board the comparably-sized INS Vikramaditya.

HEIGHT 59 METRES

DECKS 14

WIDTH 62 METRES

WEIGHT 40,000 TONNES

LENGTH 262 METRES

- The ship will be **capable of operating 30 aircraft** including **MiG-29K fighter jets, Kamov-31 Air Early Warning Helicopters, MH-60R Seahawk multi-role helicopters**, as well as the Advanced Light Helicopters (ALH) built by Bengaluru-based Hindustan Aeronautics Ltd, and the indigenously manufactured Light Combat Aircraft (LCA) (Navy).

- The carrier is equipped with the **latest state-of-the-art equipment and systems**.

  - It boasts a **fully-fledged state-of-the-art medical complex** with the latest medical equipment facilities including major modular OT, emergency modular OT, physiotherapy clinic, ICU, laboratories, CT scanner, X-Ray machines, dental complex, isolation ward, and telemedicine facilities.

Proposed carrier:

- Since 2015, the Navy has been seeking approval to build a third aircraft carrier for the country, which, if approved, will become India's second Indigenous Aircraft Carrier (IAC-2).

- This proposed carrier, to be named **'INS Vishal'**, is intended to be a giant 65,000-tonne vessel, much bigger than both IAC-1 and the **'INS Vikramaditya'**.

Do you Know?

- United States Navy has 11 aircraft carriers.
- China too is moving ahead aggressively with its aircraft carrier programme. It has two carriers now, a third is in the making, and another two are likely to be commissioned within a decade.

CHINA'S SOLAR-POWERED, SEMI-SATELLITE DRONE

⦿ **CONTEXT:** China's first fully solar-powered unmanned aerial vehicle has successfully completed its maiden test flight with all on-board systems functioning optimally.

About the new machine

- The drone is a large machine powered entirely by solar panels.
- It has a wingspan of 164-ft.
- The **high-altitude, long-endurance (HALE) UAV** can stay airborne for long durations.
- It is named as the Qimingxing-50, or Morning Star-5.
- This drone flies above 20-km altitude where there is stable airflow with no clouds.
- This helps these drones to make the maximum use of solar equipment to stay functional for extended durations.
- In fact, the drone's chief designer told South China Morning Post that it can operate without a break for months, even years.
- It is capable of carrying out satellite-like functions.
- If satellite services are not available for, say, time-sensitive operations or in case of wartime disruption, then near-space UAVs can step in to fill the operational gap.
- These drones are also referred to as 'High Altitude Platform Stations' or pseudo-satellites.
- China already has this capacity, but the Qimingxing-50's long-endurance provides an added advantage to make this capability available over a longer period.

Do You Know?

In July 2022, the US Army helped test a solar-powered, near-space Airbus Zephyr S drone that set a new record by being airborne for 42 days.

INDIA GETS ITS FIRST NASAL (MUCOSAL VACCINES) COVID VACCINE

⦿ **CONTEXT:** The Drugs Controller General of India (DCGI) has approved the country's first intra-nasal Covid-19 vaccine Bharat Biotech's iNCOVACC for restricted emergency use in those aged above 18 years.

- It's only the second vaccine in the world, after **CanSino Biologics' vaccine in China**, to get regulatory approval.

Bharat Biotech's iNCOVACC:

- The vaccine has been developed by **Bharat Biotech with technology in-licensed from Washington University-St Louis.**

- **iNCOVACC is a chimpanzee adenovirus vectored recombinant nasal vaccine** that has been specifically formulated to allow intra-nasal delivery through nasal drops.

- The **nasal delivery system** has been designed and developed to be **cost-effective in low- and middle-income countries.**

- **The vaccine is stable at 2-8°C.**

Mode of working of the nasal vaccine:

- The vaccine is given nasally; it triggers an immune response in the mucosal membrane.

- **Intra-nasal Covid-19 vaccines may produce local antibodies in the upper respiratory tract which may provide the potential to reduce infection and transmission.**

- Therefore**, it can stop the virus from replicating at its entry and spreading to the lungs and other parts of the body**.

- **The intra-nasal vaccine stimulates a broad immune response** – neutralizing IgG, mucosal IgA, and T cell responses.

- **Immune responses at the site of infection (in the nasal mucosa) are essential for blocking both infection and transmission of Covid-19.**

Significance of Mucosal Vaccines:

- **Spillover antibodies:** It has the potential to **induce local (mucosal) immunity** at the point of entry of the virus. It could ensure the presence **of spill over antibodies on the nasal mucosa**. The nasal area is the spot through which the Sars-CoV-2 virus enters the body.

- **No need for Needles**: With the vaccine being delivered through a nasal spray, it will do away with the need for needles and syringes currently required for all the Covid-19 vaccines available.

- **No need for trained staff:** It will also reduce dependence on personnel trained to give shots.

RANSOMWARE EXERCISE

⊙ **CONTEXT:** **India's National Security Council Secretariat (NSCS) and the UK Government in collaboration with BAE Systems successfully designed and conducted the Cyber Security Exercise for 26 Countries.**

⊙ **ABOUT**
- The exercise has been conducted as part of the International Counter Ransomware Initiative- Resilience Working Group which is being led by India under the leadership of **National Cyber Security Coordinator (NCSC).**
- The exercise has been facilitated by **BAE** Systems (a British multinational arms, security, and aerospace company) through the Immersive Labs platform.
- The scenario has been written specifically for the participants based on Threat Intelligence and operational experiences.
- The theme of the exercise is based on Energy Sector in which the respective National Cyber Crisis Management Teams of the CRI Partner Nations will have to deal with a ransomware attack on multiple electricity distribution companies.
- The aim to organise this virtual Cyber Exercise on Ransomware Resilience is to simulate a large, wide-spread cyber security incident affecting organisations within a country.

> **Important terms:**
> - **Ransomware attack:** A ransomware attack is a cyber-attack using malware that encrypts the victim's files and requires users pay a ransom to decrypt the files.
> - **Virus:** Viruses attach themselves to clean files and infect other clean files. They can spread uncontrollably, damaging a system's core functionality and deleting or corrupting files.
> - **Trojans:** This kind of malware disguises itself as legitimate software, or is included in legitimate software that has been tampered with. It tends to act discretely and create backdoors in your security to let other malware in.
> - **Spyware:** It hides in the background and takes notes on what you do online, including your passwords, credit card numbers, surfing habits and more.
> - **Worms:** Worms infect entire networks of devices, either local or across the internet, by using network interfaces. It uses each consecutive infected machine to infect more.
> - **Botnets:** Botnets are networks of infected computers that are made to work together under the control of an attacker.

# NASA'S DART MISSION

⊙ **CONTEXT:**
Recently, NASA's DART will intentionally crash into Dimorphos, the asteroid moonlet of Didymos.

- While the asteroid poses no threat to Earth, this is the **world's first test** of the kinetic impact technique, using a spacecraft to deflect **an asteroid** for planetary defense.

