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GS 2 : Polity, Governance, International Relations

1. Arctic Cooperation through Climate Change

It is tempting to view the current geopolitics of the Arctic through the lenses of the 'great power competition' and inevitable conflict of interests.

Current geopolitical scenario in the Arctic: US-Russia Spat

- It is mainly viewed as the growing tensions between North Atlantic Treaty Organization (NATO) allies and Russia.
- By the end of the Cold War, the geopolitical tensions and security concerns in the Arctic were almost forgotten.
- The perceived 'harmony' was broken in 2007, when the Russian explorers planted their flag on the seabed 4,200m (13,779ft) below the North Pole to articulate Moscow's claims in the Arctic.
- This move was certainly viewed as provocative by other Arctic State.
- The regional tension increased after the Russia-Ukraine conflict in 2014.
- Consequently, relations between the U.S. and Russia reached their lowest point again.

China's vested interests in Arctic

- China, for example, with its self-proclaimed status of a 'near Arctic state', has been actively engaged in various projects across the region.
- The importance of the Arctic region for China mostly stems from its energy security issues and the need to diversify shipping lanes.

Why China focuses on Arctic?

- Transport routes from China to Europe through the Arctic are not only much shorter but also free from the challenges associated with the Malacca Strait and South China Sea.
- In the latter case, China will continue facing a backlash from many Association of Southeast Asian Nations (ASEAN) members, supported by US forces and Quad.

Impact of Climate change on Arctic

- The Arctic is warming nearly twice as fast as the rest of the planet with consecutive record-breaking warm years since 2014.
- The Arctic is likely to begin experiencing ice-free summers within the next decade, with summers likely to be completely free of sea ice by mid-century.

Conclusion

- Given the significance of the region, the Arctic will continue to draw increased attention.
- Hence, countries should refrain from mutual provocations, excessive militarisation, and quid pro quo tactics.
- All Arctic actors should have a long-term vision and strategic goals as compared to immediate short-term gains.
- Instead of creating a potential battleground that is reminiscent of the Cold War, the parties concerned should utilise their expertise and create the required synergy to achieve shared goals.
- Climate change and its dramatic consequences must be a catalyst for Arctic cooperation.

2. Delta Variant Sub-lineage AY.12

Why in News

According to a report by the **Indian SARS-CoV-2 Genomics Consortium (INSACOG)**, a new **sub-lineage AY.12 of the Delta variant of Covid-19** that was recently classified in Israel is now being **reported in many parts of India**.

- INSACOG is a **multi-laboratory, multi-agency, Pan-India network** to monitor genomic variations in the SARS-CoV-2 by a sentinel sequencing effort.

Key Points

- **About:**
 - INSACOG has pointed out that **several cases in India classified as Delta** are now being **reclassified as AY.12** and these numbers are under close watch.
 - The **reclassification is primarily to assist micro-epidemiology** and is **not based on acquisition of significant mutations**. Thus,

it is not currently known whether AY.12 is clinically different from Delta.

- While **no worrying factors have been found** linked to the **AY.12**, it has come on INSACOG's radar as it is said to be driving the **surge in Israel despite 60% vaccination in the country**.
- **Delta Variant:**
 - B.1.617.2 – also termed the **Delta variant** – is believed to **spread faster than other variants**. The Delta variant is **highly contagious, more than twice as contagious as previous variants**.
 - It has birthed several sub-lineages called '**Delta plus**' variants that **bear most of its characteristic mutations** but are **different in other ways**.
- **Reason behind Delta Variant being more Infectious:**
 - A key **amino acid mutation** may be behind the high infectivity of the Delta variant.
 - A team of researchers has zeroed in on a key mutation that alters a single amino acid in the SARS-CoV-2 spike protein.
 - The change is called P681R and transforms a proline residue into an arginine.
 - Arginine is a **chemical building block called an amino acid**.
 - Proline disrupts **protein secondary structure** by inhibiting the backbone to conform to an alpha-helix or beta-sheet conformation

Virus Variant

- **Variants of a virus** have one or more **mutations** that differentiate it from the **other variants that are in circulation**. While most mutations are deleterious for the virus, some make it easier for the virus to survive.
- The **SARS-CoV-2 (Corona) virus** is **evolving fast because of the scale at which it has infected people around the world**. High levels of circulation mean it is easier for the virus to change as it is able to replicate faster.

3. Putin, Xi agree to jointly combat 'threats'

Context:

- Coordination and collaboration between China and Russia on the Afghanistan issue.

Background:

- **Russia and China have followed a drastically different approach** to the Afghanistan issue as compared to other world powers with both countries retaining their diplomatic presence in Afghanistan even after the takeover by the Taliban and have even sought to **engage actively with the Taliban**.
- China has on several occasions expressed its keenness to deepen friendly and cooperative relations with Afghanistan under the Taliban rule.

Details:

- Russian President Vladimir Putin and his Chinese counterpart Xi Jinping have agreed to **step up efforts to counter threats emerging from Afghanistan** following the Taliban's takeover. The focus will be on efforts to **combat terrorism as well as drug trafficking** in the region.
- The two leaders have expressed interest in making the most of the **potential of the Shanghai Cooperation Organisation (SCO)** that is due to convene soon for a summit in Tajikistan.
- The discussion between the heads of China and Russia involved the importance of **establishing peace in Afghanistan and preventing the spread of instability to adjacent regions**.

