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GS 2 : Polity, Governance, International Relations

1. Nagaland to form panel on Naga issue

Context:

The Nagaland government has **decided to institute a committee headed by the Chief Minister and comprising Opposition leaders to pursue the Naga peace agreement and the Naga political issue with the Centre.**

Background:

- **A peace agreement between the Centre and the Nagas is yet to be finalised.**
- The peace talks between the Government of India and the National Socialist Council of Nagalim (Isak-Muivah), NSCN (IM), **could not yield a peace agreement by October 31, the government's deadline for concluding an accord.**
- **NSCN (IM) intends to have a framework where India and Nagaland would be independent allies in a shared-sovereignty federal relationship.** The Indian government is not ready to accept these demands though is willing to allow for regional autonomy within the framework of the Indian Constitution.

What is the need for a peace agreement?

- It is in the interest of both the central government as well as the Nagas to reach an agreement with respect to the decades-old Naga issue.
- It will **help India address a major security issue.**
- It will **bring in much-needed growth in the region.**

2. Should retired officials be barred from disclosing information?

- Through a recent move, the Government of India has prohibited retired officials of security and intelligence organisations from publishing anything about their work or organisation without prior clearance from the head of the organisation.
- This move calls into focus the need to **reconcile the mostly divergent interests of national security and the right of the public to know.**

- The information leakage into the public domain could impact existing intelligence security operations such as intelligence gathering and military operations.
- As a citizen of a free and democratic country that is based on the free flow of information, the right of the public to be informed entitles the general populace to know about the functioning of all including the security agencies.

3. Biden, Johnson seek to sign 'new Atlantic Charter'

Context:

US President Joe Biden and British Prime Minister Boris Johnson met for the first time to highlight their nations' famed special relationship.

Atlantic Charter:

- They inspected the documents related to the Atlantic Charter.
- **Atlantic Charter is a declaration signed by British Prime Minister Winston Churchill and U.S. President Franklin D. Roosevelt in August 1941**, setting out common goals for the world after Second World War.
- Those goals included **freer trade, disarmament** and the **right to self-determination of all people**.
- It is often cited as a **cornerstone of the trans-Atlantic "special relationship."**
- The charter laid the **foundation for the United Nations and NATO**.

Details:

- The meeting took place on the **eve of the G7 Leaders' Summit**.
- The two leaders plan to sign a **new Atlantic Charter**.
- It would be in a pledge to **"defend the principles, values, and institutions of democracy and open societies."**
- The new Charter outlines modern-day threats including **illicit finance, violent conflict & extremism, climate change, and global health crises like the Covid-19 pandemic**.
- It looks to defend enduring values and is aimed at the **challenge posed by countries like China and Russia** with its promises to promote free trade, human rights and a rules-based international order, and to **counter those who seek to undermine the alliances and institutions**.

4. 'ESI cover for contractual workers'

What's in News?

The Union Labour and Employment Minister has announced that the casual and contractual employees of municipal corporations will be covered under the Employees' State Insurance (ESI) Act, 1948.

Employees' State Insurance (ESI) Act, 1948:

- The Employees' State Insurance Act, 1948 is one of the most important laws that **provide social security**.
- It is an integrated social security scheme tailored to provide socio-economic protection to the workers in the organized sector and their dependents, in contingencies, such as Sickness, Maternity and Death or Disablement due to an employment injury or occupational hazard.
- It **contains six kinds of ESI benefits that injured employees can avail**.
- All of these benefits **must arise in the course of employment** in order to enable workers to access them.

5. EC has vast powers to act against criminalisation of politics: experts

Context:

Legal and political experts opine that the Election Commission could do more to stop the criminalisation of politics.

Details:

- A discussion was held on the implementation of the **Supreme Court's February 2020 directions** to political parties **on publicising criminal antecedents of candidates**.
- It was suggested that **with the assumption that political parties would not cooperate**, the EC and the judiciary would have to play their parts.
- It was highlighted that **EC has vast powers** including under **Article 324** of the Constitution.
- Judiciary also **has an important role to play in the criminalisation of politics** as cases remain pending for years.
- **Investigation and trial of cases should be expedited** and there should be an **effort to disseminate information to voters**.

Article 324:

- Article 324 in the Indian Constitution **gives power to the EC to direct, control, and conduct elections** to all Parliament, to the Legislature of every state, to the offices of the President and Vice President.
- It **vests the superintendence, direction and control of elections in the Election Commission**.

6. Myanmar military charges Suu Kyi with corruption

Context:

Deposed civilian leader **Aung San Suu Kyi** has been charged with corruption by the Myanmar junta.

Background:

- The **country has been in turmoil** since the military ousted Ms. Suu Kyi on February 1, 2021.
- More than 850 **civilians have been killed in a brutal crackdown by security forces** on near-daily protests against the coup.

India's stakes:

- India has expressed "deep concern" over developments in Myanmar. However, analysts have pointed out that given India's stakes in Myanmar, the only option will be to engage, building on its outreach in recent years via the security and defence establishment.
- India's security relationship with the Myanmar military has become extremely close over the years and it may not want to cut ties with Myanmar.
- Myanmar is vital for India in securing the North East frontiers from insurgent groups.
- A harsh reaction from India, on the lines of that from the U.S., would only benefit China. India also views Myanmar as the "gateway to the East" and ASEAN countries.
- India has cultivated several infrastructure and development projects with Myanmar. These include the India-Myanmar-Thailand trilateral highway and the Kaladan multi-modal transit transport network, as well as a plan for a Special Economic Zone at the Sittwe deep-water port.
- Suu Kyi **spent more than 15 years under house arrest** during the **previous military rule** before her 2010 release.

