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GS 2 : Polity, Governance, International Relations

1. Reviving the spirit of multilateralism

Context:

- The ongoing **47th edition of the “Group of seven” summit** in Carbis Bay, southwest England.

Background:

Group of Seven:

- The Group of Seven (G7) is an inter-governmental political forum **consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.**
- The member countries figure in the list of the world’s largest IMF-**advanced economies and wealthiest countries.** As of 2018, the G7 accounts for close to 60% of global net wealth.
- The G7 was **formed in 1975** in the aftermath of the 1973 Oil Crisis. The G7 became the G8 with Russia’s admission into the group in 1998. But it reverted to the G7 in 2014, following Russia’s annexation of Crimea.
- The G7 is not based on a treaty and has **no permanent secretariat or office.** The G7’s presidency rotates annually among the members.

Details:

- The following are the major takeaways from the second day of the summit.

“Build Back Better World” (B3W) project:

- The “Build Back Better World” (B3W) project envisages to collectively **mobilize hundreds of billions of infrastructure investment for low- and middle-income countries.**
- The B3W project aims to offer a **“values-driven, high-standard and transparent”** partnership.

Carbis Bay Declaration:

- In the light of the devastation caused by the COVID-19 pandemic, the ongoing summit seeks to address such future global health challenges.
- The 'Carbis Bay Declaration' is a landmark global health declaration **aimed at preventing future pandemics** under which G7 leaders have committed to use all their resources.
- The declaration based on the independent report titled '100 Days Mission to Respond to Future Pandemic Threats' contains actionable recommendations on how governments and others can quickly respond to any future outbreaks.
- The G7 Carbis Bay declaration includes the following interventions:
 - Slashing the time taken to **develop and licence vaccines, treatments and diagnostics for any future disease to under 100 days**
 - Reinforcing **global surveillance networks** and genomic sequencing capacity
 - Support for **reforming and strengthening the World Health Organization (WHO)**
- Under the Carbis Bay Declaration, the UK, which holds the presidency for the G7 Leaders' Summit 2021, will establish a new centre to develop vaccines to prevent zoonotic diseases spreading from animals to humans.
- The G7 nations are expected to collectively agree to provide a billion doses of Covid-19 vaccine in an effort to end the pandemic in 2022.

Tackling China:

- The second day of the summit saw leaders addressing the **issue of "strategic competition" with China**. The various initiatives announced during the summit can be viewed as moves to counter China and its moves.
 - The B3W project is aimed to **counter China's Belt and Road infrastructure (BRI) initiative**. The emphasis on a transparent partnership stands in strong contrast to China's BRI which has been widely criticized for pushing countries with unsustainable debt levels.
 - The G7 Carbis Bay declaration on reinforcing global surveillance networks to identify early threats from diseases appears as a **veiled reference to China's failure to notify the world early regarding the COVID-19 pandemic**.
 - The UK which holds the presidency for G7 Leaders' Summit 2021, has **invited India, along with Australia, South Korea and South Africa, as guest countries**. The presence of India, Australia and South Korea at the G7 summit is seen as a nod to the recognition of their discontent with the influence of China.

Strengths of the G7:

- The group is officially organized around shared **values of pluralism, representative government, and globalism**. It steadfastly promotes liberal democracy.
- Though it began as a forum for economic cooperation, over the years, the G7 has **taken up a host of issues ranging from economic growth to environmental issues and terrorism**.
- The G7 has been a formal, high-profile venue for **discussing and coordinating solutions to major global issues** in varied areas like trade, security, economics, and climate change. It has catalyzed or spearheaded several major global initiatives. The G7 agreement on a global minimum corporate tax being such an example.
- Given the significant economic prosperity they enjoy, the member countries **wield enormous power and international influence in global affairs**.

Challenges:

Internal differences:

- The transactional approach to international relations under the Trump administration of the U.S. had cast doubts over the future of the G7.
- The **Brexit issue** has cast a shadow over the ties between the U.S. and the U.K. The current U.S. administration has steadfastly opposed Brexit and has raised concerns over Britain's dispute with the EU over Northern Ireland.
- There continue to be some **differences over economic issues** between the member countries. Example- Taxation of the Big Tech.