4. Income and quotas

Context:

Notifications by the Haryana State government under the Haryana Backward Classes (Reservation in Services and Admission in Educational Institutions) Act of 2016 have been quashed by the Supreme Court.

- It struck down a notification fixing an annual income of ₹6 lakh as the sole criterion to identify whether a family belongs to the creamy layer.

Reservation:

- The Constitution permitted special provisions in favour of 'socially and educationally backward classes' through the First Amendment, as well as reservation in government employment for 'backward classes'.

- It empowered the state to undertake affirmative action for the advancement of any socially and economically backward classes or categories of Scheduled Castes and Scheduled Tribes by restricting the application of fundamental rights.
- Subsequent Judicial discourse (**Indra Sawhney Case**) introduced a 50% ceiling and the creamy layer concept as constitutional limitations on reservation benefits.

Issue:

- The 103rd Constitution Amendment introduced a 10% reservation for the 'economically weaker sections' (EWS).
 - This has significantly altered the affirmative action programme.
- With the current income ceiling being ₹8 lakh per annum for availing both OBC and EWS quotas, there is a strange and questionable balance between the OBC and EWS segments in terms of eligibility, even though the size of both the quotas vary.

GS 3 : Economy, Science and Technology, Environment

5. Hawaii's Kilauea Volcano

Geologists have detected a swarm of earthquakes at Hawaii's Kilauea volcano, though it was not erupting.

Kilauea Volcano

- Kilauea is about 200 miles south of Honolulu, on the Big Island of Hawaii.
- It is one of the world's most active volcanoes, having erupted 34 times since 1952. In Hawaiian tradition, Kilauea is home to the volcano goddess Pele.
- From 1983 to 2018, it erupted almost continuously, in some cases sending streams of lava that covered farms and homes.
- At the end of this decades-long eruption, Kilauea spewed lava from vents in a residential neighborhood on its eastern flank and destroyed more than 700 homes.
- In December, Kilauea erupted at the crater, creating a lake with enough lava to fill 10 Hoover dams. That eruption ended in May.

6. SUJALAM Campaign

The Ministry of Jal Shakti began 'SUJALAM', a '100 days campaign' to create more and more ODF Plus villages by undertaking wastewater management at the village level.

SUJALAM Campaign

The key activities that will be organized in the villages under this campaign include:

- Organizing Community consultations, Khuli Baithaks and Gram Sabha meetings to analyze the current situation
- Pass resolution to maintain ODF sustainability and achieve a needed number of soak pits to manage the greywater
- Develop a 100 days' plan to undertake sustainability and soak pit construction-related activities
- Construct a requisite number of soak pits
- Retrofit toilets where needed through IEC and community mobilization and
- Ensure all newly emerging Households in the village have access to toilets

Objectives of the campaign

- The effort of the campaign would be directed towards achieving the ODF plus status for villages across the country in an accelerated manner in a short time.
- The campaign will not only build desired infrastructure soak pit for management of greywater in villages but will also aid in sustainable management of water bodies.
- The disposal of wastewater and clogging of water bodies in the villages or on the outskirts of the villages remain one of the major problems.
- The Campaign would help in the management of the wastewater and in turn, would help to revive the water bodies.

7. Nano-Robots

Why in News

Recently, a group of scientists has found a way to **tackle issues pertaining to root canal treatments (dental procedures)** using nanosized robots.

- Root canal treatment is **designed to eliminate bacteria from the infected root canal**, prevent reinfection of the tooth and save the natural tooth.

Key Points

- **About the Research:**
 - A **significant percentage of root canal treatments fail**, because the **procedure leaves out some bacteria** that are located deep within the dentinal tubules.
 - In the research the scientist has found a way to **tackle this using nanosized robots** that will travel through the tubules and target the bacteria.
 - Under this method, **spiral silica nanobots** with a bit of iron embedded in them are injected in the central canal of the tooth. Then a **rotating magnetic field** is applied. This causes the **nanorobot to move - like screws move into a wall**.
 - Once the bacterial colony is reached, the **nanorobot can deploy various antibacterial strategies** one of which is localised heating.
- **Nanorobots:**
 - Nanorobotics describes the **technology of producing machines or robots at the nanoscale**.
 - 'Nanobot' is an informal term to refer to engineered nano machines.
 - Nanobots are robots that carry out a very specific function and are **~50-100 nm wide**.
 - They can be used **very effectively for drug delivery**.
 - Normally, drugs work through the entire body before they reach the disease-affected area.
 - Using nanotechnology, the drug can be **targeted to a precise location** which would make the **drug much more effective and reduce the chances of possible side effects**.
- **Uses of Nanotechnology in Health Care:**
 - **Nanotech detectors** for heart attack.
 - **Nanocarriers** for eye surgery, chemotherapy etc.
 - **Diabetic pads** for regulating blood sugar levels.
 - **Nanosponges** are polymer nanoparticles coated with a red blood cell membrane, and can be used for absorbing toxins and removing them from the bloodstream.
 - **NanoFlares** are used for detection of cancer cells in the bloodstream.
 - **Nanopores** are used in making DNA sequencing more efficient.
- **Governmental Initiatives to Promote Nanotechnology:**
 - **Nano Science and Technology Mission (NSTM):**

- NSTM, launched in 2007, is an umbrella programme that aims to promote research and development in nanotechnology.
- The objectives include the promotion of research, infrastructure development to support the research, development of nanotechnology, human resources, and international collaborations.
- **Nano Science and Technology Initiative (NSTI):**
 - It was set up by the Department of Science and Technology (DST) in 2001.
 - It aims to focus on issues related to infrastructure development, research and application programmes related to nanomaterials including drugs, drug delivery, gene targeting and DNA chips.