7. Food-unit bills to carry FSSAI licence details

What's in News?

Food safety regulator FSSAI has **mandated food business operators to mention FSSAI licence or registration number on cash receipts** or purchase invoice with effect from October 1, 2021.

- The move comes in the backdrop of **complaints being unresolved due to a lack of specific information.**

- This will help consumers **lodge an online complaint** against a particular food business **using the FSSAI number**.

8. Refused entry, MP moves against Lakshadweep Administrator

What's in News?

CPI MP Binoy Viswam has filed a breach of privilege motion against the Lakshadweep Administrator Praful K. Patel for denying him permission to visit the islands.

- He said that this had prevented him from meeting his cadre and people of the island amidst growing resentment about the policies of the new administrator.

Breach of Privilege Motion

A breach of privilege is an infringement of any of the privileges of MPs or Parliament. Parliamentary privilege refers to the rights and immunities enjoyed by Parliament as an institution and Member of Parliament in their individual capacity, without which they cannot discharge their functions as endowed upon them by the Constitution.

Chapter 20 of rule 22 for Lok Sabha and Chapter 16 Rule 187 for the Rajya Sabha have mentioned the Privilege motion. The scrutiny regarding the breach of this motion in the Lok Sabha is managed by the Speaker and that in the Rajya Sabha is managed by the Chairperson. Once the Speaker or the Chairperson considers the accusations to be true then the accused is called to explain themselves.

A committee of 15 members is elected by the Speaker in the Lok Sabha and a committee of 10 members is elected by the Chairperson at the Rajya Sabha. These committees are responsible for managing all the cases and accusations related to the privilege motion and take relevant actions against and breach of the motion.

GS 3 : Economy, Science and Technology, Environment

9. Making peace with nature

Context:

- The World Environment Day 2021 celebrations witnessed the launch of the **UN Decade on Ecosystem Restoration 2021 - 2030**.

Background:

- During the Bonn Challenge 3.0 high-level meeting in 2018, El Salvador announced plans to propose a United Nations Decade on Ecosystem Restoration 2021–2030, aimed at boosting existing efforts to restore degraded ecosystems.
 - The **Bonn Challenge aims to restore 350 million hectares of degraded ecosystems globally by 2030.**
- Subsequently in 2019, the UN General Assembly officially adopted the resolution declaring 2021–2030 the UN Decade of Ecosystem Restoration.

Environmental degradation:

- Environmental degradation is the deterioration of the environment through **depletion of resources** such as quality of air, water and soil; the **destruction of ecosystems**; habitat destruction; the **extinction of wildlife**; and **pollution.**
- Ecosystems and the environment are being degraded at an unprecedented rate.
- Humanity is facing a “**triple environmental emergency**” of **biodiversity loss, climate disruption and escalating pollution.**

Effect on human beings:

- Environmental degradation is one of the ten threats officially cautioned by the high-level panel on Threats, Challenges and Change of the United Nations.
- Environmental degradation leads to the **reduction of the capacity of the environment to meet social and ecological objectives and needs.**
 - The degradation of land and marine ecosystems **undermines the well-being of 3.2 billion people** and costs about 10 per cent of the annual global gross product in **loss of species and ecosystems services.**
 - Key ecosystems that deliver numerous services essential to food and agriculture, including **supply of freshwater**, protection against hazards and provision of habitat for species such as fish and pollinators, are declining rapidly.
 - Currently, about 20 per cent of the planet’s vegetated surface shows **declining trends in productivity with fertility losses** linked to erosion, depletion and pollution in all parts of the world. By 2050 degradation and climate change could reduce crop yields by 10 per cent globally and by up to 50 per cent in certain regions.
- The COVID-19 pandemic is a direct result of the degradation of natural areas, species loss, and exploitation. The clearance of forests has led to zoonotic

pathogens more frequently jumping from wildlife to humans, creating **public health emergencies**.

Ecosystem restoration:

- Ecosystem restoration is defined as a process of reversing the degradation of ecosystems, such as landscapes, lakes and oceans to **regain their ecological functionality**; in other words, to **improve the productivity and capacity of ecosystems** to meet the needs of society.
- Ecosystem restoration would focus on re-establishing ecological integrity.
- This can be done by allowing the natural regeneration of overexploited ecosystems or by planting trees and other plants or by adopting soil enhancement measures or improved and sustainable management practices.

UN Decade on Ecosystem Restoration:

- The UN Decade on Ecosystem Restoration aims **to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean**.
- It is a **joint initiative by the UN Environment Programme and the UN Food and Agriculture Organization**.
- The UN has called for the restoration to nature of a total area the size of China.
- Ecosystem restoration promoted through this UN Decade takes a **multi-functional landscape approach**, looking at the mosaic of interdependent land uses in which ecological, economic, social, and development-based priorities can find convergence, balance, and complementarity.
- As part of the efforts towards ecosystem restoration, there would be an emphasis on building a strong, **broad-based global movement** to facilitate global cooperation for the restoration of degraded and destroyed ecosystems. The initiative will aim to enhance cooperation and resource mobilization to increase the flow of financial resources, technologies, knowledge, and capacity building to countries and jurisdictions working towards ecosystem restoration.

Significance of the effort:

- Ecosystem restoration benefits people and nature.