Decline in economic dominance:

- From collectively producing around 70% of the world's GDP during the initial years, this number has come down to 40% over the years.

The rise of other groupings:

- The group has been criticized for its **outdated and narrow global representation**. The narrow global representation has also resulted in its ineffectualness to an extent.
- The larger G20 has become a more relevant multilateral body due to the inclusion of developing economies such as Brazil, China, India and South Africa.

Conclusion:

- The ongoing summit coming after a tumultuous period marked by transactional approach to international relations under the Trump administration of the U.S. is an indication of the new administration's intent to build closer coordination with traditional allies in the Global North and **renewed multilateralism**.
- Despite the existing challenges to the G7, the G7's ability to set the tone for cooperation on global issues has not diminished and this needs to be used to revive the emphasis on **multilateral co-ordination and co-operation in the spirit of globalization**.
- The G7 will have to take along other nations in the broader G20 to increase the effectiveness of its initiative.

GS 3 : Economy, Science and Technology, Environment

2. 'Monoclonal antibody treatment beneficial'

Context:

- **Monoclonal antibody treatment** has emerged as a relatively effective and safer alternative in **treating COVID-19 patients**.

Background:

Immune response in human beings:

- The body's immune system generates antibodies as a defense mechanism against unfamiliar molecules from bacteria and viruses, termed antigens.
- Antibodies bind to antigens and kill the invading pathogen.

Monoclonal antibodies:

- **Monoclonal antibodies are identical copies of an antibody that targets one specific antigen.**
- Scientists can make monoclonal antibodies by exposing white blood cells to a particular antigen.
- Each monoclonal antibody is **specific to its matching antigen**. Scientists select a single white blood cell or clone and use this as the basis to produce many identical cells, making many identical copies of the monoclonal antibody.

Monoclonal antibody treatment:

- **Monoclonal antibodies are produced in a laboratory setting and then infused into the blood.** These monoclonal antibodies fight disease by enlisting natural immune system functions.
- The Monoclonal antibodies help in reducing the symptoms and disease progression.
- Monoclonal antibodies have previously been **used to treat viral infections such as Ebola and HIV.**

Details:

- Two of the Monoclonal antibodies being used in India include the **REGCov2 (Casirivimab and Imdevimab).**
- In these drugs, antibodies for COVID target specific proteins and destroy them before they initiate inflammation.

3. 'Operation Olivia' to the rescue of Olive Ridleys

Context:

- **Indian Coast Guard's "Operation Olivia".**

Olive Ridley turtle:

- The olive ridley sea turtle (*Lepidochelys olivacea*), also known commonly as the Pacific ridley sea turtle, is a species of turtle in the family Cheloniidae.
- The species is **one of the most abundant of all sea turtles** found in the world.
- It is **primarily found in warm and tropical waters, primarily in the Pacific and Indian Oceans**, but also in the warm waters of the Atlantic Ocean.

Nesting habits:

- Mating occurs in the offshore waters of the breeding grounds and females then come ashore to nest. **Sea turtles generally return to their natal beach**, or where they were born, to lay eggs as adults.
- The Olive Ridley have a unique nesting habit. They indulge in mass nesting called
 - An arribada is a mass-nesting event when thousands of turtles come ashore at the same time to lay eggs on the same beach.
- Breeding and nesting of the Olive Ridley Turtles is observed **from November to December.**

Threat:

- Heavy **predation of Olive Ridley turtle eggs** by dogs and wild animals
- **Dense fishing activity** along the coasts of Andhra Pradesh, Odisha and Bengal, especially ocean-going **trawlers, mechanized fishing boats and gill-nettors** pose a severe threat to turtles.
- **Beach soil erosion**

Conservation status:

- The Olive Ridley is listed as **vulnerable** under the International Union for Conservation of Nature's Red list.
- It is included in **Schedule I of the Indian Wildlife Protection Act, 1972**, and in the **Appendix I of the Convention of International Trade in Endangered Species of Wild Fauna and Flora**.