8. Pneumococcal Conjugate Vaccine

Why in News

Recently, the **Chief Minister of Andhra Pradesh** has launched **Pneumococcal Conjugate Vaccine (PCV)** immunisation drive for infants.

- Earlier in December 2020, **India's first fully indigenously developed pneumococcal conjugate vaccine "Pneumosil"** was launched.

Key Points

- **About:**
 - It prevents **pneumococcal disease**. It can **protect both children and adults from pneumococcal disease**.
 - The vaccine is a **mix of several bacteria of the pneumococci family**, which are known to **cause pneumonia** – hence '**conjugate**' is included in the name of the vaccine.
 - **Conjugate vaccines** are made using a combination of two different components.
- **Pneumococcal disease:**
 - **About:**
 - Pneumococcal disease is a name for any infection caused by bacteria called **Streptococcus pneumoniae or pneumococcus**. Most people carry pneumococcus in their nose and throat, where the bacteria do not cause any symptoms.
 - However, **sometimes the bacteria grow and spread to other parts of the body** and that's when people become sick.
 - **Effects:**

- These bacteria can cause many types of illnesses, including **pneumonia**, which is an **infection of the lungs**. Pneumococcal bacteria are one of the **most common causes of pneumonia**.
- Besides pneumonia, **pneumococcal bacteria can also cause:**
 - **Ear** infections.
 - **Sinus** infections.
 - **Meningitis** (infection of the tissue covering the brain and spinal cord).
 - **Bacteremia** (infection of the blood).
- Doctors consider some of these infections “invasive”. Invasive disease means that **germs invade parts of the body that are normally free from germ**.
- **Vulnerable Population:**
 - Anyone can get **pneumococcal disease**, but **children under 2 years of age**, people with certain medical conditions, **adults 65 years or older**, and **cigarette smokers** are at the highest risk.
- **Need:**
 - Pneumonia had been a major cause of **infant and child mortality**. According to the **World Health Organisation (WHO)**, pneumonia accounts for 15% of all deaths of children under 5 years.
 - It was estimated that the **disease affected around 16 lakh children and caused the death of nearly 68,700 children** across the country in the year 2015.
 - The government of India is ensuring **equitable access to those to the underprivileged and underserved** by making it available under the **Universal Immunization Program (UIP)**.
 - **Sustainable Development Goal 3** calls for an end to **preventable deaths of newborns and children under 5 years of age**. It also specifies that **all countries should aim to reduce neonatal mortality** to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live births by 2030.
 - **Neonatal mortality** is defined as death within the **first 28 days of life**.

Universal Immunization Programme

- It was launched in 1985 to **prevent mortality and morbidity in children and pregnant women** against 12 vaccine-preventable diseases.
- Under UIP, **free of cost vaccination is provided against twelve vaccine-preventable diseases** i.e. **Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Pneumonia and Meningitis due to Haemophilus Influenzae type b (Hib), Measles, Rubella, Japanese Encephalitis (JE) and Rotavirus diarrhoea**.

- The programme is one of the **largest health programmes in the world**. Despite being operational for many years, UIP has been able to **fully immunize only 65% of children under 1 year of age**.

9. It's time for Industry 4.0

The article throws light upon how the adoption of Industry 4.0 technologies can make MSMEs more efficient and competitive.

What is Industry 4.0?

- The term 'Industry 4.0' was coined by the German government in 2011.
- Industry 4.0 or the Fourth Industrial Revolution (4IR) is the ongoing automation of traditional manufacturing and industrial practices, using modern smart technology.

Significance:

- With technologies such as Additive Manufacturing, the Internet of Things, Cyber-Physical Systems, Augmented Reality/Virtual Reality and data, the manufacturing industry will be able to make data-driven decisions.
- The reduced costs of electronics like sensors, transmitters, and cloud have paved the way for the capture of the data produced during operational activities.
- With the availability of advanced algorithms, the data captured can be analysed for making real-time decision-making.
- Thus, Industry 4.0 has integrated 'data' with manufacturing and Information Technology.

To take advantage of data-driven decision-making, the governments of other countries also coined their own industrial initiatives like Industry 4.0. For example, the U.S. calls it Smart Manufacturing, China calls it Made in China 2025, and India refers to it as Make in India or Digital India.

The potential of MSMEs:

- Micro, Small and Medium Enterprises (MSMEs) are expected to become the backbone of India as the economy grows larger.
- MSMEs form more than 95% of the industries in India.
- They produce more than 45% of the total manufacturing output and employ more than 40% of the workforce.