Counter triple environmental emergency:

- The initiative will help counter the 'triple environmental emergency' that the world faces today of climate disruption, biodiversity loss and escalating pollution.

- The envisaged efforts could contribute about a third of the needed climate change mitigation, as well as protect nature and biodiversity. Ecosystem restoration could remove up to 26 gigatons of greenhouse gases from the atmosphere by **reviving natural carbon stores**.
- The initiative can help halt the collapse of biodiversity by **rebuilding homes for wildlife by restoring forests**.

Move towards a more sustainable future:

- The envisaged efforts will help put the world on track for a sustainable future.
- **Mainstreaming ecosystem restoration in policy and planning** will help address current developmental challenges due to land degradation, biodiversity loss, and climate change vulnerability through climate change mitigation and adaptation.

Benefits to humans:

- Ecosystem restoration approach offers significant benefits to humans.
 - Ecological integrity will help **ensure food security and water supply for humans** and will thus help manage the associated risks of conflict and migration.
 - A well-planned ecosystem restoration approach offers an **unparalleled opportunity for job creation**. The enhanced opportunities for livelihood can help end poverty.
 - The initiative **also** makes economic sense given that the restoration of 350 million hectares of degraded terrestrial and aquatic ecosystems by 2030 could **generate US\$9 trillion in ecosystem services**. The benefits obtained from ecosystem generation on average exceed the costs of the initial investment tenfold, whereas the cost of inaction is at least three times the cost of ecosystem restoration.

Raise awareness:

- The initiative will help **raise awareness of the importance of functional ecosystems for human well-being** and productive activities, local development and the economic sustainability of society.

Link with other initiatives:

- Ecosystem restoration is recognized as a key component in achieving targets under some important international conventions and agreements.

- Ecosystem restoration is fundamental to achieving the **Sustainable Development Goals**, mainly those on climate change, poverty eradication, food security, water and biodiversity conservation.
- It would also be an important pillar of international environmental conventions, such as the **Ramsar Convention on Wetlands**, the Strategic Plan for Biodiversity 2020 and its **Aichi Biodiversity Targets**, the United Nations Framework Convention on Climate Change and **Paris Agreement**, the **United Nations Convention to Combat Desertification** and its target of Land Degradation Neutrality
- Planned activities during the UN Decade on Ecosystem Restoration are also designed to contribute to the **Bonn Challenge** to restore degraded and deforested land.

Link with health:

- **Healthier ecosystems** and a healthier respect for the wild spaces of our world will give us a healthier planet and healthier people.
- Ecosystem restoration is a necessary intervention to counter the increasing number of zoonotic pathogens jumping onto humans. The recent COVID-19 pandemic is an illustration of this.

Steps to be taken:

GHG mitigation:

- There must be a concerted effort to **reduce carbon dioxide emissions as part of climate change mitigation efforts**.
 - Globally the net carbon dioxide emissions should reduce by 45% by 2030 compared to 2010 and must reach net-zero emissions by 2050 to be able to achieve the 1.5°C Paris Agreement target.
- This needs the **transformation of energy systems, land use, agriculture, forest protection, urban development, infrastructure, and lifestyles**.

Conserving biodiversity:

- The ecosystem restoration approach must be aligned with conserving and restoring biodiversity given the **critical importance that biodiversity plays in maintaining ecological balance**.

More sustainable approach:

- There is an urgent need to **transform the economic, financial and production systems towards sustainability**.

- This would require eliminating environmentally harmful subsidies, considering natural capital in calculating the wealth of the nation and **investing in low-carbon and nature-friendly technologies**. Such an approach will help minimize air and water pollution and waste.
- The world should work towards creating food systems that work with nature and reduce waste.
- The government has to incentivize financial flows and investment patterns towards sustainability by appropriate policy measures and fiscal support.

Participative approach:

- Transformational ecosystem restoration requires a participative approach.
- The initiative will only succeed if everyone plays a part. While efforts from national governments are vital, everyone has a role to play, including the private sector, NGOs and individuals.

Conclusion:

- In the light of the “triple environmental emergency” that the world faces today, **reconciling humanity with nature is essential**.
- There has never been a more urgent need to restore damaged ecosystems.
- Ecosystems support all life on Earth. **The healthier our ecosystems are, the healthier the planet – and its people.**

Additional information:

- The **New York Declaration on Forests (NYDF)** is a voluntary and non-binding international declaration to take action to **halt global deforestation by 2030**.
- In 2019, India raised its ambition for restoration, promising an increase in **restored degraded land from 21 to 26 million hectares by 2030 under the Bonn Challenge**.

10. 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.

Fast Radio Bursts (FRB):

- 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.
- FRBs have been spotted in various and distant parts of the universe, as well as in the Milky Way.
- Their **origins are unknown** and their **appearance is highly unpredictable**.

Details:

- CHIME collaboration includes researchers at the **Pune-based Tata Institute for Fundamental Research (TIFR)** and the **National Centre for Radio Astrophysics (NCRA)**.
- It is a **large stationary radio telescope in British Columbia, Canada**.
- CHIME **comprises four massive cylindrical radio antennas** located at the Dominion Radio Astrophysical Observatory, operated by the National Research Council of Canada.
- The telescope receives radio signals each day **from half of the sky as the Earth rotates**.
- CHIME **focuses incoming signals using a 'correlator'**.
 - Correlator is a **powerful digital signal processor** that can work through huge amounts of data, at a rate of about **seven terrabytes per second**.
 - This enables CHIME to reconstruct **and look in thousands of directions simultaneously**, helping it detect FRBs a thousand times more often than a traditional telescope.