Double Asteroid Redirection Test (DART)

- DART is the first-ever mission dedicated to investigating and demonstrating one method of asteroid deflection by changing an asteroid's motion in space through kinetic impact.
- This method will have DART deliberately collide with a target asteroid which poses no threat to Earth, in order to change its speed and path.
- DART's target is the binary, near-Earth asteroid system **Didymos**, composed of the roughly 780-meter (2,560-foot) -diameter "Didymos" and the smaller, approximately 160-meter (530-foot)-size "**Dimorphos,**" which orbits Didymos.
- DART will impact Dimorphos to change its orbit within the binary system.
- DART is also carrying a cubesat that will film the larger spacecraft's impact and beam the footage back to researchers on Earth.

- At the time of DART's impact, Didymos will be visible enough to be a good candidate for study and distant enough to be no danger, at approximately 6.8 million miles (11 kilometers) away from Earth.
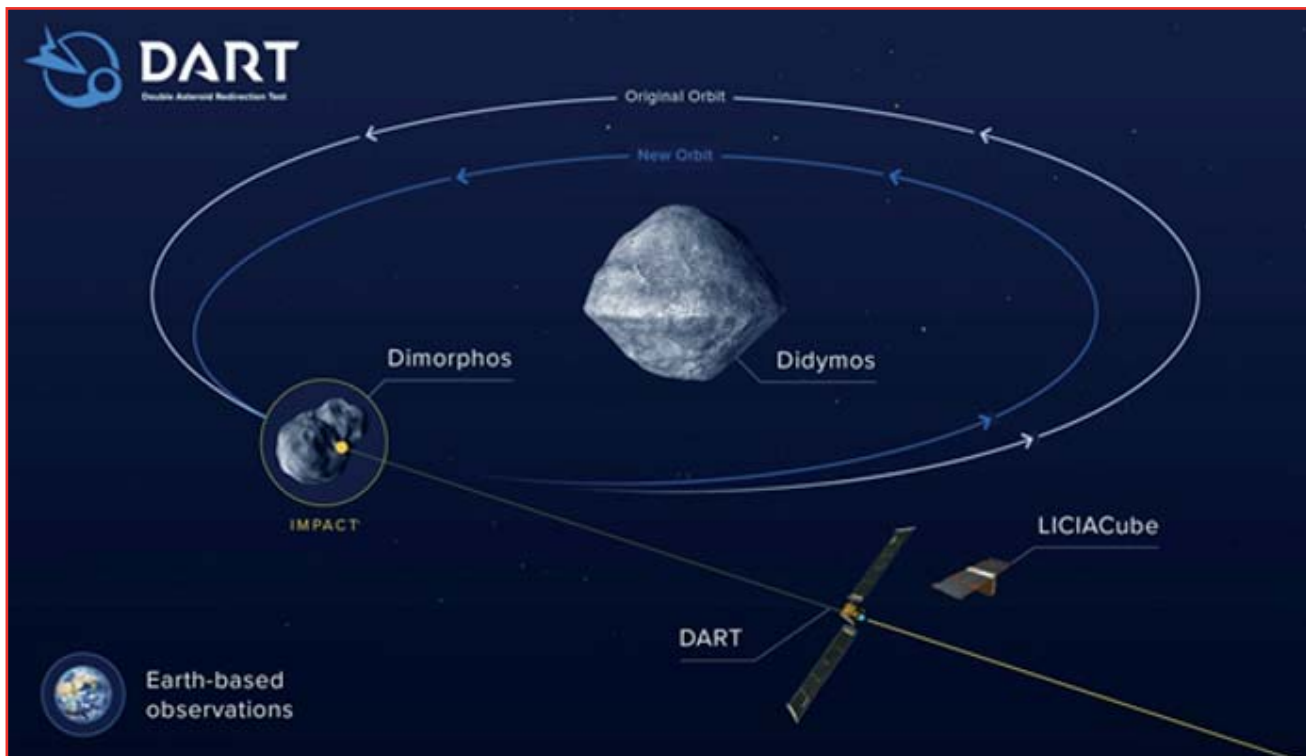
Key Objectives:

- Demonstrate a kinetic impact with Dimorphos.
- Change the binary orbital period of Dimorphos.
- Use ground-based telescope observations to measure Dimorphos' period change before and after impact.
- Measure the effects of the impact and resulting ejecta on Dimorphos.

What is an Asteroid?

- Asteroids are small, airless rocky worlds revolving around the sun that are too small to be called planets.
- They are also known as planetoids or minor planets.
- In total, the mass of all the asteroids is less than that of Earth's moon. But despite their size, asteroids can be dangerous.
- Many have hit Earth in the past, and more will crash into our planet in the future.

ATOMIC CLOCKS

⊙ **CONTEXT:** **Given the technological advances of the present, we need clocks that will keep time to a very high accuracy. The answer to this requirement is the 'atomic clock'.**

Atomic Clock:

- An atomic clock is a clock that uses the resonance frequencies of atoms as its resonator.

  - A clock is simply an apparatus that counts a repetitive event, e.g. in a mechanical clock, a pendulum might swing once every second and by counting the number of swings, one knows how many seconds have passed.

- Atomic clocks use atoms, more precisely the electronic transition from one state to another as their 'pendulum'.

- They take advantage of the fact that all atoms of a particular element (e.g. Caesium and Rubidium) have the same electron configuration.

- In 1945, Columbia University physics professor Isidor Rabi suggested that a clock could be made from a technique he developed in the 1930s called atomic beam magnetic resonance.

- By 1949, the National Bureau of Standards (now the National Institute of Standards and Technology) announced the world's first atomic clock using the ammonia molecule as the source of vibrations.

- By 1952 it announced the first atomic clock using cesium atoms as the vibration source, NBS-1.

- With an error of only 1 second in up to 100 million years, atomic clocks are among the most accurate timekeeping devices in history.

Types of Atomic Clocks:

The various types of atomic clocks include:

- **Cesium atomic clocks** employ a beam of cesium atoms. The clock separates cesium atoms of different energy levels by magnetic field.

- **Hydrogen atomic clocks** maintain hydrogen atoms at the required energy level in a container with walls of a special material so that the atoms don't lose their higher energy state too quickly.

- **Rubidium atomic clocks**, the simplest and most compact of all, use a glass cell of rubidium gas that changes its absorption of light at the optical rubidium frequency when the surrounding microwave frequency is just right.

Why Do We Need Atomic Clocks?

- Some 400 atomic clocks around the world contribute to the calculation of International Atomic Time (TAI), one of the time standards used to determine Coordinated Universal Time (UTC) and local times around the world.

- Satellite navigation systems like GPS, GLONASS, and Galileo also rely on precise time measurements to calculate positions accurately.