- According to the Economic Survey 2020-21, over 6 crore MSMEs employ more than 11 crore people and contribute roughly 30% to the GDP and half of the country's export.
- MSMEs are also ancillaries to larger enterprises, leading to a seamless supply chain integration.
- As a result, making MSMEs more efficient will be advantageous for the whole economy.

Challenges faced by MSMEs w.r.t Industry 4.0:

Adoption:

- MSMEs face challenges in adopting the new technologies of Industry 4.0.

Awareness:

- They lack awareness regarding Industry 4.0 and its benefits.
- While Industry 4.0 believes in improving the existing system, MSMEs consider such technologies to be disruptive.

Finances:

- MSMEs will need to make major financial investments to adopt Industry 4.0.
- Investing in the right set of technologies will also need experts and consultants.

Lack of framework:

- The frameworks and steps that can assist MSMEs in adopting Industry 4.0 technologies have been missing.

Way Forward:

- For any new technology to be adopted, an organisation requires a positive organisational culture and the support of people.
- MSMEs need to believe in the advantages that Industry 4.0 technologies can offer.
- MSMEs need to understand the data they are producing from all their operational activities. Based on such data, their readiness to adopt 4IR technologies can be evaluated.
- MSMEs should develop their own vision of Industry 4.0 technologies that they want to adopt and identify the relevant tools and practices they need for such a tailored vision.

- Proper sensitisation of the Government of India, higher education institutions, practitioners, entrepreneurs, industrial associations, trade unions, venture capitalists, consultants and research agencies would help to speed up this task.

Conclusion:

Though adoption of Industry 4.0 technologies by MSMEs requires them to address a bunch of challenges, it will make them more competitive and prepare them to offer world-class quality products to customers. With India having joined the group of top 50 countries in the Global Innovation Index for the first time in 2020, the time is ripe for the MSMEs to embrace Industry 4.0 technologies without any hesitation.

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. Making of the Modern City of Kolkata

A 2003 judgment by the Calcutta High Court generates discussion of the city's age, its date of founding, and Job Charnock, whom many credits for having "found" the city of Calcutta.

Calcutta: Who founded the city?

Nobody.

- A place then called Kalikatah was an important religious centre due to the existence of the Kali temple in the adjacent village of Kalighat.
- The first literary reference to the site is found in Bipradas Pipilai's magnum opus Manasa Mangala which dates back to 1495.
- Abul Fazl's Ain-I-Akbari dating 1596 also mentions the place.
- The Sabarna Roy Choudhury family was granted the Jagirdari of Kalikatah by Emperor Jehangir in 1608.

Who was Job Charnock?

- Job Charnock (1630–1693) was an English administrator with the East India Company.

- He was once regarded as the founder of the city of Kolkata (formerly Calcutta).
- However, this view is challenged, and in 2003 the Calcutta High Court declared that he ought not to be regarded as the founder.
- Charnock was entrusted with procuring the Company's saltpetre and appointed to the centre of the trade, Patna in Bihar in 1659.

Beginning of Urbanization

- The establishment of the Government House in 1767 and the Lottery Commission in 1817 were the other important developments in the city's history that gave its urban landscape more defined contours.
- This commission was entirely responsible for the setting up of the city's roads, streets and lanes.
- Some markers of urban settlements include planned roads, water supply and transport.
- The establishment of these in the early 19th century was responsible for making Calcutta the great city that it eventually became.

Significance of Kolkata

One of the most significant developments that gave the city a semblance of urban formation occurred in 1756 when the Nawab of Bengal Siraj ud-Daulah lay siege to Calcutta.

- This was in retaliation for the British East India Company engaging in unauthorized development of the structure that is now known as Fort William.
- The East India Company was defeated in a decisive battle, making them realise the vulnerability of the fort.
- Post 1757 the fort was remade and fortified with enhanced protection, the construction was exceptionally well done.
- It was really this attack on Fort William, a bastion of the British and other Europeans living there, that changed the map of Calcutta.
- The Europeans who used to primarily lived inside the fort – the European merchants, the administrators etc – started moving out.
- They knew that if there was an attack, there was infrastructure to save them. That was European Calcutta, what we call 'White Town'.

2. 37th Pragati Meeting

Why in News

Recently, the Prime Minister (PM) chaired the 37th edition of **Pro-Active Governance And Timely Implementation (PRAGATI)** - the Information and Communication Technology (ICT) based multimodal platform, involving Central and State governments.

- The PM reviewed various **projects worth Rs 1,26,000 crores** along with the **'One Nation - One Ration Card' (ONORC) scheme**.
- The ONORC scheme **aims at providing subsidised food grains to migrant workers and their family members at any fair price shop anywhere in the country** under the **National Food Security Act, 2013**.