Observations:

- The **telescope has detected 535 new fast radio bursts** in its first year of operation itself (2018-2019).
- Most bursts likely originated from far-off sources within distant galaxies.
- Scientists have recorded **FRBs that repeat and those that don't**.
- **Repeating FRBs last slightly longer and emit more focused radio frequencies** than bursts from single, non-repeating FRBs.
- They are **evenly distributed in space, seeming to arise from all parts of the sky**.
- Scientists calculated that **bright fast radio bursts occur** at a rate of about **800 per day** across the entire sky.

Significance:

- **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**.
- CHIME project has **nearly quadrupled the number of fast radio bursts discovered** to date.
- With more observations, astronomers hope to find out their **extreme origins and properties**.
- They plan to use the bursts, and their dispersion estimates, **to map the distribution of gas throughout the universe**.



GS 2 : Polity, Governance, International Relations

1. AISHE-2020

Why in News

Recently, the Union Education Minister announced the release of the report of **All India Survey on Higher Education (AISHE) 2019-20**.

- This Report **provides key performance indicators** on the current status of **Higher education in the country**.
- It is the **10th** in the series of AISHE **annually released** by the Department of Higher Education.

Key Points

- **Total Student Enrolment:**
 - In the **last five years from 2015-16 to 2019-20**, there has been a **growth of 11.4%** in student enrolment.
 - Total Enrolment in Higher Education stands at **3.85 crore in 2019-20** as compared to **3.74 crore in 2018-19**, registering a **growth of 11.36 lakh (3.04 %)**.
 - **Uttar Pradesh has highest student enrolment** in India, it has **49.1% male and 50.9% female** students followed by **Tamil Nadu and Maharashtra**.
- **Gross Enrolment Ratio:**
 - The Gross Enrollment Ratio (GER) **increased by a minuscule 0.8%** in 2019-20.
 - **GER is the number of students enrolled in a given level of education**, regardless of age, **expressed as a percentage** of the official school-age population corresponding to the same level of education.
 - The percentage of students belonging to the eligible age group enrolled in higher education in **2019-20 is 27.1%** against **26.3% in 2018-19** and **24.3% in 2014-2015**.
- **Female Enrolment:**
 - There has been an overall **increase of over 18%** in female enrolment in higher education from **2015-16 to 2019-20**.

- However, the share of girl students is lowest in institutes of national importance while female participation in professional courses is lower in comparison to academic courses.
- **Gender Parity Index:**
 - **Gender Parity Index (GPI)** in Higher Education in 2019-20 is 1.01 against 1.00 in 2018-19 indicating an **improvement in the relative access to higher education for females** of eligible age group compared to males.
 - A GPI of 1 indicates parity between the sexes; a GPI that varies between 0 and 1 typically means a disparity in favour of males; whereas a **GPI greater than 1 indicates a disparity in favour of females.**
- **Teacher's:**
 - Total Number of Teachers stands at 15,03,156 comprising **57.5% male and 42.5% female.**
 - **Pupil Teacher Ratio** in Higher Education in 2019-20 is **26.**
- **Attractive Disciplines:**
 - Nearly 85% of the students (2.85 crore) were enrolled in the six major disciplines such as **Humanities, Science, Commerce, Engineering & Technology, Medical Science and IT & Computer.**
- **Recent Initiatives:**
 - **National Education Policy (NEP), 2020:**
 - It aims at increasing the GER in higher education to **50% by 2035.**
 - **Scheme for Promotion of Academic and Research Collaboration (SPARC):**
 - It aims at improving the **research ecosystem of India's higher educational institutions** by facilitating academic and research collaborations between Indian institutions and the best institutions in the world.
 - **Rashtriya Uchatar Shiksha Abhiyan (RUSA):**
 - It aims at providing **strategic funding to higher educational institutions** throughout the country.
 - **Prime Minister's Research Fellowship (PMRF):**
 - It will attract the talent pool of the country to **doctoral (Ph.D) programmes for carrying out research** in cutting edge science and technology domains, with focus on national priorities.

2. Padma Awards

Why in News

Online nominations/recommendations for the **Padma Awards** to be announced on the occasion of **Republic Day, 2022** are open.

- In 2021, a total of 119 Padma awards were conferred, including 7 padma vibhushan, 10 padma bhushan and 102 padma shri.

Key Points

- **Background:**
 - The Padma Awards are announced **annually on Republic Day (26th January)**.
 - **Instituted in 1954**, it is one of the **highest civilian honours** of India.
- **Objective:**
 - To **recognize achievements in all fields** of activities or disciplines where an **element of public service is involved**.
- **Categories:**
 - The Awards are given in **three categories**:
 - **Padma Vibhushan** (for exceptional and distinguished service),
 - **Padma Bhushan** (distinguished service of higher-order) and
 - **Padma Shri** (distinguished service).
 - **Padma Vibhushan is highest in the hierarchy** of Padma Awards followed by Padma Bhushan and Padma Shri.
- **Disciplines:**
 - The Awards are given in **various disciplines/ fields of activities**, viz.- art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service etc.
- **Eligibility:**
 - **All persons without distinction of race, occupation, position or sex** are eligible for these Awards.
- **Selection Process:**
 - **Padma Awards Committee:**
 - The Awards are conferred on the recommendations made by the Padma Awards Committee, which is **constituted by the Prime Minister every year**.
 - **Awarded by President:**
 - The awards are **presented by the President** of India usually in the month of March/ April every year.