Details:

- The annual "Operation Olivia" helps protect Olive Ridley turtles as they congregate along the Odisha coast for breeding and nesting.
 - There are three beaches along the Odisha coast including **Gahirmatha, the mouth of the Devi river, and Rushikulya**.
- The Coast Guard carries out **round-the-clock surveillance** from November till May utilising Coast Guard assets and helps **enforce laws near the rookeries**
- Measures taken include the enforcement of the following laws near the rookeries.
 - The compulsory use of **turtle excluder devices (TED) by trawlers** in the waters adjoining nesting areas
 - **Prohibiting the use of gill nets** on turtle approaches to the shore
 - Curtailing turtle poaching.

4. FAME II to spur new tech, says Venu

- With an aim to promote eco-friendly vehicles, the government had launched the **FAME India scheme (Faster Adoption and Manufacturing of (Strong) Hybrid and Electric Vehicles in India)** in 2015.
- The second phase of FAME India Scheme focuses on **supporting electrification of public and shared transportation** and aims to support electrification through **subsidies for electric vehicles**, including buses, passenger cars and two-wheelers.
- Out of total budgetary support, about 86 percent of fund has been allocated for Demand Incentive so as to create demand for xEVs in the country.

- The incentives for electric vehicles will help **increase penetration** and lead to the **indigenous development of future electric technology**.

5. Bitcoin push

Context:

- El Salvador became **the world's first sovereign nation to adopt bitcoin cryptocurrency as legal tender**

Background:

Cryptocurrency:

- A cryptocurrency is a digital asset designed to work as a medium of exchange.
- Cryptocurrencies typically use decentralized control as opposed to centralized digital currency and central banking systems. Cryptocurrencies are **built on the back of blockchain technology, a system of distributed, cryptographically-secured account keeping**.
- **Bitcoin is the first decentralized cryptocurrency.**

Status of cryptocurrencies:

- Most countries have warned their citizens against investing in cryptocurrencies and transacting in them.
- Some countries have tried to use the blockchain technology to create government-sanctioned digital currencies. China, a hub of cryptocurrency activity, has issued a **digital Yuan** based on blockchain technology. The Bank of England has also proposed a **digital Sterling**.
- The RBI had virtually banned cryptocurrency trading in 2018. The Supreme Court had asked the Centre in 2019 to frame policies for crypto, and in 2020, struck down the curbs imposed by the RBI. **India has allowed the treatment of cryptocurrencies as commodities**.
- Bitcoin is the first and biggest of decentralized cryptocurrencies, which are **increasingly becoming mainstream**. Ethereum, Tether, and Binance Coin are some of the many others that have emerged after Bitcoin.
- As per available reports by the end of 2021, at least 4-5 more nations will adopt bitcoin as their sovereign acceptable currency.

Details:

- As per the new law of El Salvador, Bitcoin, as a legal tender, can be used in any transaction and businesses will have to accept that payment form.
- The law also states that tax contributions can be paid via Bitcoin and exchanges in the cryptocurrency will not be subject to capital gains tax.
- Under the new law, El Salvador will promote necessary training and mechanisms so that the population can access bitcoin transactions. However, those who do not have access to technologies that can carry out bitcoin are excluded from being required to accept it as payment.
- The **bitcoin-dollar exchange rate will be set by the market.**

Significance/Relevance of the move:

Reduce the cost of remittances:

- El Salvador's economy is heavily reliant on remittances. According to World Bank data, remittances made up almost \$6 billion in 2019, which was **about 20% of the country's GDP.**
- A large chunk of that \$6 billion is lost to intermediaries who take a cut of the financial transactions in dollars.
- The adoption of Bitcoins will not only help El Salvadoreans **save on transaction fees of banks and agencies but also offers a faster method** to transfer such remittances.

Mitigate the negative effects of being a dollarized economy:

- El Salvador is among the few countries in the world that don't have their own fiat currency, and uses the US dollar as a legal tender. **El Salvador fully 'dollarised' its economy in 2001.**
 - There are 14-15 countries, which don't have their currency and they typically use the US dollar.
- One of the downsides of a dollarized economy is that it gets linked to the monetary policies of the Federal Reserve of the U.S.
- **The U.S. Federal reserve has been increasingly setting rates that has been benefitting the U.S. economy but was harming the economic stability of El Salvador** and Bitcoin was being adopted in order to mitigate these negative impacts.
- Bitcoin or any other form of cryptocurrency is as good as the dollars for such dollarized economies.