> **Important terms**
> - **Cesium 133** - An isotope of cesium used especially in atomic clocks and one of whose atomic transitions is used as a scientific time standard
> - **SI Second (atomic second)** - The interval of time taken to complete 9,192,631,770 oscillations of the cesium 133 atom exposed to a suitable excitation

INVASIVE SOUTH RED-EARED SLIDER TURTLE POSES THREAT TO INDIAN BIODIVERSITY

⊙ **CONTEXT:**

Recently, it has been observed that the presence of invasive and non-native south red-eared slider turtles would lead to the extinction of native species of their own kind in Indian waters.

⊙ **ABOUT:`**

- The red-eared slider are native to south-eastern USA and Mexico, but have found their way across the globe.

- These species are brought **for sale and trading** purposes to different countries **including India.**

> **Is it legal?**
>
> - In India, keeping indigenous turtles as pets is prohibited under the **wildlife protection act**. But the foreign breeds are **not restricted** and are kept as pets in many families across the country.

Features:

- **Scientific name:** Trachemys scripta elegans

- It is considered to a good pet, as it needs less maintenance.

- As they grow bigger, people sometimes release them into water bodies.

> India is home to **29 freshwater turtles** and tortoise species of the **356 turtle species** recognized worldwide and around 80 per cent of them are threatened, according to a 2020 report.

Existence in India

- This species is already spread across many Indian states and poses a threat to indigenous species of its kind, including soft-shell and hard-shell

- It is widely found in urban wetlands, such as — Sukhna lake in Chandigarh, temple ponds of Guwahati, lakes of Bengaluru, Sanjay Gandhi national park in Mumbai, Yamuna river in Delhi — among other water bodies.

> **Invasive species,** also called introduced species, alien species, or exotic species, any non-native species are those that significantly modifies or disrupts the ecosystems it colonizes.

How it acts as an Invasive species?

- The species is considered as one of the world's 100 worst invasive non-native species.

- It has been brought to India during the British era.

- Initially introduced in Kolkata, the plant is now present across the water bodies in the country, choking them and affecting the local biodiversity.

- These species tend to survive on weeds and food of indigenous turtle population, and destroys the natural ecosystem for them.

GLOBAL REGISTRY OF FOSSIL FUELS

⊙ **CONTEXT:** A first-of-its-kind database for tracking the world's fossil fuel production, reserves and emissions launched recently to coincide with climate talks taking place at the United Nations General Assembly in New York.

⊙ **ABOUT** **About Global Registry of Fossil Fuels:**

> **The registry is developed by**
> - **Carbon Tracker**, a non-profit think tank that researches the energy transition's effect on financial markets, and
> - **Global Energy Monitor**, an organization that tracks a variety of energy projects around the globe.

- The Global Registry of Fossil Fuels is an **open, transparent repository of data on fossil fuel production** worldwide, expressed in terms of its embedded carbon dioxide emissions.

Important features of the Registry:

- Aggregates data into a comprehensive **open-source database**, drawing from government and private-sector sources
- Includes both country-level and project level data
- **Integrates reserves, production, and emissions** data with third-party scenarios to provide essential data for policymakers and others to make 1.5°C aligned production decisions;
- Includes **life-cycle emissions from fossil fuel** projects for both carbon dioxide and methane
- Contains **data for over 50,000 fields in 89 countries** representing projects covering **75% of global production.**
- Ranks countries based on **absolute emissions and emissions intensities**
- Establishes an evolving database to serve as a **trusted, policy-neutral tool** to **manage carbon budgets.**

The earlier system

- Until now there has been **private data available for purchase, and analysis** of the world's fossil fuel usage and reserves.
- The **International Energy Agency** also maintains public data on oil, gas and coal, but it **focuses on the demand for those fossil fuels**, whereas this **new database looks at what is yet to be burned.**

> **Carbon budget:**
> - Carbon budget refers to the **remaining carbon the world can afford to emit before the 1.5°C temperature goal of the Paris Agreement is missed.**
> - According to the estimates of the United Nations, the Earth's remaining carbon budget is around 360 billion tonnes of CO_2 equivalent or nine years at the current emission levels.

Freshwater crab species found in Western Ghats	- The crab has been named **Ghatiana dvivarna sp nov**. - The freshwater species was **first spotted in Uttara Kannada district in Karnataka.** - The crab's name is derived from the **Sanskrit word 'dvivarna'**, which means **bicolour,** as the crustacean **has a white body and claws and "red-violet" legs.** - The species was first sighted in June, 2021 in **Anshi wildlife range, Kali Tiger Reserve in Karnataka.** - These crabs usually **inhabit the holes in laterite rocks** on the elevated mountains of central Western Ghats (south of Goa-Nilgiris) region. - They **feed on mosses** growing on laterite rocks and play a key role in **ensuring ecological balance.** - In India, there are about **125 species of crabs** and 13 have been recorded so far under Ghatiana genus. **Ghatiana dvivarna is the 14th freshwater crab** to have been discovered.
India's most endangered canid-The Dhole	**Geographic Range:** From the Altai Mountains in Manchuria in Central and Eastern Asia, its range spreads southwards through the forest tracts of India, Burma, and the Malayan Archipelago. Three races of the dhole exist in India alone. **Habitat:** Dholes like open spaces and can often be found on jungle roads, river beds, jungle clearings, and paths, where they rest during the day. - The dhole is a **highly social animal**, living in large clans without rigid dominance hierarchies and containing multiple breeding females. Such clans usually consist of 12 individuals, but groups of over 40 are known. **Conservation:** - The dhole is protected under **Schedule 2 of the Wildlife Protection Act, 1972**. - The creation of reserves under Project Tiger provided some protection for dhole populations sympatric with tigers. - In 2014, the Indian government sanctioned its **first dhole conservation breeding centre** at the Indira Gandhi Zoological Park (IGZP) in Visakhapatnam. - It is listed as **Endangered by the IUCN**, as populations are decreasing and estimated at less than 2, 500 adults. **Factors contributing to this decline** include habitat loss, loss of prey, and competition with other species, persecution, and disease transfer from domestic dogs.
Invasive south red-eared slider turtle poses threat to Indian biodiversity	- The red-eared slider are native to south-eastern USA and Mexico, but have found their way across the globe. - These species are brought **for sale and trading** purposes to different countries **including India.** **Features:** **Scientific name:** Trachemys scripta elegans

	• It is considered to a good pet, as it needs less maintenance. • As they grow bigger, people sometimes release them into waterbodies. • This species is already spread across many Indian states and poses a threat to indigenous species of its kind, including soft-shell and hard-shell • It is widely found in urban wetlands, such as — Sukhna lake in Chandigarh, temple ponds of Guwahati, lakes of Bengaluru, Sanjay Gandhi national park in Mumbai, Yamuna river in Delhi — among other water bodies.
Significant rise in trafficking of Sea cucumbers	• Sea cucumbers are an important constituent of the marine ecosystem as they play an important role in maintaining the health of the ecosystem. • In India, sea cucumber is treated as an endangered species listed under schedule 1 of Wildlife Protection Act of 1972. • It is consumed as food and used in medicine. • Illegal harvesting and overexploitation of these animals leads to poorer sediment health, reduces nutrient recycling and impacts biodiversity.
Fungal outbreak threatens tricoloured bat with extinction	• The tricolored bat, formerly known as the **eastern pipistrelle**, is **one of the smallest bats** in North America. • Tricolored bats are a hibernating species and have the **longest hibernation period** of any bat species in their range. • When not hunkering down for the winter, they may be found in a wide variety of habitats to roost and forage. • When feeding, these bats can catch insects in the air as often as every 2 seconds and increase their body mass by 25 percent in only half an hour.