Bharat Ratna

- It is the **highest civilian award of the country**. It is **awarded in recognition of exceptional service/performance** of the highest order in any field of human endeavour.
- It is treated on a different footing from Padma Award. The **recommendations for Bharat Ratna are made by the Prime Minister** to the President of India.
- The number of Bharat Ratna Awards is restricted to a **maximum of three in a particular year**.

3. Global Liveability Index: EIU

Why in News

Auckland (New Zealand) has topped the Economist Intelligence Unit's (EIU) Global Liveability Index of 140 cities around the world.

Key Points

- **About Global Liveability Index:**
 - The index takes into account more than **30 qualitative and quantitative factors** spanning **five broad categories: stability (25%), healthcare (20%), culture and environment (25%), education (10%), and infrastructure (20%)**.
 - Due to the **pandemic**, the EIU added **new indicators** such as stress on health-care resources as well as restrictions around local sporting events, theatres, music concerts, restaurants and schools.
 - Each factor in a city is **rated as** acceptable, tolerable, uncomfortable, undesirable or intolerable.
- **General Scenario:**
 - Overall, the **Covid-19 pandemic caused liveability to decline** - as cities experienced lockdowns and significant strains on their healthcare system. This **led to an unprecedented level of change in the rankings**, with many of the cities that were previously ranked as the most liveable tumbling.
 - **Austria's Vienna, number one in both 2018 and 2019**, has completely **dropped out of the top 10** after being heavily affected by Covid-19, and now **ranks 12**.
 - **Auckland rose to the top** of the ranking **owing to its successful approach in containing the Covid-19 pandemic**, which allowed its society to remain open and the city to score strongly on a number of metrics including education, culture and environment.
 - **Damascus remains the world's least liveable city**, as the effects of the civil war in Syria continue to take their toll.
 - Most of the previous ten least liveable cities **remain in the bottom ten this year**, including **Dhaka (Bangladesh) and Karachi (Pakistan)** in the Asia-Pacific (APAC) region.
 - However, there is a strong contingent of cities in the **APAC region at the top of the rankings**, with **Osaka, Adelaide, Tokyo and Wellington** rounding out the **top five**.
 - Apart from cities in New Zealand, Australia and Japan, other cities in the Asia-Pacific region such as **Taipei (Taiwan) (33rd)** and **Singapore (34th)** have also performed well.

- **Top 3 Liveable Cities:**
 - Auckland (New Zealand), Osaka (Japan), Adelaide (Australia).
- **Bottom 3 Liveable Cities:**
 - Damascus (Syria), Lagos (Nigeria), Port Moresby (Papua New Guinea).

GS 3 : Economy, Science and Technology, Environment

4. Rescuing Gharials: Mahanadi River

Why in News

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

Key Points

- **About Gharials:**
 - Gharials, sometimes called 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** (*Gavialis gangeticus*): IUCN Red List- Critically Endangered
 - **Mugger crocodile** (*Crocodylus palustris*): IUCN- Vulnerable.
 - **Saltwater crocodile** (*Crocodylus porosus*): IUCN- Least Concern.
 - All the three are listed on **Appendix I** of CITES and **Schedule I** of the **Wild Life (Protection) Act, 1972**.
 - **Exception: Saltwater Crocodile populations of Australia, Indonesia and Papua New Guinea are included in Appendix II of CITES.**
 - **Habitat of Gharials:**
 - **Natural Habitat:** Fresh waters of the northern part of India.
 - **Primary Habitat:** **Chambal river** (a tributary of Yamuna).
 - **Secondary Habitat:** **Ghagra, Gandak river, Girwa river** (Uttar Pradesh), the **Ramganga river** (Uttarakhand) and the **Sone river** (Bihar).
 - **Significance:** Population of Gharials are 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).**
- **Threats:**
 - Increased river pollution, dam construction, massive-scale fishing operations and floods.
 - Illegal sand mining and poaching.
- **Mahanadi River:**
 - **About:**
 - The Mahanadi River system is the **third largest of peninsular India after Godavari and Krishna**, and the **largest river of Odisha state.**
 - The **catchment area** of the river extends to **Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.**
 - Its **basin is bounded** by the Central India hills on the north, by the Eastern Ghats on the south and east and by the Maikala range on the west.
 - **Source:**
 - It rises from a place near **Sihawa in Bastar hills in the state of Chhattisgarh** to the south of Amarkantak.
 - **Major Tributaries:** Seonath River, Hasdeo river, Mand river, Ib river, Jonking river, Tel river
 - **Mahanadi River Dispute:** The Central Government constituted **Mahanadi Water Disputes Tribunal** in 2018.
 - **Major Dams/Projects on Mahanadi:**
 - **Hirakud Dam:** This is the longest dam of India.
 - Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.

5.El Salvador Adopts Bitcoin as Legal Tender

Why in News

El Salvador, a small coastal country in Central America has become the **first in the world** to adopt **Bitcoin**, as legal tender.

- **Legal tender** is the **legally recognized money** within a given political jurisdiction.