Boost financial inclusion:

- El Salvador's decision to make bitcoin a legal tender will boost financial inclusion in their country as majority of the population does not have access to formal banking channels.

Impetus to economy:

- The government also believes that the move will **boost investments, tourism and innovation and bring economic development for the country.**

Concerns:

- Experts have warned of the following concerns with the adoption of Bitcoin as a legal tender.

Decentralized control:

- Given the essentially decentralized control approach associated with cryptocurrencies like the Bitcoin as against the traditional centralized digital currency and centralized banking systems, they **render government monetary policies ineffective.** This would rob the administration of a vital tool to control the economy.
- They are even deemed a threat to the official currency and monetary system.

Anonymity:

- Governments and economic regulators across the world are wary of private cryptocurrencies also because of the **lack of a central issuing authority or a central validating agency for transactions.**
- Hence these currencies can exist and thrive outside the realm of authority and regulation.
- Their anonymous nature also goes against **global money-laundering** Its use in **illegal online marketplaces that deal with drugs and child pornography** has been well-documented.

Security risk:

- Bitcoin exchanges are digital and therefore **vulnerable to hackers, operational glitches, and malware.**
- By targeting and hacking a cryptocurrency exchange, hackers can gain access to thousands of accounts and digital wallets where the cryptocurrencies are stored.
 - Example- **Gox hacking incident in 2014**, which saw the Japanese exchange close down after millions of dollars in bitcoin were stolen.

High volatility:

- Cryptocurrencies as commodities have been highly volatile.
- They have witnessed **massive swings in their values**. After its introduction in 2009, Bitcoin saw its biggest gain in value last year, having started 2020 at \$7,200 per coin and touching \$65,000 in April of 2021, before falling to \$30,000 in May.
- The move to make Bitcoin a legal tender brings financial risks to ordinary Salvadorans and their country, as the cryptocurrency gains and loses huge amounts of value in a short duration.

Carbon footprint:

- Another major problem associated with crypto currencies is the increasing energy use associated with them.
- **The 'mining' of Bitcoin**, where individuals or companies set up powerful systems to support the blockchain network, for which they are rewarded in the currency, consumes a lot of energy.
- Bitcoin production is estimated to generate between 22 and 22.9 million metric tonnes of carbon dioxide emissions a year. This is a major concern given the current efforts underway to mitigate GHG emissions in line with the Paris climate commitments.

Measures being taken to mitigate some of the challenges:

- The El Salvador government plans to protect citizens from the volatility of Bitcoin prices by **guaranteeing quick convertibility to dollars**.
- The government will enable the purchase of Bitcoins from people unwilling to hold Bitcoins through a **\$150-million trust** created at the country's development bank.
- The **use of Renewable energy for Bitcoin mining facilities** will help address the concerns associated with the large carbon footprint associated with Bitcoins.

6. RNA into DNA

- **Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA)** are important molecules in cell biology, responsible for the storage and reading of genetic information that underpins all life.
- They are both linear polymers, consisting of sugars, phosphates and bases, but there are some key differences which separate the two.
 - Unlike **DNA which is double stranded, RNA is single-stranded.**
 - The bases in DNA are Adenine ('A'), Thymine ('T'), Guanine ('G') and Cytosine ('C'). **RNA shares Adenine ('A'), Guanine ('G') and Cytosine ('C') with DNA, but contains Uracil ('U') rather than Thymine.**
 - Unlike DNA which replicates and stores genetic information and functions as a blueprint for all genetic information contained within an organism, **RNA converts the genetic information contained within DNA** to a format used to build proteins, and then moves it to ribosomal protein factories.
 - **Transcription is the process of copying a segment of DNA into RNA.** The segments of DNA transcribed into RNA molecules that can encode proteins are said to produce messenger RNA.