LAKES IN ALASKA RELEASING METHANE CONTRIBUTING TO GLOBAL WARMING

◉ **CONTEXT:** Recently, as per the study by NASA, new lakes are emerging in Alaska due to thawing permafrost and releasing methane, a greenhouse gas into the atmosphere.

◉ **BACKGROUND:**
• The Big Trail Lake in Alaska is one such '**thermokarst lake'** that has come into existence over the last **50 years** or so and is continuously releasing bubbles filled with methane gas.
• Permafrost is ground that stays frozen all year around. In Alaska, the permafrost also contains massive wedges of ice locked within the ground.
• When the ice melts, the ground surface collapses and forms a sinkhole that is filled with water, creating a **thermokarst lake.**

- These lakes further continue with the **methane cycle** and releases carbon stocks in the atmosphere.

Methane Composition:

> **Features:**
> - Methane is an **odourless, colourless, tasteless gas** that is **lighter than air**.
> - When methane burns in the air it has a blue flame.
> - In sufficient amounts of **oxygen, methane** burns to give off **carbon dioxide (CO2)** and water (H2O).
> - When it undergoes **combustion** it produces a great amount of heat, which makes it very useful as a fuel source.

- **Methane** is a chemical compound with the molecular formula CH4. It is the main component in natural gas.
- Methane is considered the simplest of alkanes, compounds that consist only of hydrogen (H) and carbon (C) element.

Lakes as a source of Methane

- **Natural sources** of methane include wetlands, gas hydrates, termites, oceans, **freshwater bodies** and other sources such as **wildfires.**
- Lakes consist of microbes and bacteria which tend to decompose the organic matter present in inside the water body.

How the lakes are responsible for emitting Methane?

- **Frozen lakes in Alaska**, normally contains microbes which due to thawing effect.
- After a few years, this methane releases when ice got melted. The phenomenon takes place in young water bodies.
- As young water bodies contains more matter to decompose in comparison to older lakes.
- The methane bubbles emerging from these newly formed lakes are caused by **microbial activity.**
- The microbes digest the **dead plants and organic matter** in the previously frozen ground, which produces carbon dioxide and methane.

Why Methane emission is a cause of concern?

- Methane is the **primary contributor** to the formation of **ground-level ozone**, a hazardous air pollutant.
- A powerful **greenhouse gas**, it is 80 times more potent at warming than carbon dioxide.
- Methane is responsible for **30% of the rise in global temperatures** since the industrial revolution.
- Arctic consists of large number of such lakes which emits methane into the atmosphere.

CAN ALGAE BIOFUELS BECOME VIABLE?

⊙ **CONTEXT:** **To harness the potential of Algae in biofuel production and to reduce dependence on conventional fossil fuels like petrol and diesel, several industrial and government initiatives have been launched since last decade.**

What is Biofuel?

- Biofuel is a fuel that is produced over a **short time span** from biomass, rather than by the very slow natural processes involved in the formation of **fossil fuels,** such as oil.

- Biofuel can be produced from plants or from **agricultural, domestic or industrial** bio waste.
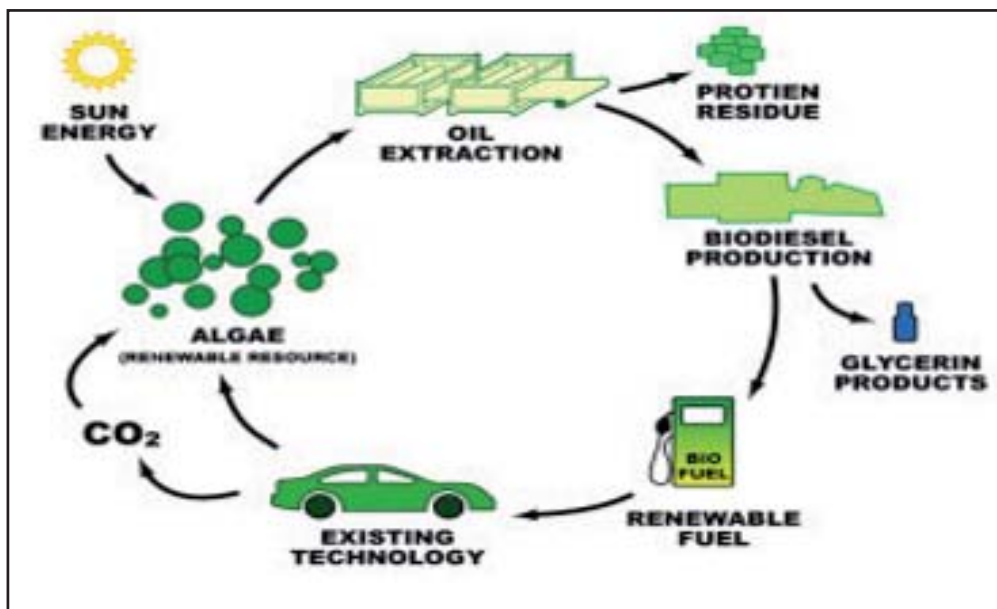
How it can be produced from Algae?

- Algae can be produced in ponds or tanks on land, and out at sea.

- Algal fuels have **high yields**, can be grown with minimal impact on fresh water resources, can be produced using saline water and wastewater, have a high ignition point, and are biodegradable and relatively harmless to the environment if spilled.

- Production requires large **amounts of energy and fertilizer**, the produced fuel degrades faster than other biofuels, and it does not flow well in cold temperatures.

Types of Biofuels:

- **Bioethanol** is an alcohol made by fermentation, mostly from carbohydrates produced in sugar or starch crops such as **corn, sugarcane, or sweet sorghum.**

- Cellulosic biomass, derived from non-food sources, such as trees and grasses, is also being developed as a feedstock for ethanol production.

- **Biodiesel** is produced from oils or fats using *trans-esterification*.

- It can be used as a fuel for vehicles in its pure form (B100), but it is usually used as a diesel additive to reduce levels of particulates, carbon monoxide, and hydrocarbons from diesel-powered vehicles.

India's position in Algae based biofuel production

- India's **Reliance Industries Ltd** recently highlighting the cutting-edge algae-to-fuel technology it has developed. The company has been successfully running large algae raceway ponds the last five years to convert sunshine, CO2 and seawater into bio-oil.