Key Points

- **Bitcoin:**
 - **Introduction:**

- Introduced in 2009, it is a type of **cryptocurrency** that enables instant payments to anyone.
 - **Cryptocurrency** is a specific type of **virtual currency**, which is decentralised and protected by cryptographic encryption techniques.
 - **Bitcoin, Ethereum, Ripple** are a few notable examples of cryptocurrencies.
- Bitcoin is based on an **open-source protocol** and is not issued by any **central authority**.
- **Use:**
 - Originally, Bitcoin was intended to provide an alternative to **fiat money** and become a universally accepted medium of exchange directly between two involved parties.
 - Fiat money is a government-issued currency that is not backed by a commodity such as gold.
- **Reason behind this Decision:**
 - **Loss on Remittances:**
 - El Salvador relies heavily on **money sent back from workers abroad**.
 - Bitcoin adoption may make these **remittances quicker and cheaper**.
 - **Boost Financial Inclusion:**
 - It is also expected to **boost financial inclusion** in their country as the majority of the population does not have access to formal banking channels.
- **Concerns:**
 - In the absence of a **central regulating authority**, legalizing bitcoin will have potential for **fraud and money laundering, high energy costs and extreme volatility**.
- **Implications for the Crypto World:**
 - This could **potentially encourage** other **smaller countries with weaker economies** to open up to **crypto** as an alternative to **fiat currencies**, paving the way for mainstream future adoption worldwide.
 - Already, **Venezuela and many African countries** have started using cryptocurrencies as a long term store of value, as their currencies are deflating quickly.
- **Some Lessons for India:**
 - **Not a Instance for Monetary Policy:**
 - El Salvador does not have its **own monetary policy**, hence, no local currency to protect. It runs on the monetary policy of the US Federal Reserve.

- Therefore, any changes in Federal Reserve policies will definitely affect the Country. Hence, it is looking at such alternatives.
- Since, **India has its own currency and a central bank**, therefore coexistence of bitcoin and rupee side by side becomes difficult.
- **Impact on Remittances:**
 - The impact **Bitcoin has on remittance inflows** would be worth monitoring for India, which is home to the **largest remittance market in the world**.
 - According to a **World Bank report, India** received over **USD 83 billion** in remittances in **2020**.
- **Impact on Money Laundering:**
 - The implication of this move for money laundering is unclear at the moment.
 - Currently, El Salvador is not considered deficient under the **Financial Action Task Force (FATF)** money laundering requirements.
 - However, with large scale cryptocurrency inflows and outflows, it would be expected that El Salvador would comply with the 2019 FATF guidance on Virtual Currencies.
- **India's Current Stand on Cryptocurrency:**
 - In 2018, **The Reserve Bank of India (RBI)** issued a circular preventing all banks from dealing in cryptocurrencies. This circular was declared unconstitutional by the **Supreme Court** in May 2020.
 - Recently, the government has announced to introduce a bill; **Cryptocurrency and Regulation of Official Digital Currency Bill, 2021**, to create a sovereign digital currency and simultaneously ban all private cryptocurrencies.
 - In India, the funds that have gone into the Indian blockchain start-ups account for less than 0.2% of the amount raised by the sector globally.
 - The current approach towards cryptocurrencies makes it near-impossible for blockchain entrepreneurs and investors to acquire much economic benefit.

Way Forward

- The **overall takeaway** for India from the El Salvador case is **not** in the **monetary sense** at all but as an example of how far countries are willing to go to attract what they believe is the ultimate prize – **innovators and entrepreneurs working on this emerging sector**.
- This is the **wealth that India has definitely and has barely protected with policy**.

- While deliberations continue in India on the monetary and financial regulations around cryptocurrency, it is important that attention be paid to incentives for India's developers working on key innovations in the space.

6. India's Ethanol Roadmap

Why 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.

Key Points

- **About the Report:**
 - The **Ministry of Petroleum & Natural Gas (MoP&NG)** had instituted an Expert Group to study the issues such as pricing of ethanol, matching pace of the automobile industry to manufacture vehicles with new engines with the supply of ethanol, pricing of such vehicles, fuel efficiency of different engines etc.
- **Ethanol Blending:**
 - **About Ethanol:**
 - It is one of the principal **biofuels**, which is naturally produced by the fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.
 - **Blending Target:**
 - The Government of India has **advanced the target for 20% ethanol blending in petrol (also called E20) to 2025** from 2030.
 - **Currently, 8.5% of ethanol is blended with petrol** in India.
 - **Objectives of Ethanol Blending:**
 - **Energy Security:**
 - Increased use of ethanol can help **reduce the oil import bill**. India's net import cost stands at USD 551 billion in 2020-21.
 - The E20 program can **save the country USD 4 billion (Rs 30,000 crore) per annum**.
 - **Incentives for Farmers:**
 - The oil companies procure ethanol from farmers that **benefits the sugarcane farmers**.

- Further, the government plans to **encourage use of water-saving crops, such as maize**, to produce ethanol, and **production of ethanol from non-food feedstock**.
- **Impact on Emission:**
 - Use of ethanol-blended petrol **decreases emissions such as carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx)**.
 - The **unregulated carbonyl emissions**, such as acetaldehyde emission **were, however, higher with E10 and E20** compared to normal petrol. However, these emissions were relatively lower.
- **Recommendations:**
 - **Notifying Ethanol Blending Roadmap:** MoP&NG should immediately notify the plan for pan-India availability of E10 fuel by April, 2022 and its continued availability thereafter until 2025 for older vehicles, and launch of E20 in the country in phases from April, 2023 onwards so as to make E20 available by April, 2025.
 - **Augmenting Infrastructure for Oil Marketing Companies:** OMCs will need to prepare for the projected requirement of ethanol storage, handling, blending and dispensing infrastructure.
 - **Expediting Regulatory Clearances:** Currently, ethanol production plants/distilleries fall under the “Red category” and require environmental clearance under the Air and Water Acts for new and expansion projects.
 - This often takes a long time leading to delays.
 - While several steps have been taken to expedite Environment Clearances (EC) under **the Environment Protection Act** there are few areas of concern which if addressed, will facilitate early setting up of ethanol distillation capacities in the country.
 - **Incentivising Ethanol Blended Vehicle:** Globally, vehicles compliant with higher ethanol blends are provided with tax benefits.
 - A similar approach may be followed so that the cost increase due to E20 compatible design may be absorbed to a certain extent, as is being done in some states for promoting **Electric Vehicles**.
 - **Pricing of Ethanol Blended Gasoline:** For better acceptability of higher ethanol blends in the country, retail price of such fuels **should be lower than normal petrol** to compensate for the reduction in calorific value and incentivize switching to the blended fuel.
 - Tax breaks on ethanol as a fuel may be considered by the government.