Key Points

- **About:**
 - Launched in 2015.
 - It has been designed by the Prime Minister's Office (PMO) team with the help of the **National Informatics Center (NIC)**.
 - It enables the PM to discuss the issues with the concerned central and state officials with full information and latest visuals of the ground-level situation.
 - The PRAGATI platform uniquely bundles three latest technologies: **Digital data management, video-conferencing and geo-spatial technology**.
 - It is a **three-tier system** (PMO, Union Government Secretaries, and Chief Secretaries of the States).
- **Objective:**
 - Grievance Redressal.
 - Programme Implementation.
 - Project Monitoring.
- **Significance:**
 - It promotes **Cooperative Federalism** as it brings together the Secretaries of Government of India and the Chief Secretaries of the States.
 - It is a robust system for bringing e-transparency and e-accountability with real-time presence and exchange among the key stakeholders.
 - It is an innovative project in **e-Governance** and **Good Governance**.
- **Concerns:**
 - The direct interaction of the PM with the state secretaries without involving the political executives of the states is undermining the state political executive.

- It is also said that this is leading to a concentration of power in the extra-constitutional office of PMO.

3. India-Netherlands Relations

Why in News

Recently, India and Netherlands reviewed bilateral cooperation in Science and Technology and Innovation.

Key Points

- **Highlights of the Meeting:**
 - India **emphasized that the trinity of Health, Agriculture and Water** are bedrock of close mutual collaboration between the two nations.
 - Netherlands proposed to work together in the area of **Green Hydrogen and ocean sciences**.
 - Both countries agreed to support joint research and development regarding **Smart Energy Grids, Big Data and Internet of Things**.
 - India invited Netherlands for exchanges in the Space sector particularly in the wake of path-breaking reforms initiated by India in the recent past **allowing the private sector to have a level playing field** in satellite launches and space based activities.
 - Both countries also flagged future collaboration in **Solar Energy, Gas-based installations, Cyber Security, Data Science, Urban Water System and emerging areas**, which will create jobs for people in India.
 - **Climate Change** as a key area of concern for the entire World was also highlighted.

Note

- The Government of India, on the occasion of Independence day, announced the **National Hydrogen Mission** to make **India a Global Hub for Green Hydrogen Production and Export**.
- Also, the **Ministry of Earth Sciences** has recently launched the **Deep Ocean Mission**, with a view to explore the deep ocean for resources and develop deep-sea technologies for sustainable use of ocean resources.
- **India-Netherlands Relations:**
 - **Economic and Trade:** The Netherlands is the **sixth largest contributor of foreign investment into India** in FY 2021.
 - The Netherlands is **India's 5th largest trading partner** in the **European Union**. It is also one of the leading investor nations in India.

- **Historical Relations:** Indo-Dutch relations can be traced back to more than 400 years when the first Dutch EIC (East India Company) was established in India (in around 17th century AD).
 - The official relations between the two nations were established in the year 1947 which, since then, have been cordial and friendly.
 - The two countries also share **common ideals of democracy, pluralism and the rule of law.**
- **Cultural Relations:** The Netherlands currently is home to the largest Indian community on the European mainland.
 - An Indian Council for Cultural Relations (ICCR) Cultural Centre "The Gandhi Centre" was established in The Hague in October 2011.
- **Cooperation in Science & Technology:** The Netherlands Organization for Scientific Research (NWO) collaborates with the various departments in the Indian Government.
 - For instance, there is an ongoing project titled "**Local Treatment of Urban Sewage Streams for Healthy Reuse (LOTUS-HR)**".
 - The LOTUS-HR project is an India-Netherlands joint collaboration of universities and companies funded by the India's Department of Biotechnology and the Dutch NWO-TTW.
- **Collaboration in Water Management:**
 - A platform called **Dutch Indo Water Alliance Leadership Initiative (DIWALI)** has been developed in which India and Netherlands could participate in designing solutions for water challenges.
- **Collaboration in Agriculture:** Agriculture is one of the core sectors identified by the Netherlands for enhancing bilateral cooperation with India.
 - The **5th Joint Agriculture Working Group (JAWG)** meeting on Agriculture took place in New Delhi in 2018.
 - Under the JAWG, an Action Plan was signed which envisages cooperation in establishing **Centres of Excellence (CoE)** in horticulture, animal husbandry & dairy, fisheries and food processing.
 - This is also accompanied by **skill development & capacity building** in the fields of cold chain, supply chain management etc.
- **Healthcare Cooperation:**
 - An MoU for Cooperation in the Field of Healthcare and Public Health was signed in January 2014 to promote greater research collaboration in emerging health challenges associated with **communicable diseases and antimicrobial resistance.**

4. Security Threats Emanating from Afghanistan

Why in News

Recently, India engaged with the heads of the **government of Russia and Germany**, after the **restoration of Taliban rule in Afghanistan**. Stability in Afghanistan is linked to the peace and security of the region and India is no exception.

- **Russia showed interest in working with India bilaterally, multilaterally** at the **UNSC**, and at other fora like **SCO** and **BRICS**, despite the differences between India and China on the Afghanistan issue, and on the role of Pakistan in facilitating the Taliban.