Context:

- A new study notes that as against the current understanding that only DNA transcription into RNA as being possible, the reverse can also happen.

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. UNDP Report Lauds Aspirational Districts Programme

United Nations Development Programme (UNDP) India has lauded the **Aspirational Districts Programme (ADP)**.

- The analysis was made across the **5 key sectors of the ADP** – health and nutrition; education; agriculture and water resources; basic infrastructure; and skill development and financial inclusion – found that the programme has acted as a catalyst for expediting development in these districts.

Key Points:

- Efforts made under the ADP, previously neglected districts, including those in remote locations and those affected by Left Wing Extremism, 'have experienced more growth and development in the last three years than ever before'.
- Across the sectors of health and nutrition and financial inclusion, the report found that 9.6% more home deliveries are attended by a skilled birth attendant; 5.8% more pregnant women with severe anemia are treated; 4.8% more children diagnosed with diarrhoea are treated; 4.5% more pregnant women register for antenatal care within their first trimester; 406 and 847 more enrolments, and 1580 more accounts opened per 1 lakh population under the Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantra Suraksha Bima Yojana and Pradhan Mantri Jan-Dhan Yojana, respectively.
- The programme has strengthened the technical and administrative capacities of the districts.

Suggestions:

- The **competitive and dynamic culture fostered** by it has successfully pushed several low performing districts (as per baseline rankings) to improve their standing in the past three years.
- Need to **revise a few indicators** that are close to being saturated or met by most districts, such as 'electrification of households' as an indicator of basic infrastructure.
- The **least-improved districts have witnessed** an increase in vulnerabilities, which requires a special focus on the sectors in which these districts have underperformed.

2. Indigenously developed 'anti-hail guns'

In news

- To **help out horticulturists who face crop damage** due to hailstorms, the Himachal Pradesh government will be testing the use of **indigenously developed 'anti-hail guns'**.
 - The indigenous guns have been developed by IIT Bombay along with Dr Y S Parmar University of Horticulture and Forestry at Nauni (Solan).

About the anti-hail gun

- An anti-hail gun is a machine which generates shock waves to **disrupt the growth of hailstones in clouds**.
- It comprises a **tall, fixed structure** somewhat resembling an inverted tower, several metres high, with a long and narrow cone opening towards the sky.
- The gun is “fired” by feeding an explosive mixture of **acetylene gas and air** into its lower chamber, which releases a shock wave
 - Shock waves travel faster than the speed of sound, such as those produced by supersonic aircraft).
- These shock waves supposedly **stop water droplets** in clouds from turning into hailstones, so that they fall simply as raindrops.

Hail

- Hail is **solid precipitation** made of balls or irregular lumps of ice, each of which is called a hailstone.
- Hailstones consist mostly of water ice and measure between 5 mm and 15 cm in diameter.
- Any thunderstorm, which produces hail that reaches the ground, is termed a hailstorm.
- **Maharashtra** is India’s most hailstorm-prone state, according to an IMD analysis of hailstorms across the country between 1981 and 2015.

GS 3 : Economy, Science and Technology, Environment

3. CHIME telescope yields unprecedented results:

Context:

Scientists with the **Canadian Hydrogen Intensity Mapping Experiment (CHIME)** Collaboration have assembled the largest collection of **fast radio bursts (FRBs)** in the telescope’s first FRB catalogue.

Why this is significant?

While catching sight of an FRB is considered a rare thing in the field of radio astronomy, prior to the CHIME project, radio astronomers had only caught sight of around 140 bursts in their scopes since the first FRB was spotted in 2007.

What are FRBs?

- FRBs are oddly bright flashes of light, registering in the radio band of the electromagnetic spectrum, which blaze for a few milliseconds before vanishing without a trace.
- These brief and mysterious beacons have been spotted in various and distant parts of the universe, as well as in our own galaxy.
- Their origins are unknown and their appearance is highly unpredictable.

About the CHIME project:

1. It is a large stationary radio telescope in British Columbia, Canada.
2. The telescope receives radio signals each day from half of the sky as the Earth rotates.
3. The telescope has no moving parts and observes half of the sky each day as the Earth turns.
4. CHIME is a partnership between the University of British Columbia, McGill University, the University of Toronto and the Canadian National Research Council's Dominion Radio Astrophysical Observatory.