- Under the **INSPIRE programme** of ministry of science and technology has initiated growing low cost biodiesel from microalgae.

Global situation

- In 2019, worldwide biofuel production provided **3% of the world's fuels** for road transport, and a very small amount of aviation biofuel.

- The **International Energy Agency** wants biofuels to meet more than a quarter of the world demand for transportation fuels by 2050, in order to reduce dependency on petroleum.

- However, the production and consumption of biofuels are not on track to meet the IEA's sustainable development scenario.

- From **2020 to 2030 global** biofuel output has to increase by 10% each year to reach IEA's goal

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SECTION: D
(QUIK BYTE)

CURRENT AFFAIRS

SWACHH TOYCATHON

⊙ **CONTEXT:**   **The ministry of housing and urban affairs (MoHUA) has launched the Swachh Toycathon under the Swachh Amrit Mahotsav recently.**

About Swachh Toycathon:

- The competition is a convergence between the **National Action Plan for Toys (NAPT)** and **Swachh Bharat Mission phase two (SBM 2.0).**

- It seeks to explore solutions for the **use of waste in manufacturing toys**.

> The **National Action Plan for Toys** (NAPT) 2020 was introduced to promote the Indian toy industry including traditional handicrafts and handmade toys with the objective of establishing India as a global Toy hub.

- The competition will be **open to individuals and groups** to bring forth innovation in toy designs using dry waste.

- It will focus on efficient designs that can be replicated on a larger scale, toys that comply with minimum safety standards, as well as aesthetics of the toys.

- Centre for Creative Learning, IIT Gandhinagar is the **knowledge partner** for the initiative.

- The competition will be **hosted on MyGov's Innovate India portal.**

SURJAPURI AND BAJJIKA DIALECTS

⊙ **CONTEXT:**   **Bihar Chief Minister and Education Minister have asked the state education department to set up academies for the promotion of the Surjapuri and Bajjika dialects on the lines of the Hindi and Urdu academies.**

⊙ **ABOUT**

- It has been instructed that these two academies be set up on the lines of eight already existing centres, constituted for the promotion of other dialects.

- It is also directed that efforts must be made to strengthen all academies and bring them under an umbrella body for their effective functioning.

- The department is currently working to will bring all such academies under one body.

> **The eight already existing language academies are;**
>
> - Bihar Hindi Granth Academy
> - Maithili academy
> - Magahi Academy
> - Bangla Academy
> - Sanskrit Academy
> - Bhojpuri Academy
> - Angika Academy
> - South Indian languages organization

Surjapuri dialects:

- Surjapuri is spoken **mainly in Kishanganj** and other parts of Seemanchal in north-eastern Bihar, including the districts of **Katihar, Purnia and Araria.**

- The dialect, a **mix of Bangla, Urdu, and Hindi**, is also spoken in contiguous parts of West Bengal.

- The name Surjapuri comes from Surjapur pargana, which no longer exists. But there is a toll plaza called '**Surjapur'** between **Purnia and Kishanganj.**

- Although Surjapuri has nothing specifically to do with religion, the largest share of speakers of **the language is made up of Surjapuri Muslims**, who live mainly in Kishanganj, the district that has about 70 per cent Muslim population.

- According to 2011 Census, the total number of Surjapuri-speaking population in Bihar stood at 18, 57,930.

Bajjika dialects:

- **Bajjika**, one of five dialects spoken in Bihar, is a **mix of Hindi and Maithili**, and is spoken mainly in Vaishali, Muzaffarpur, and parts of Sitamarhi, Sheohar and Samastipur.

- Bajjika is not as well-known as other dialects such as **Bhojpuri and Maithili**.

- Although the Bihar education department had considered teaching in **local dialects** up to **Class 5** during the 2010-15 which did not come to fruition.

- An estimate based on 2001 census data suggests that 20 million Bajjika speakers resided in Bihar at that time.

SHUMANG LEELA, THE TRADITIONAL FORM OF THEATRE

⊙ **CONTEXT:**   The 50th **All Manipur Shumang Leela Festival 2021-2022 kicked off at Iboyaima Shumang Leela Shanglen at Palace Compound in Imphal.**

Shumang Leela:

> Shumang' means **'open courtyard'** and 'Leela' means to **play.** The literal meaning of Shumang Leela is "**play of the open courtyard**".

- Shumang Leela is a **traditional form of theatre** in Manipur.

- The roles of female artists are all played by male actors and male characters are played by female artists in the case of female theatre groups.

- Shumang Leela **started as a comic genre** presented before the kings and noblemen, which ultimately developed into the present form of courtyard-enacted play.

- Shumang Leela groups of those days attempted to preserve and promote humanism, tolerance, confidence, devotion, truth, and justice through their performances.

- Shumang Leela has, today, **developed both theatrically and artistically**.

- Shumang Leela has become a **powerful medium for mass education** besides giving entertainment and relaxation.

- It has also been trying to strengthen the **bond of brotherhood** and friendship among various communities in the State.

- It has been trying to focus on the issues of **moral values, unity, and integrity**.

Some other traditional Theatre (Drama) in India

Bhand Pather (Kashmir)

- The unique combination of dance, music, and acting.
- Satire, wit, and parody are preferred for inducing laughter.
- Music is provided with surnai, nagaara, and dhol.

Swang (Haryana)

- Mainly music-based – Gradually, prose too, played its role in the dialogues.
- Two important styles are from Rohtak (Haryanvi language) and Haathras (Brajbhasha language)
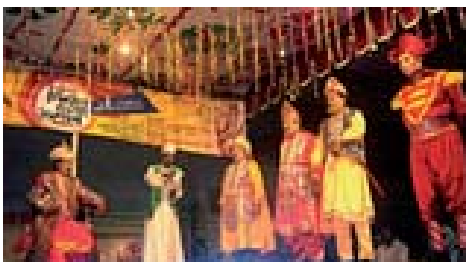

Nautanki

Nautanki (Uttar Pradesh)

- Most popular centers – Kanpur, Lucknow, and Haathras
- Verses form: Doha, Chaubola, Chhappai, Behar-e-tabeel

Rasleela

- Based exclusively on the pranks of Lord Krishna
- It is believed that Nand Das wrote the initial plays based on the life of Krishna.
- Dialogues in prose combined beautifully with songs and scenes from Krishna's pranks

Bhavai (Gujrat)

- Rare synthesis of devotional and romantic sentiments
- **Instruments:** Bhungal, tabla, flute, pakhaawaj, rabaab, sarangi, manjeera, etc.
- **Main centers:** Kutch and Kathiawar

Jatra (West Bengal)

- Fairs & ceremonies in honour of gods, or religion along with musical plays

Maach (Madhya Pradesh)