Key Points

- **Coming Back of Taliban Rule in Afghanistan:**
 - In 2020, the **US signed a deal (at Qatar's capital-Doha) with the Taliban** that envisaged a full withdrawal of foreign soldiers from Afghanistan.
 - However, the major flaw in that agreement was that it **excluded the Afghan government**.
 - Further, Taliban do not see the democratic government as legitimate ruler and they don't believe in the Constitution, rule of law, or democracy.
 - Hence, immediately after the US troops withdrawal, Taliban seized major cities including capital Kabul in Afghanistan.
 - This has raised various **concerns regarding cross-border terrorism, humanitarian crisis, and new geopolitical order**.
- **Threats for India Emanating from Afghanistan:**
 - **Cross-Border Terrorism:** India is worried over the issue of cross-border terrorism, which can now rise after coming back of Taliban rule.
 - Groups such as the **Lashkar-e-Taiba and Jaish-e-Mohammed** which have close affinity with Taliban and enjoy Pakistan's support, threaten regional peace and security.
 - **Religious Fundamentalism:** Like all radical groups, the Taliban will have trouble balancing its religious ideology with the imperatives of state interests.
 - Here, India faces a challenge to deradicalise the region for long lasting peace and stability.
 - **New Regional Geopolitical Developments:** There can be formation of new regional geopolitical axis between China-Pakistan-Taliban, which may go against the interests of India.

- **Economic Losses:** Coming back of Taliban will jeopardise **India's investment in Afghanistan**. It will also hamper connectivity projects to Central Asia via Afghanistan.
 - For example, **Chabahar Port, International North South Transport Corridor (INSTC), TAPI Pipeline**.
- **India's Diplomatic Engagement Regarding Afghanistan:**
 - Recently, India's **National Security Advisor** chaired a meeting of the NSAs of the **BRICS countries (Brazil-Russia-India-China-South Africa)**.
 - The meeting also adopted and recommended the BRICS Counter Terrorism Action Plan for consideration by the BRICS Summit.
 - The Action Plan aims to further strengthen existing mechanisms of cooperation in areas such as:
 - Financing and combating terrorism,
 - Misuse of the Internet by terrorists,
 - Curbing travel of terrorists,
 - Border controls,
 - Capacity building,
 - Regional and international cooperation.
 - At the 31st special session of the **UN Human Rights Council**, India raised various concerns over the serious human rights concerns and situation in Afghanistan.

Way Forward

- **Engaging with the Taliban:** Talking to Taliban would allow India to seek security guarantees from the insurgents in return for continued development assistance.
 - India can also persuade the Taliban to explore the possibility of its autonomy from Pakistan.
- **Fighting Global Terrorism:** There is a need for the global community to fight against the global concern of terrorism.
 - In this context, it high time to adopt the **Comprehensive Convention on International Terrorism** (proposed by India at UN in 1996).
- **Regional Cooperation:** With the resurgence of Taliban, there is a convergence of interests between India and three key regional players – China, Russia and Iran – in seeing a political settlement in Afghanistan.
 - Thus, there is a need for cooperation from like minded countries on this front.

GS 3 : Economy, Science and Technology, Environment

5. Mandatory rice fortification policy should be re-examined

Context

To deal with the high prevalence of anaemia, the government has been pursuing the policy of food fortification with iron. This policy needs a rethink.

Rice-fortification policy

- There are high levels of anaemia in India, affecting women and children equally.
- This is despite the corrective measures like mandatory **supplementation of iron tablets** through **Anaemia Mukh Bharat programme** of pharmaceutical iron supplementation.
- To deal with the issue, the government has decided on **compulsory rice fortification** in safety-net feeding programmes like the ICDS, PDS and school mid-day meals.
- This was announced by the Prime Minister in his recent Independence Day address to the nation.
- The mandatory rice fortification programme is being piloted in some districts already.
- Food fortification is considered attractive as it requires no behavioural modification by the beneficiary.

Why iron fortification policy needs re-examination?

1) Over-estimation of anaemia burden

- **High WHO cutoff for Hg levels:** WHO haemoglobin cut-offs are used to diagnose anaemia in India.
- There is a growing global consensus that these may be too high.
- A recent Lancet paper suggested a lower haemoglobin cut-off level to diagnose anaemia in Indian children.
- Using this will actually **reduce the anaemia burden by two-thirds**.
- **Capillary Vs venous blood sample:** Haemoglobin level can be falsely low when a capillary blood sample (taken by finger-prick) is used for measurement, instead of the more reliable venous blood sample (taken with a syringe from an arm vein). The anaemia burden in India is estimated from capillary blood, which inflates the anaemia burden substantially.
- If the recommended venous blood sample is used, it would halve this burden.

- There is, thus, a **significant overestimation of anaemia burden**.

2) Other nutrients and protein intake

- A MoHFW national survey (Comprehensive National Nutrition Survey) of Indian children showed that iron deficiency was **related to less than half the anaemia cases**.
- Many other nutrients and adequate protein intake are also important, for which a good diverse diet is required.

3) Iron requirement over-estimated

- The idea for iron fortification comes from the premise that a normal Indian diet cannot possibly meet an individual's daily iron requirement.
- This is wrong thinking, and is based on older iron requirements (as per National Institute of Nutrition [NIN] 2010), which were much too high.
- The **latest corrected iron requirements** (NIN 2020) are 30-40 per cent lower.
- The iron density of the Indian vegetarian diet, about 9 mg/1000 kCal, can thus meet most requirements.