Initiatives Already Taken

- The **National Policy on Biofuels-2018**, provides an indicative target of 20% ethanol blending under the Ethanol Blended Petrol (EBP) Programme by 2030.
- The **Union Ministry of Road Transport and Highways** has **mandated stickers on vehicles mentioning their E20, E85 or E100 compatibility**.
 - This will pave the way for flex fuel vehicles.
 - Flex fuel engines can run any ratio of blended petrol from E20 to E100.
- **E100 pilot project**: It has been inaugurated in Pune.
 - TVS Apache two-wheelers are designed to run on E80 or pure ethanol (E100).
- **Pradhan Mantri JI-VAN Yojana, 2019**: The scheme aims to create an ecosystem for setting up commercial projects and boost Research and Development in the 2G Ethanol sector.
- **GOBAR (Galvanizing Organic Bio-Agro Resources) DHAN Scheme, 2018**: The scheme aims to positively impact village cleanliness and **generate wealth and energy** from cattle and organic waste.
 - It also aims at creating new rural livelihood opportunities and enhancing income for farmers and other rural people.
- **Repurpose Used Cooking Oil (RUCO)**: The Food Safety and Standards Authority of India (FSSAI) has launched this initiative that will enable collection and conversion of used cooking oil to biodiesel.

7. Fast Radio Bursts

Why in News

Recently, researchers from the **Pune-based Tata Institute for Fundamental Research (TIFR)** and the **National Centre for Radio Astrophysics (NCRA)**, have assembled the largest collection of **Fast Radio Bursts (FRBs)** catalogue.

- The data is from **Canadian Hydrogen Intensity Mapping Experiment (CHIME)**.
- In 2020, the **National Aeronautics and Space Administration (NASA)** spotted **FRB for the first time in the Milky Way**.

Key Points

- **Fast Radio Bursts**:
 - FRB are **bright bursts of radio waves** (radio waves can be produced by astronomical objects with changing magnetic fields) whose **durations lie in the millisecond-scale**, because of which it is difficult to detect them and determine their position in the sky.
 - It was first **discovered in 2007**.
 -

- □ A defining property of these bursts is their **dispersion** (scattering or separation), the bursts **produce a spectrum of radio waves**, and as the waves travel through matter, they spread out or disperse with bursts at higher radio frequencies arriving at telescopes earlier than those at lower frequencies.
 - **Dispersion** can result in **signal degradation in many applications, especially over large distances**.
- This dispersion allows researchers to learn about two important things:
 - They can measure this dispersion to **learn about the stuff that radio bursts pass through as they travel toward Earth**
 - They can indirectly **determine how far apart things are**.
- **FRBs Catalogue & Findings:**
 - The new catalogue significantly **expands the current library of known FRBs**, and is already **yielding clues as to their properties**.
 - For instance, the newly discovered bursts appear to fall in **two distinct classes: those that repeat, and those that don't**.
 - The **repeaters looked different**, with each burst lasting slightly longer and emitting more focused radio frequencies than bursts from single, non-repeating FRBs.
 - These differences strongly suggest that emission from repeaters and non-repeaters is generated either by different physical mechanisms or in different astrophysical environments
 - The bursts were **evenly distributed in space, seeming to arise from any and all parts of the sky**.
 - Bright FRBs occur at a rate of about **800 per day** across the entire sky - the most precise estimate of FRBs overall rate to date.
- **Origin of FRBs:**
 - FRBs 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**.
 - The **CHIME** project has nearly quadrupled the number of fast radio bursts discovered to date.
 - The telescope has detected **535 new FRBs** in its first year of operation itself, **between 2018 and 2019**.
 - With more observations, astronomers hope soon to **find the origins of the FRBs**.
- **Chime:**
 - It is a **novel radio telescope that has no moving parts**. Originally **conceived to map the most abundant element in the universe - hydrogen** - over a good

fraction of the observable universe, this unusual telescope is **optimized to have a high mapping speed.**

- It is located at the **Dominion Radio Astrophysical Observatory**, operated by the **National Research Council of Canada in British Columbia, Canada.**
- The telescope **receives radio signals each day from half of the sky as the Earth rotates.**

□ **Significance of Studying FRBs:**

- The unique properties of fast radio bursts and their host galaxies combined with recent technological advancements have given researchers **hope that these phenomena can be used to answer some long-standing questions about the universe.**
- It can be **used to understand the three-dimensional structure of matter in the universe and to learn about poorly understood early moments in the evolution of the universe.**

Prelims Practice Questions

1. Consider the following statements about the Hindukush Himalayan (HKH) region:

1. The region spreads in Afghanistan, Bhutan, China, India, Kyrgyzstan, Mongolia, Tajikistan and Uzbekistan.
2. The region has the world's largest store of snow and ice outside the polar region.