4. **European Space Agency's EnVision mission to Venus:**

Context:

European Space Agency (ESA) has announced that it has selected **EnVision** as its next orbiter that will visit **Venus** sometime in the **2030s**.

What is EnVision?

1. EnVision is an ESA led mission with contributions from **NASA**.
2. It will be launched on an Ariane 6 rocket, the spacecraft will take about 15 months to reach Venus and will take 16 more months to achieve orbit circularisation.
3. **Objectives:** To study the planet's atmosphere and surface, monitor trace gases in the atmosphere and analyse its surface composition. A radar provided by NASA will help to image and map the surface.

Other missions to Venus:

1. NASA recently selected two missions to the planet Venus- **DAVINCI+ and VERITAS**.
2. Previously, an ESA-led mission to Venus called '**Venus Express**' (2005-2014) focussed on atmospheric research and pointed to volcanic hotspots on the planet's surface.
3. The first spacecraft to Venus was **the Soviet Union's Venera series, followed by NASA's Magellan Mission that studied Venus from 1990-1994**.
4. As of now, **Japan's Akatsuki mission** is studying the planet from Orbit.

Why are scientists interested in studying Venus?

Earth and Venus have evolved so differently from each other even though they are roughly of the same size and composition. Venus is the hottest planet in the solar system because of the heat that is trapped by its thick cloud cover.

With such missions, scientists seek to address the following questions:

1. What history did Venus experience to arrive at this state and does this foretell Earth's fate should it, too, undergo a catastrophic greenhouse effect?
2. Is Venus still geologically active?
3. Could it have once hosted an ocean and even sustained life?
4. What lessons can be learned about the evolution of terrestrial planets in general, as we discover more Earth-like exoplanets?

About Venus:

- For those on Earth, Venus is the second-brightest object in the sky after the moon.
- It appears bright because of its thick cloud cover that reflects and scatters light.
- It is the second closest planet to the Sun.
- It is called the Earth's twin because of their similar sizes.

How is Venus different from Earth?

1. Venus' thick atmosphere traps heat and is the reason that it is the hottest planet in the solar system, despite coming after Mercury, the closest planet to the Sun. Surface temperatures on Venus can go up to 471 degrees Celsius, which is hot enough to melt lead.
2. Venus moves forward on its orbit around the Sun but spins backwards around its axis slowly. This means on Venus the Sun rises in the west and sets in the East.

3. Venus also does not have a moon and no rings.

5. Species in news: Gharials

Part of: GS Prelims and GS -III – Environment; Conservation

In news

- Recently, Odisha announced a cash award of Rs. 1,000 to conserve gharials in Mahanadi River Basin.

About Gharials

- Gharials (or gavials) are a type of **Asian crocodilian** distinguished by their long, thin snouts.
 - Crocodilians are a **group of reptiles** that includes crocodiles, alligators, caimans, and more.
- India has three species of Crocodilians namely:
 - Gharial: **IUCN Red List- Critically Endangered**
 - Mugger crocodile: **IUCN- Vulnerable.**
 - Saltwater crocodile: **IUCN- Least Concern.**
- All the three are listed on **Appendix I of CITES** and **Schedule I of the Wild Life (Protection) Act, 1972.**
 - However, Saltwater Crocodile populations of Australia, Indonesia and Papua New Guinea are included in Appendix II of CITES.
- **Habitats include:** Fresh waters of the northern India – Chambal river, Ghagra, Gandak river and the Sone river (Bihar).
- Population of Gharials is a good indicator of clean river water.
- Conservation Efforts:
 - **Breeding Centres of Kukrail Gharial Rehabilitation Centre** in Lucknow, Uttar Pradesh, **National Chambal Sanctuary** (Gharial Eco Park, Madhya Pradesh).