4) Challenges in rice fortification

- Rice fortification is very complex.
- It requires a fortified rice "kernel" or grain that is composed of rice flour paste, along with the required concentration of micronutrients and binders, extruded into a grain that exactly matches the shape of the rice it is intended to fortify.
- The problem lies in making "matching" kernels for each rice cultivar that is distributed in the food safety-net programmes from year to year and state to state.
- If it does not match, the instinct of a home cook will be to pick out and discard the odd grains, thereby defeating the purpose of fortification.

Risks involved

- Ingesting fortified salt (two teaspoons, 10 g/day) or rice (quarter kilo/day) will deliver an additional 10 mg iron/day each to the diet.
- When the iron intake exceeds 40 mg/day, **the risk of toxicity goes up**.
- The **unabsorbed iron** that remains in the gut can wreak havoc among the beneficial bacteria in the large intestine.
- **Iron causes oxidative stress**, and more seriously, is implicated in diabetes and cancer risk. Men will also be more at risk.

Way forward

- We just need to absorb the existing dietary iron better and complement this with all the other nutrients that are required, by eating a diverse diet (with fruits and vegetables, for example), and improving our environment.
- Indeed, it is well-known that the benefits derived from the nutrients in whole foods are greater than the sum of their parts.

Conclusion

We need to rethink our reductionist strategies if we are to deliver food and nutrition security to our people.

6. The dangers of India's palm oil push

Context

On August 15, Prime Minister Narendra Modi announced a support of Rs 11,000 crore to incentivise oil palm production.

National Mission on Edible Oils and Oil Palm (NMEO-OP)

- Under NMEO-OP, the government intends to bring an additional **6.5 lakh hectares under oil palm cultivation**.
- The agro-business industry has said the move will help its growth and **reduce the country's dependence on palm oil imports**, especially from Indonesia and Malaysia.
- Indonesia has emerged as a significant palm oil hub in the last decade and has overtaken Malaysia.
- The two countries produce **80 per cent of global oil palm**.
- Indonesia exports more than 80 per cent of its production.

Reducing the import dependence

- India imported **18.41 million tonnes of vegetable oil in 2018**.
- **The National Mission on Oilseeds and Oil Palm** are part of the government's efforts to reduce the dependence on vegetable oil production.
- The **Yellow Revolution of the 1990s** led to a rise in oilseeds production.
- Though there has been a continuous increase in the production of diverse oilseeds – groundnut, rapeseed and mustard, soybean – **that has not matched the increasing demand**.

- Most of these oilseeds are grown in **rain-fed agriculture areas** of Gujarat, Andhra Pradesh, Haryana, Karnataka, Rajasthan, Madhya Pradesh, Tamil Nadu and Uttar Pradesh.

Issues with oil palm cultivation in India

- **Impact on biodiversity:** Studies on agrarian change in Southeast Asia have shown that increasing oil palm plantations is a major reason for the **region's declining biodiversity**.
- The Northeast is recognised as the home of around 850 bird species, it is also home to citrus fruits, it is rich in medicinal plants and harbours rare plants and herbs.
- Above all, it has 51 types of forests.
- Studies conducted by the government have also highlighted the Northeast's rich biodiversity.
- The palm oil policy could destroy this richness of the region.
- To preserve the environment and biodiversity, Indonesia and Sri Lanka have already started putting **restrictions on palm tree plantation**.
- **Water pollution:** Along with adversely impacting the country's biodiversity, it has led to increasing water pollution.
- **Climate change:** The decreasing forest cover has significant implications with respect to increasing carbon emission levels and contributing to climate change.
- **Against the notion of self-reliance:** Such initiatives are also against the notion of community self-reliance:
- The initial state support for such a crop results in a major and **quick shift in the existing cropping pattern** that are not always in sync with the agro-ecological conditions and food requirements of the region.
- **Against commitment to sustainable agriculture:** The policy also contradicts the government's commitments under the National Mission for Sustainable Agriculture.
- The mission aims at "Making agriculture more productive, sustainable, remunerative and climate resilient by promoting location specific integrated/composite farming systems."
- The palm oil mission, instead, aims at achieving complete transformation of the farming system of Northeast India.
- Studies also show that in case of variations in global palm oil prices, households dependent on palm oil cultivation become vulnerable.

Conclusion

Similar environmental and political outcomes cannot be ruled out in India. Apart from the possible hazardous impacts in Northeast India, such trends could have

negative implications on farmer incomes, health, and food security in other parts of the country in the long run.

Prelims Practice Questions

1. Which of the given statements with respect to Lebanon is/are INCORRECT?

1. It opens out to the Mediterranean Sea to the West.
2. It borders Israel, Syria and Jordan.
3. It touches the West Bank area.

Options:

- a. 1 only
- b. 2 and 3 only
- c. 1 and 2 only
- d. None of the above

Answer: b

Explanation:

- Lebanon opens out to the Mediterranean Sea to the West.
- It borders Israel and Syria and not Jordan. It does not border the West Bank area, it is Jordan that borders the West Bank area.

2. Consider the following statements:

1. Sree Narayana Guru was the proponent of Advaita Vedanta.
2. Sree Narayana Guru provided the impetus for Vaikom agitation which was aimed at temple entry for lower castes.

