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GS 2 : Polity, Governance, International Relations

1. UN confers Observer Status on International Solar Alliance (ISA)

The UN General Assembly has conferred Observer Status to the International Solar Alliance (ISA).

Significance of 'Observer' Status

- Observer status is a privilege granted by some organizations to non-members to give them the ability to participate in the organization's activities.
- It is often granted by intergovernmental organizations (IGO) to non-member parties and international nongovernmental organizations (INGO) that have an interest in the IGO's activities.
- Observers generally have a limited ability to participate in the IGO, lacking the ability to vote or propose resolutions.

About International Solar Alliance (ISA)

Hq: Gurugram, India

- The ISA is an alliance of more than 121 countries, most of them being sunshine countries, which lie either completely or partly between the Tropic of Cancer and the Tropic of Capricorn.
- The primary objective of the alliance is to work for efficient exploitation of solar energy to reduce dependence on fossil fuels.
- The alliance is a treaty-based inter-governmental organization.
- The initiative was launched by PM Modi at the India Africa Summit and a meeting of member countries ahead of the 2015 United Nations Climate Change Conference in Paris in November 2015.
- A total of 80 countries have signed and ratified the ISA Framework Agreement and 101 countries have only signed the agreement.

Objectives of the ISA

- **To mobilize investments** of more than USD 1000 billion by 2030
- **To take coordinated action** for better harmonization, aggregation of demand, risk and resources, for promoting solar finance, solar technologies, innovation, R&D, capacity building etc.

- **Reduce the cost of finance** to increase investments in solar energy in member countries
- **Scale up applications** of solar technologies in member countries
- **Facilitate collaborative research and development (R&D)** activities in solar energy technologies among member countries
- **Promote a common cyber platform** for networking, cooperation and exchange of ideas among member countries

What does ISA formation signify?

- **Climate action commitment:** It symbolizes about the sincerity of the developing nations towards their concern about climate change and to switch to a low-carbon growth path.
- **Clean energy:** India's pledge to the Paris summit offered to bring 40% of its electricity generation capacity from non-fossil sources (renewable, large hydro, and nuclear) by 2030.
- **Global electrification:** India has pledged to let solar energy reach to the most unconnected villages and communities and also towards creating a clean planet.
- **Global cooperation:** It is based on world cooperation irrespective of global boundaries.
- **India's Soft power:** For India, possible additional benefits from the alliance can be a strengthening of ties with the major African countries and increasing goodwill for India among them.

2. Pradhan Mantri Garib Kalyan Anna Yojana:

The Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) comes to an end in November 2021.

- Food Secretary has stated that there were **no plans to extend the scheme beyond November**, as the government feels that the economy is reviving and there is no further need for the support scheme.

Pradhan Mantri Garib Kalyan Anna Yojana:

- The Pradhan Mantri Garib Kalyan Anna Yojana was started as part of the Centre's initial COVID-19 relief package announced at the onset of the first wave of the COVID-19 pandemic in March 2020.
- The scheme **provides 5 kg of rice or wheat every month to be distributed free of cost to each of the 80-crore beneficiaries of the National Food**

Security Act (NFSA). This is over and above the 5 kg already provided to ration card holders at a subsidised rate.

- The scheme **only provided grains for those families who held ration cards.**
- Initially, one kg of pulses was also provided under the scheme, which was later discontinued.
- The scheme was initially meant to run from April to June 2020, but has since been extended.
- Recognizing the difficulty being faced by migrant workers and people without ration cards, in May and June 2020, the Centre allocated 8 lakh tonnes of foodgrains to be distributed by the States under the **Atma Nirbhar Bharat scheme for stranded migrants and others without ration cards.**

Arguments for extension of PMGKAY:

- The Right to Food Campaign points out the **record levels of unemployment and widespread hunger among vulnerable communities** and their dire need for support from the state.
- They also point out that the Union Government has **sufficient grain stocks** to extend the scheme.
 - In the last few years, foodgrains have been produced at record levels and the government procurement from farmers at minimum support prices has also been on the rise implying sufficient food stocks with the Food Corporation of India (FCI).
- They also point out to the **SC judgment in the suo moto case on the plight of migrant workers**, where the SC had directed the Centre and the States to provide foodgrains to mitigate the impact of the pandemic.

Demand by the food rights activists:

- The Right to Food Campaign has called on the government to **extend PMGKAY for another six months and also universalise the Public Distribution System (PDS) itself.**
- They have also suggested that pulses and cooking oils be added to the monthly entitlements.

3. Xi warns against Cold War in Asia-Pacific

- Speaking at the sidelines of the **annual summit of the Asia-Pacific Economic Cooperation (APEC) forum**, the Chinese President has warned against letting tensions in the Asia-Pacific region cause a relapse into a Cold War mentality.