- Songs are given prominence in between the dialogues.
- The term for dialogue in this form is bol and rhyme in narration is termed vanag
- The tunes of this theatre form are known as rangat

Tamasha (Maharashtra)

- Evolved from the folk forms such as Gondhal, Jagran, and Kirtan
- **Female actress (known as Murki):** Chief exponent of dance movements in the play.
- **Prominent Features:** Classical music, footwork at lightning speed, and vivid gestures

Dashavatar (Konkan-Goa)

- Personifies the ten incarnations of Lord Vishnu – the god of preservation and creativity.
- **Ten incarnations:** Matsya (fish), Kurma (tortoise), Varaha (boar), Narasimha (lion-man), Vaman (dwarf), Parashuram, Rama, Krishna (or Balram), Buddha and Kalki.
- Apart from stylized make-up, the Dashavatar performers wear masks of wood and papier mache

Krishanattam (Kerala)

- Came into existence in the mid-17th century under the patronage of King Manavada of Calicut.
- Krishnattam is a cycle of eight plays performed for eight consecutive days
- **Eight plays:** Avataram, Kaliamandana, Rasa krida, kamasavadha, Swayamvaram, Bana Yudham, Vivida Vadham, and Swargarohana.

Yakshagana (Karnataka)

- Based on mythological stories and Puranas – performed at twilight hours
- Most episodes are taken from Mahabharata and Ramayana

Therukoottu (Tamil Nadu)

- Literally means "**street play**"- mostly performed by males dancers
- Mostly performed at the time of annual temple festivals of Mariamman (Rain goddess) to achieve a rich harvest.
- The theme is a **cycle of eight plays** based on the life of Draupadi.

	Karyala (Himachal Pradesh) • Deals with serious questions of life & death with simplistic expression; enveloped in humour. • The audience is given the essence of our cultural heritage of viewing the world as a stage and as an unsubstantial pageant that is to be negotiated and lived by rising above it. • There is often stylistic diversity, which strengthens their identity from Swang, Nautanki, Bhagat, etc.
	Bhaona (Ankia Naat) – Assam • Creation of Great Assamese saint and social reformer Srimanta Sankardeva • Written in a language called Brajavali (a mixture of Assamese-Maithili) • Primarily centered on the acts of Lord Krishna.

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SECTION: D
(MISCELLANEOUS)

CURRENT AFFAIRS

AYURVEDA DAY

⊙ **CONTEXT:** **All India Institute of Ayurveda (AIIA), under the Ministry of Ayush, recently launched the Ayurveda Day 2022 programme.**

About Ayurveda Day:

- The Ayurveda Day is being observed every year from 2016, on the day of Dhanwantri Jayanti.

- For the year 2022, it will be celebrated on 23rd October 2022.

- **Objective:** The main objectives of the day are:

  ⊙ To focus on strengths of Ayurveda and its unique treatment principles,

  ⊙ To work towards reducing the burden of disease and related mortality by utilising the potential of Ayurveda

  ⊙ To tap into the potential of Ayurveda to contribute towards National Health Policy and National Health programmes

  ⊙ To promote Ayurvedic principles of healing in society.

- Thus, Ayurveda Day is more an occasion of re-dedication to the profession and the society, than one of festivities or celebrations.

- AIIA has been chosen as the nodal agency for driving the Ministry's mandate for Ayurveda Day in 2022.

- **Theme 2022:** Har Din Har Ghar Ayurveda.

About Ayurveda:

- The word Ayurveda derived from **AYU and VEDA.**

- AYU means 'life' VEDA means 'science or knowledge'. Ayurveda means the science of life.

- Charaka defines "That science is designated as Ayurveda which deals with advantage and disadvantage as well as happy and unhappy states of life along with what is good and bad for life, its measurement and the life itself".

- **Branches of Ayurveda**

  ➤ Kaya Chikitsa- Medicine.

  ➤ Shalya Tantra- Surgery.

  ➤ Shalakya Tantra- ENT and Opthalamology.

  ➤ Kaumarbhritya- Paediatrics and Obstretics.

  ➤ Agad Tantra- Toxicology.

  ➤ Bhut Vidya- Psychiatry.

  ➤ Rasayan- Rejuvenation therapy and geriatrics.

  ➤ Vajikaran- Sexology (Including Aphrodisiac for better progeny)

All India Institute of Ayurveda (AIIA):

- The AIIA serves as a central government establishment and as an apex institute for Ayurveda.

- It serves as a state of the art facility for Ayurveda treatment.

WORLD OZONE DAY

⊙ **CONTEXT:**   September 16 **of each year is observed as World Ozone Day, also known as the International Day for the Preservation of the Ozone Layer.**

World Ozone Day

- World Ozone Day is celebrated to draw attention to one of the biggest threats that humanity faces, the depletion of the ozone layer, and the dangers of ozone depletion.

- This **2022 marks the 35th year of implementation of the Montreal Protocol**, UN is observing the Ozone Day with the theme "**Montreal Protocol@35**" and the worldwide collaboration safeguarding life on earth is the topic for this year's World Ozone Day.

Ozone layer

- Ozone layer is a fragile shield of gas which protects the Earth by absorbing harmful ultraviolet (UV) radiation of Sun and thus helps preserve life on the planet.

- Stratospheric ozone is not harmful, but its presence in troposphere is harmful.

- Substances like Chlorofluorocarbons, Halons, Carbon-tetrachloride are considered as Ozone Depleting Substances (ODSs)

- **Dobson unit** is a unit which is used to measure the ozone in the atmosphere at a standard temperature and pressure.
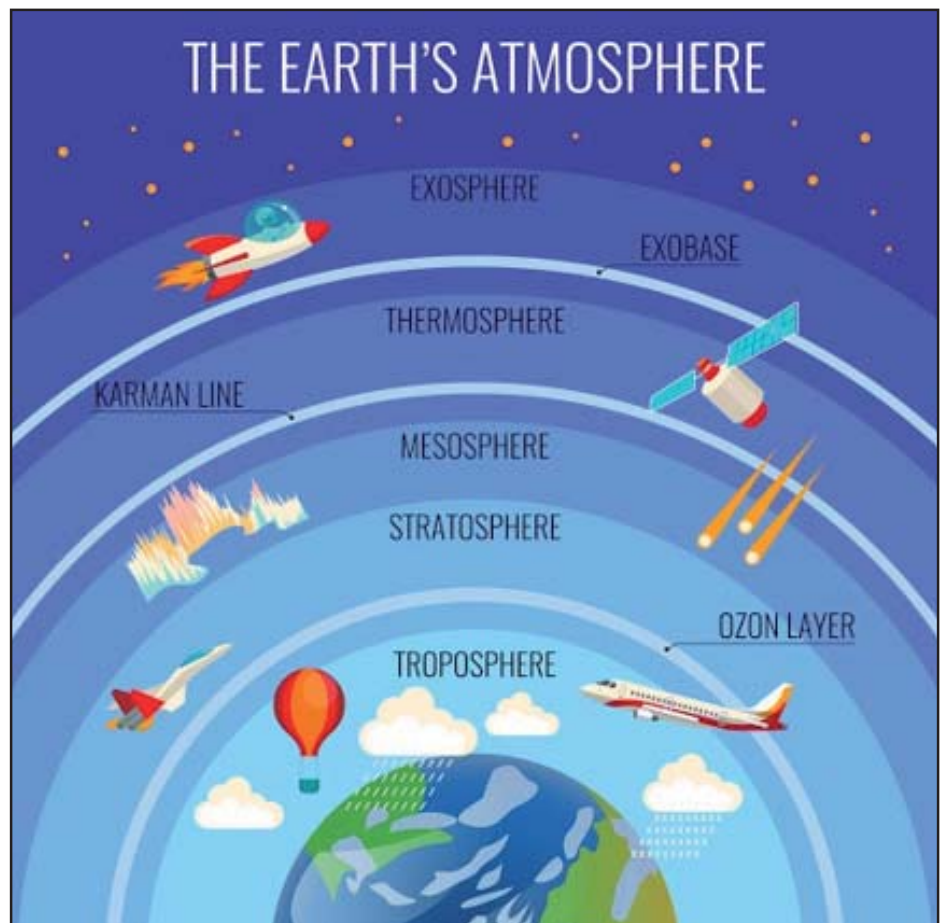
THE INTERNATIONAL DAY OF PEACE