India's Roadmap to Ethanol

In news

- The central government has released an expert committee **report on the Roadmap for Ethanol Blending in India by 2025.**

- The roadmap **proposes** a gradual rollout of ethanol-blended fuel to achieve E10 fuel supply by April 2022 and phased rollout of E20 from April 2023 to April 2025.
- The Government of India has advanced the target for 20% **ethanol blending in petrol** (also called E20) to 2025 from 2030.

What is Ethanol?

- It is one of the **principal Biofuels**.
 - It is **naturally produced** by the **fermentation of sugars by yeasts** or via petrochemical processes such as **ethylene hydration**.

Recommendations of the Roadmap:

- **Notify Ethanol Blending Roadmap**
- **Better Infrastructure** for Oil Marketing Companies
- **Speed up** regulatory clearances
- **Incentivise Ethanol Blended Vehicle**
- **Lower pricing** of ethanol blended Gasoline

6. National Mission on Biodiversity and Human Well-Being (NMBHWB)

Context: Preserving biodiversity is directly relevant to the social, economic, and environmental well-being of our people.

- Estimates suggest our forests alone may yield services worth more than a **trillion rupees per year**. Imagine how much greater this value will be with grasslands, wetlands, freshwater, and marine added.
- Repairing our dysfunctional relationship with nature is one of the ways to **mitigate climate change** and curtail future outbreaks of infectious diseases.
- Our biodiversity also serves as a **perpetual source of spiritual enrichment**, intimately linked to our physical and mental well-being.

In 2018, the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC) in consultation with the Ministry of Environment, Forest, and Climate Change and other Ministries approved **NMBHWB**

Key features of National Mission on Biodiversity and Human Well-Being (NMBHWB)

- **Sustainable Utilization:** The Mission will strengthen the science of restoring, conserving, and sustainably utilising India's natural heritage

- **Integration in Development:** The mission will embed biodiversity as a key consideration in all developmental programmes, particularly in agriculture, ecosystem services, health, bio-economy, and climate change mitigation;
- **Database:** It will establish a citizen and policy-oriented biodiversity information system
- **International Commitments:** The mission aims to enhance capacity across all sectors for the realisation of India's national biodiversity targets, UN Sustainable Development Goals (SDGs) and its commitments under the new framework for the Convention on Biological Diversity (CBD)
- **Leadership role:** The Mission will allow India to emerge as a leader in demonstrating linkage between conservation of natural assets and societal well-being.
- **Solutions to create resilience:** Mission programmes will offer nature-based solutions to numerous environmental challenges, including degradation of rivers, forests, and soils, and ongoing threats from climate change, with the goal of creating climate-resilient communities.
- **Mission's "One Health" programme,** integrating human health with animal, plant, soil and environmental health, has both the preventive potential to curtail future pandemics along with the interventional capability for unexpected public health challenges.

Prelims practice Questions

1. EnVision recently seen in news is a/an

- a. European Space Agency's mission to Venus
- b. Air Quality and Weather Forecast System
- c. High-Performance Computing-Artificial Intelligence (HPC-AI) supercomputer project
- d. Gene silencing technology

Answer: a

Explanation:

- EnVision is European Space Agency's next Venus orbiter mission.
- It will be launched in 2030.
- Its aim is to provide a holistic view of the planet from its inner core to the upper atmosphere to determine how and why Venus and Earth evolved so differently.

2. With reference to 'Commission for Agricultural Costs & Prices (CACP)', consider the following statements:

1. CACP takes a final decision on deciding Minimum Support Price (MSP).
2. It is an attached office of the Ministry of Agriculture and Farmers Welfare.

Which of the statements given above is/are correct ?

- A 1 only
B 2 only
C Both 1 and 2
D Neither 1 nor 2

Answer : B

Explanation

- The Minimum Support Price (MSP) is the rate at which the government purchases crops from farmers, and is based on a calculation of at least one-and-a-half times the cost of production incurred by the farmers.