Tensions in the Asia-Pacific region:

- **China claims vast parts of the South China Sea** and other areas and has moved to establish a **military presence and are even building islands in some disputed areas**. This has been criticized by other regional nations as well as countries like the U.S. which have pointed out the increasing assertiveness of China in the region.
- The U.S. and its allies have undertaken **freedom of navigation exercises** in the South China Sea to counter China's claims.
- The **Indo-Pacific region has assumed great significance in the United States' foreign policy calculus as its tensions with China have only grown**.
- In what is being considered as a move against increasing Chinese assertiveness, the U.S., Britain and Australia announced a new security alliance in the Asia-Pacific region which would see Australia build nuclear submarines with the support of the U.S. and U.K. China had criticised the **new trilateral security partnership (called AUKUS)** and had cautioned that the new pact would undermine regional peace and stability and "intensify" an arms race and undermine international non-proliferation efforts.
- Many of the countries in Asia have been trying to balance Chinese and U.S. influences on the economic and geopolitical fronts.

Details:

- The Chinese President in what could be considered as a reference to the U.S. efforts to isolate China in the region has stated that attempts to draw **boundaries in the region along ideological or geopolitical lines** would fail.
- He warned that such efforts should be abandoned given that it could **push the region into confrontation and division** as observed in the Cold War era.
- The Chinese President stated that instead, the countries should **focus on liberalising trade and investment** which could provide much-needed impetus to economic growth and development in the post-pandemic phase.

Asia-Pacific Economic Cooperation

- The Asia-Pacific Economic Cooperation (APEC) is an **inter-governmental forum for 21 member economies in the Pacific Rim** that promotes free trade throughout the Asia-Pacific region.
- The APEC started in 1989 and is **headquartered in Singapore**.
- APEC is recognized as one of the highest-level multilateral blocs and oldest forums in the Asia-Pacific region.
- APEC members account for nearly 3 billion people and about 60% of the world's GDP. Its members include the **U.S., China, Taiwan, Russia, and Australia** among others.
 - Note: **India is not a member of the APEC** and it has been trying to get the membership of APEC.

4. A tax burden that attacks the federal rights of States

- The Government reduced excise duty on petrol and diesel on the eve of Deepavali. This reduction for petrol was ₹5 and duty on diesel came down by 10.
- Constitution permits the use of Cess and Surcharge to meet an extraordinary situation.
- The surcharge is an additional charge or tax over and above the existing tax while the cess is a form of tax levied by the government on tax with a specific purpose. Article 270 of the Constitution describes a Cess and Surcharge is dealt with under Article 271 of the Constitution.

Concerns

- Some states have been critical of the Centre's usage of these provisions. For example, the Centre has been levying around ₹31 and ₹33 as additional cess on petrol and diesel, respectively, till the beginning of November.
- They highlight that in some cases, they are manifold higher than the basic taxes which is a misuse of the provisions of the Constitution.
- Since these additional charges are not part of the divisible pool, it undermines the fiscal federalism as enumerated in the Constitution and the autonomy of the states.
- Article 271 which was supposed to be used as a saving clause is being misused by the Centre.

Revenue Data

- According to the data released by Petroleum Planning and Analysis Cell (PPAC), the Centre has collected around ₹3.72 lakh crore in 2020-21 as revenue from petroleum products. Of this, only around ₹18,000 crores are collected as Basic Excise Duty. Around ₹2.3 lakh crore is collected as cess and the rest ₹1.2 lakh crore is collected as special additional excise duty.
 - The divisible pool of 41% as decided by the Finance Commission applies only to the ₹18,000 crores.
- Even after the implementation of GST, States had retained the right to decide on the taxes on petroleum products and alcohol. With the usage of these additional taxes, the Centre has been unilaterally taking away the tax revenues which should be shared with the states.
- The need to alleviate the stress caused by the pandemic has increased the financial burden on the States. States need assistance to offer financial and social security to people.

Relevance of RNR

- A key aspect of GST implementation was that it would be a revenue-neutral rate (RNR) to ensure that the State's revenues would not be diminished.
- Pre-GST, the average tax on goods was 16%. It is 11.3% at present. States are criticising that most essential items are more expensive than the pre-GST price and that the reforms have not benefited the consumers.
- States would have received at least ₹3-lakh crore additionally if the pre-GST rates were maintained. A detailed study must be conducted on why the States are losing their revenue streams.
- States are also apprehensive about the National Monetisation Pipeline and other neoliberal policies due to the mistrust which is increasing.

Entities that Gain

- The initiatives to aid the recovery process post COVID such as the reductions in corporate tax have increased the revenue shortages for the Centre and hence the States. The Centre, in turn, has been compensating for this by charging additional taxes on petrol and diesel.