◉ **CONTEXT:**   **The International Day of Peace is observed globally on September 21.**

◉ **ABOUT**

- The International Day of Peace was **established in 1981** by the United Nations General Assembly.

- Two decades later, in 2001, the General Assembly unanimously voted to designate the Day as a **period of non-violence and cease-fire**.

- The UN General Assembly has declared this as a day devoted to strengthening the ideals of peace, through observing 24 hours of non-violence and cease-fire.

- The United Nations invites all nations and people to honour a cessation of hostilities during the Day, and to otherwise **commemorate the Day through education and public awareness on issues related to peace.**

- **2022 Peace Day Theme**: End Racism. Build Peace.

> **Symbol of international peace day**
>
> - The Peace Bell was donated by the United Nations Association of Japan in 1954. It has become tradition to ring the bell twice a year: on the first day of spring, at the Vernal Equinox, and on 21 September to celebrate the International Day for Peace.

INTERNATIONAL DAY OF CLEAN AIR FOR BLUE SKIES

◉ **CONTEXT:**   **Union Ministry of Environment, Forest and Climate Change organized 3rd International Day of Clean Air for blue skies as 'Swachh Vayu Diwas ("Swachh Vayu Neel Gagan")' to raise awareness and facilitate actions to improve air quality under National Clean Air Programme (NCAP).**

International Day of Clean Air for blue skies:

- In 2019, UN General Assembly decided to **designate 7 September** as the International Day of Clean Air for blue skies, to be observed starting in 2020.

- The resolution also **prompted the United Nations Environment Programme (UNEP) to promote the day's observance in collaboration with other appropriate stakeholders.**

- The **2022 theme of "The Air We Share"** focuses on the trans-boundary nature of air pollution, stressing the need for collective accountability and action.

- It also highlights the need for **immediate and strategic international and regional cooperation** for more efficient implementation of mitigation policies and actions to tackle air pollution.

India:

- National Clean Air Programme aims at improving air quality by reducing Particulate Matter concentrations by 20-30% in 131 cities in the country.

- It includes 123 **Non-Attainment Cities (NAC)** which exceed the National Ambient Air Quality Standards (NAAQS) for **5 consecutive years** and 42 Million Plus Population Cities/Urban Agglomerations. 34 cities are common in both categories.

- During the event on **Swachh Vayu Diwas, MoEFCC** has released the following:

  - Guidelines on **Capacity Building and Outreach programmes** to be conducted at National, State and City level help in mobilising stakeholders at all levels to promote actions to improve air quality.

  - Guidelines for release and **utilization of funds under NCAP**;

  - XV **Finance Commission Operational guidelines for implementation of recommendations for air quality component**

  - Best Practices and success stories of **8 cities under NCAP**:

    - Srinagar (All Hands on Board),

    - Varanasi (Nothing goes to waste),

    - Bengaluru (Clean Road, Clean City),

    - Pune (The Right Drive),

    - Hyderabad (The Green Way),

    - Akola (Water Woes),

    - Thootukudi (Treasure from Trash) and

    - Lucknow (Under Control)

NEW CHIEF OF DEFENCE STAFF (CDS)

⦿ **CONTEXT:** **The Government of India has recently appointed Lieutenant General Anil Chauhan (Retired) as the next Chief of Defence Staff (CDS).**

Who is Lieutenant General Anil Chauhan?

- Lt. Gen Chauhan is known as the '**China expert'** who has had multiple tenures in the Eastern Command and retired as the Eastern Army Commander on 31 May, 2021.

- Before assuming charge of the Eastern Command, the officer, who has a career spanning over nearly 40 years, was the **Director General of Military Operations (DGMO)** during the **Balakot air strike in 2019.**

- He was commissioned into the **11 Gorkha Rifles** of the Indian Army in 1981.

- Lt Gen Chauhan was also the architect of **Operation Sunrise**, a joint **Indo-Myanmar military operation** that targeted multiple insurgent groups in the **Northeast in 2019.**

- As the CDS, Lt Gen Chauhan will lead **India's theaterisation effort**, with the three Services yet to sort their differences over the exact structure and command.

- He will also be functioning as **Secretary to Government of India**, Department of Military Affairs.

- He will also be making a priority **list of procurements that needs to be made** while taking into account joint acquisitions rather than each Service following its own list.

About Chief of Defence Staff (CDS)

- The post of the Chief of Defence Staff (CDS) in the **rank of a four star General** with salary and perquisites at par with a Service Chief was created in 2019.

- The CDS is meant to be a **single-point military advisor** to the government, and to coordinate long-term planning, procurements, training and logistics of the three services.

MINISTRY OF DEFENCE: WHO, WHAT

Department of Defence
Headed by Defence Secretary

Department of Military Affairs
Headed by the CDS

Department of Defence Production
Headed by Secretary Defence Production

Department of Defence Research and Development
Headed by DRDO chief

Department of Ex-servicemen Welfare
Headed by Secretary ESW

DUAL-HATTED ROLE OF CDS
■ Permanent Chairman of the Chiefs of Staff Committee
■ Head of Department of Military Affairs in Defence Ministry

- The dual-hatted role refers to the **two hats** the CDS wears:

  - the permanent Chairman of the Chiefs of Staff Committee which has the three service chiefs as members

  - head of the newly created Department of Military Affairs (DMA) in the ministry

Role of Chief of Defence Staff:

- **Principal Military Adviser:** CDS acts as the Principal Military Adviser to the Defence Minister on tri-services matters. He is also be the military adviser to the Nuclear Command Authority (chaired by the Prime Minister), which handles India's nuclear arsenal.