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

- **Sree Narayana Guru** became one of the greatest proponents and re-evaluators of **Advaita Vedanta**, the principle of non-duality put forward by Adi Shankara. **Hence, statement 1 is correct.**
- He wrote various books in different languages. Few of them are: Advaita Deepika, Asrama, Thevarappathinkangal, etc.
- **Contribution to National Movement:**
 - **Against the Societal ills:**
 - A remarkable social reformer, he was in the forefront of the movement for universal temple entry and against the societal ills like the social discrimination of untouchables.
 - **Impetus for Vaikom Agitation:**
 - He provided the **impetus for Vaikom agitation** which was **aimed at temple entry in Travancore for the lower castes**. It drew nationwide attention and appreciation from **Mahatma Gandhi**. **Hence, statement 2 is correct.**
 - **Unity through his Poems:**
 - He captured the essence of Indianness in his poems which highlighted the unity that lies beneath the world's apparent diversity.
- **Contribution to Science:**
 - Emphasized the practice of ideals of cleanliness, promotion of education, agriculture, trade, handicrafts and technical training.
 - His **Adyaropa darsanam (Darsanamala)** explains the creation of the universe.
 - **Daivadasakam and Atmopadesa satakam** are a few examples of how the mystic reflections and insights closely resemble recent advances in physics.

3. In the efforts to meet the goals of the Paris Agreement, the 'Climate Action and Finance Mobilization Dialogue' (CAFMD) is a part of the partnership between India and

- a. European Union
- b. United Kingdom
- c. United States of America
- d. Australia

Answer: c

Explanation:

- Union Minister of Environment of India recently held a conversation with U.S. Special Presidential Envoy for Climate (SPEC), Mr. John Kerry, to discuss Climate Action and Finance Mobilization Dialogue (CAFMD) Track under India-US Climate and Clean Energy Agenda 2030 Partnership.
- This partnership is expected to mobilize finance and speed clean energy deployment.

4. Which of the following products of West Bengal is awarded the Geographical Indication (GI) tag?

1. Madur Floor Mats
2. Wooden Mask of Kushmandi
3. Purulia Chhau Mask
4. Gobindobhog Rice

Select the correct answer using the code given below:

- A 1 and 2 only
- B 2 and 3 only
- C 1 and 4 only
- D 1, 2, 3 and 4

Answer : D

Explanation

- **Madur Floor Mats** is an intrinsic part of the Bengali lifestyle, **Madur mats or Madhurkathi are made of natural fibres.**
 - It was awarded the **Geographical Indication (GI) tag** by the GI Registry in April 2018.
 - It is a **rhizome-based plant** (*Cyperus tegetum* or *Cyperus pangorei*) found abundantly in the alluvial tracts of Purba and Paschim Medinipur of West Bengal.
- **Other Items with GI Tags From Bengal:**
 - **Wooden Mask of Kushmandi, Purulia Chhau Mask, Gobindobhog Rice, Tulaipanji Rice, Bengal Patachitra, Darjeeling Tea, etc**
- **Hence, option D is correct.**

5. With reference to National Monetisation Pipeline (NMP), consider the following statements:

1. The assets of the central and state government public sector undertakings will be divested.
2. It envisages asset monetisation of greenfield projects.

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 : D

Explanation

- The National Monetisation Pipeline (NMP) **estimates an aggregate monetisation potential of Rs 6 lakh crores through core assets of the Central Government, over a four-year period, from FY 2022 to FY 2025.**
 - The plan is in line with **Prime Minister's strategic divestment policy**, under which the government will retain a presence in only a few identified areas with the rest tapping the private sector. **Hence, statement 1 is not correct.**
- It aims to unlock value in **brownfield projects** by engaging the private sector, transferring them revenue rights and not ownership in the projects, and using the funds generated for infrastructure creation across the country. **Hence, statement 2 is not correct.**

6. Consider the following statements:

1. Tianhe is China's own space station module in lower earth orbit.
2. China is the third country to carry out a manned mission on its own.

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

- The Shenzhou-12 craft connected with the Tianhe space station module from the Jiuquan launch center in Gobi Desert.
 - **Tianhe core module** is the first module to the Tiangong space station. It was launched into orbit on 29 April 2021. **Hence, statement 1 is correct.**
- China is the **third country** after the former Soviet Union and the United States to carry out a manned mission on its own. **Hence, statement 2 is correct.**
- China is **not a participant in the International Space Station (ISS)**, largely as a result of US objections to the Chinese program's secrecy and close military ties.
 - The ISS is a joint project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and b (Canada).

Mains Practice Questions

1. According to the World Bank, one in every 12 households in India has a person living with a disability. In the light of this statement, discuss the steps taken by

the government to protect the rights of disabled in India. Also, highlight the shortcomings of these measures. (150 words).

Approach

- Introduce by enlisting percentage of population with disability in India
- Mention te schemes, policies, steps that government has taken to address concerns of disabled persons
- Discuss the challenges remaining

2. The Green Revolution and consequent increase in agriculture produce has worked to the disadvantage of farmers. Critically analyse. (250 words)

Introduction

- A large increase in crop production in developing countries achieved by the use of artificial fertilizers, pesticides, and high-yield crop varieties is referred to as Green revolution.
- To increase global food supply and reduce world hunger, farmers started to cultivate land using new farming techniques. These methods worked, crop yields climbed but also created a few unwanted side effects.