- MSP is a “minimum price” for any crop that the government considers as remunerative for farmers and hence deserving of “support”.
- The **Commission for Agricultural Costs & Prices (CACP) only recommends MSPs** for 22 mandated crops and fair and remunerative price (FRP) for sugarcane.
 - The **Cabinet Committee on Economic Affairs (CCEA)** of the Union government **takes a final decision on the level of MSPs** and other recommendations made by CACP. **Hence, statement 1 is not correct.**
- The mandated crops include 14 crops of the kharif season, 6 rabi crops and 2 other commercial crops.
- In addition, the MSPs of toria and de-husked coconut are fixed on the basis of the MSPs of rapeseed/mustard and copra, respectively.
- CACP is an attached office of the Ministry of Agriculture and Farmers Welfare. **Hence, statement 2 is correct.**

3. Dihing Patkai National Park, often seen in the news recently, is located in?

- a. Assam
- b. Manipur
- c. Meghalaya
- d. Arunachal Pradesh

Answer : a

- Two new national parks, Dehing Patkai and Raimona, was recently notified in Assam.

Dihing Patkai National Park

- Recently, the Assam government notified Dihing Patkai as the seventh National Park of the state.
- [The six other National Parks in Assam are Kaziranga, Manas, Nameri, Orang, Dibru-Saikhowa and Raimona.
- Assam now has the third most National Parks after the 12 in Madhya Pradesh and nine in the Andaman and Nicobar Islands.]
- Dihing Patkai national park will be administered by Soraipung Range of Digboi Forest Division and Jeypore Range of Dibrugarh Forest Division.
- Dehing is the name of the river that flows through this forest and Patkai is the hill at the foot of which the sanctuary lies.
- The Dihing Patkai straddling eastern Assam’s Dibrugarh and Tinsukia districts is a major elephant habitat.

- It encompasses the erstwhile Dehing Patkai Wildlife Sanctuary, Jeypore Reserve Forest and the western block of Upper Dihing Reserve Forest.
- The forest village area diverted under Forest Conservation Act has been excluded.
- Stretches of Dirak and Buri Dihing rivers have been included in the park.

4. Which of the following are sources of Atmospheric Aerosols?

1. Automobiles
2. Power Plants
3. Cigarettes
4. Volcanic Eruptions
5. Desert Storms

Options:

- a. 1, 2, 4 and 5 only
- b. 1, 2 and 4 only
- c. 1, 2, and 3 only
- d. 1, 2, 3, 4 and 5

Answer: d

Explanation:

- Aerosols are minute particles that are suspended in the atmosphere.
- An aerosol is a suspension of fine solid particles or liquid droplets in air or another gas.
- Aerosols can be natural or anthropogenic.
- 90% of aerosols present in the atmosphere are natural.
- Automobiles, power plants, cigarettes, volcanic eruptions, desert storms are all sources of aerosols.

5. Regarding the Indus Valley Civilization, consider the following statements:

1. It was predominantly a secular civilization and the religious element, though present, did not dominate the scene.
2. During this period, cotton was used for manufacturing textiles in India.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer: c

Explanation:

- Indus Valley Civilization was predominantly a secular civilization and the religious element, though present, did not dominate the scene.
- During this period, cotton was used for manufacturing textiles in India.

6. The 'Resolution 75/260' of the United Nations General Assembly (UNGA) recently seen in the news is related to?

- A Implementation of the Declaration of Commitment on HIV/AIDS.
- B Threats to international peace and security caused by terrorist acts
- C Right of return for Palestinian refugees.
- D Prevention and Punishment of the Crime of Genocide.

Answer : A

Explanation

- The Union Health Minister addressed the **75th session of the United Nations General Assembly (UNGA)** on prevention of **HIV/AIDS**.
- The **Resolution 75/260 of UNGA** deals with the **Implementation of the Declaration of Commitment on HIV/AIDS** and the political declarations on HIV/AIDS. **Hence, option A is correct.**

Mains Practice Questions

1. The Union Budget 2021 has proposed setting up a National bad bank to restore banks' health. Critically discuss the idea for ameliorating the banking sector's stress.

Approach

- Start the answer by discussing the concept of bad banks.
- Provide arguments for and against the bad banks
- Conclude suitably.

2. Discuss the term Constitutional Morality and its significance?

Approach

- Start the answer by briefly discussing what is constitutional morality.
- Discuss the significance of constitutional morality.
- Conclude Suitably.