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

HinduKush Himalayan (HKH) Region:

- The HKH region spans **Afghanistan, Bangladesh, Bhutan, China, India, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, Tajikistan, and Uzbekistan. Hence, statement 1 is correct.**
- It traverses about 5 million square kilometres and hosts a large and culturally diverse population.
- It is considered the Third Pole (after the North and South Poles), and has significant implications for climate.
- It contains vast cryospheric zones (frozen water parts) and is also the **world's largest store of snow and ice outside the polar region. Hence, statement 2 is correct.**

2. Which was the first-ever aircraft carrier warship of India?

- a. INS Viraat
- b. INS Vikrant
- c. INS Vikramaditya
- d. INS Varun

Answer: b

Explanation

- The first-ever aircraft carrier warship of India was INS Vikrant.
- It was decommissioned in 1997.
- INS Vikrant aircraft carrier was bought from the UK, it was first named HMS Hercules and renamed after its sale to India.

3. Consider the following statements:

1. Gaganyaan will be India's first manned mission in space.
2. Gaganyaan will be launched by Polar Satellite Launch Vehicle (PSLV).
3. IN-SPACe will be established to increase private partnership in the space sector.

Which of the statements given above is/are correct?

- A 1 and 2 only
- B 2 and 3 only
- C 1 and 3 only
- D 1, 2 and 3

Answer : C

Explanation

- **Gaganyaan** is a mission by the **Indian Space Research Organisation (ISRO)**.
- Under the Gaganyaan schedule:
 - Three flights will be sent into orbit.
 - **There will be two unmanned flights and one human spaceflight.**
- The human space flight programme will have **three Indian astronauts, including a woman. Hence, statement 1 is correct.**
- **GSLV Mk III, also called the LVM-3 (Launch Vehicle Mark-3),** the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability. **Hence, statement 2 is not correct.**
- The mission will help in enhancement of science and technology levels in the country and help inspire youth.
 - Gaganyaan will involve numerous agencies, laboratories, disciplines, industries and departments.
 - Recently, the Government has announced **a new organisation, IN-SPACe, part of reforms to increase private participation in the space sector. Hence, statement 3 is correct.**

4. Meri Saheli Initiative for the security of women was launched by which of the following organisation?

- a. Centre for Development of Advanced Computing (C-DAC)
- b. Software Technology Parks of India (STPI)
- c. Railway Protection Force
- d. Technology Information, Forecasting and Assessment Council (TIFAC)

Answer : c

Explanation

'Meri Saheli' initiative was launched as Pilot Project by Railway Protection Force (RPF) across South Eastern Railway for security of women passengers in trains originating in that zone.

5. Which of the following committees are related to reforms in Banking sectors?

1. Narasimham Committee
2. P J Nayak Committee
3. Abhijit Sen Committee

Select the correct answer using the code given below:

- A 1 and 2 only
- B 2 and 3 only
- C 1 only
- D 1, 2 and 3

Answer : A

Explanation

- The Union Budget 2021 has announced the privatisation of two public sector banks and one general insurance company in the upcoming fiscal 2021-22.
- Many committees had proposed bringing down the government stake in public banks below 51%:
- **Narasimham Committee, 1998**
 - The merger of major banks which will have a 'multiplier effect' on the industry.
 - Improve the strength of the Indian banking system the committee recommended to raise capital adequacy norms.

- Review of functions of boards to adopt a professional corporate strategy to check the imbalance between government control over the banks in the form of management and ownership, and bank autonomy.
- **PJ Nayak Committee, 2014**
 - Conversion of PSBs into Companies as per the Companies Act.
 - Formation of a Bank Investment Company (BIC) under the Companies Act and transfer of shares by the central government in PSBs to the BIC.
 - BIC should be given the controlling power of boards of PSBs.
 - Proportionate voting rights to all shareholders and reduction of government shareholding to 40%.
- Abhijit Sen Committee (2002) is related to the **Long Term Food Policy of India**.
- The Abhijit Sen committee (2007) was formed to study the **impact, if any, on futures trading on agricultural commodity prices (not banking reforms)**.
- **Hence, option A is correct.**

6. Consider the following statements about National Fellowship Scheme for Scheduled Caste Students

1. Ministry of Education provides Fellowships to Scheduled Caste students pursuing M.Phil and Ph.D.
2. It is a central sector scheme and funds are not allocated state wise.

Which of the above statement(s) is/are correct?

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

Answer : b

Explanation

- The Ministry of Social Justice and Empowerment implements the National Fellowship for Scheduled Castes (NFSC).
- It provide Fellowships to Scheduled Caste students pursuing M.Phil and Ph.D.
- It is a Central Sector Scheme and funds are not allocated State wise.

Mains Practice Questions

1Q. Examine the feasibility and challenges of having two time zones in India. (250 words)

Approach

- Write briefly about the existing standard time zone and the problems associated with it in North eastern region.
- Write the benefits of two time zones.
- Write the problems associated with two time zones.
- Suggest a way forward to resolve the issue of two zones.

2Q. "Businesses cannot be successful when the society around them fails." Analyse the need for Corporate Social Responsibility in light of the above statement. (250 words)

Approach

- Introduce your answer by giving the relationship between society and businesses.
- Mention the need for CSR.
- Conclude your answer by giving an optimistic way forward.