- **Department of Military Affairs' Head:** The Department of Military Affairs will also be headed by the CDS. The mandate of the Department of Military Affairs will include the following areas:

  - Promoting joint-ness in procurement, training and staffing for the Services.

  - Facilitation of restructuring of Military Commands for optimal utilisation of resources.

  - Promoting use of indigenous equipment by the Services.

- **Permanent Chairman of the Chiefs of Staff Committee:** The CDS will be the permanent Chairman of the Chiefs of Staff Committee (COSC). As a permanent chair, CDS will:

- ◉ Administer all tri-service organisations and commands.

- ◉ Function as the Military Adviser to the Nuclear Command Authority.

- ◉ Implement the five year Defence Capital Acquisition Plan (DCAP) and the two year roll on Annual Acquisition Plans.

- ◉ Coordinate operation, logistics, transport, training, support services communications, etc. of the three Services

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SECTION: E
(CONCEPTS)

CURRENT AFFAIRS

Windfall Tax

➤ Windfall taxes are designed to tax the profits a company derives from an external, sometimes unprecedented event— for instance, the energy price-rise as a result of the Russia-Ukraine conflict.

Atomic clocks

➤ Atomic clocks are designed to measure the precise length of a **second**, the base unit of modern timekeeping.

➤ An atomic clock contains an element like caesium or calcium and a source of microwave radiation.

Prompt Corrective Action

➤ Prompt Corrective Action (PCA) is a framework under which the central bank put financially weak banks under watch.

➤ It is imposed when a bank breaches certain regulatory thresholds on:

★ Capital to risk weighted assets ratio (CRAR)

★ Net NPAs

★ Return on assets (RoA)

Liquidity

➤ Liquidity refers to the ease with which an asset, or security, can be converted into ready cash without affecting its market price.

➤ Cash is the most liquid of assets, while tangible items are less liquid.

➤ The two main types of liquidity:

★ market liquidity

★ accounting liquidity

Hate Speech

➤ There is no specific legal definition of 'hate speech'.

➤ The **Law Commission of India**, in its **267th Report**, says: *"Hate speech generally is an incitement to hatred primarily against a group of persons defined in terms of race, ethnicity, gender, sexual orientation, religious belief and the like … Thus, hate speech is any word written or spoken, signs, visible representations within the hearing or sight of a person with the intention to cause fear or alarm, or incitement to violence."*

Current account deficit (CAD)

➤ Current account deficit (CAD) implies the country is importing more goods and services in value than the exports.

★ The country could also be in current account surplus if the value of exports exceeds the imports.

Carbon Dating

➤ Radiocarbon dating is a method that provides objective age estimates for **carbon-based materials** that originated from living organisms.

➤ An age could be estimated by measuring the amount of carbon-14 present in the sample and comparing this against an internationally used reference standard.

➤ **Carbon-14** is a weakly radioactive isotope of Carbon; also known as **radiocarbon**, it is an **isotopic chronometer.**

Food Security

➤ According to NFSA, Food Security is defined as the availability of sufficient food grains to meet the domestic demand as well as access, at the individual level, to adequate means of food at affordable prices.

➤ The globally recognized definition of food security is access to food at the household level at all times to ensure a healthy and active life for all its members.

Unilateralism

➤ The process of acting, reaching a decision, or espousing a principle unilaterally.

➤ **Unilateralism** is any doctrine or agenda that supports one-sided action. Such action may be in disregard for other parties, or as an expression of a commitment toward a direction which other parties may find disagreeable.

➤ As a word, *unilateralism* is attested from 1926, specifically relating to unilateral disarmament. The current, broader meaning emerges in 1964.

➤ It stands in contrast with multilateralism, the pursuit of foreign policy goals alongside allies.

Due Process of law

➤ Due process is **a requirement that legal matters be resolved according to established rules and principles, and that individuals be treated fairly**. Due process applies to both civil and criminal matters.

Niche

➤ In ecology, the term "niche" describes **the role an organism plays in a community**.

➤ A species' niche encompasses both the physical and environmental conditions it requires (like temperature or terrain) and the interactions it has with other species (like predation or competition).

Consumerism

➤ Consumerism is the idea that increasing the consumption of goods and services purchased in the market is always a desirable goal, and that

a person's well-being and happiness depend fundamentally on obtaining consumer goods and material possessions.

➤ Some economists believe that consumer spending stimulates production and economic growth.

➤ Economists view consumption as about fulfilling biological needs & wants based on maximizing utility.

Galileo's law of inertia

➤ It is as stated as "**An object, if once set in motion, moves with uniform velocity if no force acts on it**.

Right to Equality & Reservation

➤ If the classification is not reasonable the legislative or executive action will be arbitrary and the guarantee of equality under article 14 would be breached.

➤ The reservation is an attempt to promote equality among citizens by ensuring equal and fair opportunities to all.

➤ Thus, **arbitrary denial of reservation in promotion is a violation of the right to equality under Article 14**, which says, "The state shall not deny to any person equality before the law and equal protection of laws…" Therefore, reservation in public employment and reservation in promotion is a fundamental right.

Biotechnology

➤ The biotechnological applications **utilize genetically tweaked microbes such as fungi and bacteria, animals and plants**. These applications include diagnostics, therapeutics, bioremediation, processed food, energy production, genetically improved crops for agriculture and waste treatment.

Polymorphism

➤ As related to genomics, refers to **the presence of two or more variant forms of a specific DNA sequence that can occur among different individuals or populations**. The most common type of polymorphism involves variation at a single nucleotide (also called a single-nucleotide polymorphism, or SNP).

Land degradation

➤ Land degradation is the deterioration or loss of the productive capacity of the soils for present and future.

➤ Land degradation is caused by multiple forces, including extreme weather conditions, particularly drought, and harmful human activities

Myasthenia gravis

➤ Myasthenia gravis is a chronic autoimmune, neuromuscular disease that causes weakness in the skeletal muscles that worsens after periods of activity and improves after periods of rest.

➤ These muscles are responsible for functions involving breathing and moving parts of the body, including the arms and legs.

Rarest of Rare

➤ Rarest of rare is a principle that was brought in to make it easy for the judiciary to choose between death penalty and life imprisonment as a punishment for the offence of murder under Section 302.

➤ The category of the 'rarest of the rare' is always evolving.

➤ In such cases, the legal judgment says that the judicial power is obligated to the collective to repair the moral fabric of society which the crime has torn.

Moonlighting

➤ Moonlighting refers to the practice of taking up secondary jobs after the regular work hours. This secondary job is taken without employers' knowledge. It is usually the side jobs taken in the night or on the weekends.

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70 | 72 | 77 | 78 | 80 | 82 | 84 | 86 | 87 | 94 | 97 | 98