Conclusion:

- The Centre should communicate and alleviate the concerns of the states to ensure that the principles of fiscal federalism are respected and taxes are decided democratically for States or the Country to thrive.

5. Jairam moves privilege motion against Minister

Privilege motion:

- **Parliamentary privileges** are certain rights and immunities enjoyed by members of Parliament, individually and collectively, so that they can “effectively discharge their functions”. When any of these rights and immunities are disregarded, the offence is called a **breach of privilege and is punishable under law of Parliament**.
- A notice is moved in the form of a motion by any member of either House against those being held guilty of breach of privilege.
- Each House **also claims the right to punish as contempt actions** which, while not breach of any specific privilege, are **offences against its authority and dignity**.

Privilege Committees:

- In the **Lok Sabha**, the Speaker nominates a committee of privileges consisting of **15 members as per respective party strengths**.
- In the **Rajya Sabha**, the **deputy chairperson heads the committee of privileges, which consists of 10 members**.

Context:

- An opposition leader in the Rajya Sabha has moved a privilege motion against the serving Culture Minister over the appointment of the Chairperson of the National Monuments Authority.
- The privilege motion argues that the person appointed to the post was not qualified to hold the post as the person does not meet the requirements for the post as specified by Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010 passed by Parliament.
- The privilege motion against the Union Minister of Culture is **for willfully disregarding the provisions of a law passed by the Parliament**.

GS 3 : Economy, Science and Technology, Environment

6. India seeks \$1 tn in 'climate finance' to meet its targets

Background:

- India had committed to **new climate action goals** at the ongoing COP26 climate agreement negotiations in Glasgow.
- India's new climate action goals are based on a **five-fold plan aimed at reducing the carbon intensity of the economy and achieving net zero subsequently.**

Details:

- **India has demanded a trillion dollars over the next decade from developed countries** as a condition for delivering on its new climate commitments.
- Hence India has indicated that its **NDCs (Nationally Determined Contribution) are conditional.**
 - NDCs are voluntary targets that countries set for themselves, which describe the quantum and kind of emission cuts they will undertake over a fixed period to contribute to global climate action. NDCs can be submitted with conditions.
 - Notably, **India has not submitted its revised NDCs** as yet though nations were expected to provide updated NDCs before the beginning of COP26.
 - India's last NDC was submitted following the 2015 Paris deal.
- The Indian Prime Minister while announcing the new climate action goals for India had called on rich developed countries to **provide at least \$1 trillion in climate finance annually to assist developing and vulnerable countries.**
 - Notably, the developed countries, as a group, have **failed to provide \$100 billion annually by 2020, as agreed in COP15, 2009.**

7. The lowdown on India's Glasgow announcement

- Prime Minister's ambitious declarations at the COP 26 Climate Summit in Glasgow, Scotland have received a muted response from the international community. While in India, climate analysts have praised the new development approach catering to the needs of sustainability, international commentators have criticised India's Net Zero emissions trajectory by 2070 instead of 2050.

Persistent Trend

- The Policy elaborated at Glasgow is in line with India's consistent support and consensus prevailing since the COP 21 in Paris.

- India put out a statement that we need to grow rapidly to meet the aspiration of a 1.25 billion population, and out of this, 300 million people are without access to energy.
- Yet despite the growing demands, India has pledged to reduce emissions intensity per unit GDP by 33-35% of 2005 levels.
- Aiming to reach 40% of installed capacity from non-fossil fuels.
- Targeting 175 GW of renewable energy generation by 2022.
- Planning to enlarge forest cover to absorb 2.5 billion tonnes worth of carbon dioxide.
- This change was in contrast to the long-held position that India was still a developing country and not responsible for the historical emissions. Consequently, it was not obliged to cut emissions.
- India's pledge at Glasgow adheres to the need to tackle escalating climate crises as enunciated in the Paris Agreement.
- However, there are contradictory signals from the Government at COP 26 and the recently concluded G20 summit in Rome.
 - Officials were proclaiming the unacceptability of net-zero and the unlikelihood of higher targets by India at Rome.
 - Senior officials at Glasgow have stated that the commitments are contingent on financial assistance from developed countries.
- India could have communicated the insufficiency of the pledges of the developed countries and could have worked to extract more significant emission cuts from them.

The Substance

- India's new targets comprise five elements which the Prime Minister called Panchamrit.
 - Reduction of Emissions Intensity (EI), or emissions per unit of GDP, by 45% in 2030 relative to 2005 levels.
 - From now to 2030, the projected carbon emissions to be reduced by one billion tonnes.
 - 500 GW of installed renewable generation capacity by 2030.
 - 50% electricity generation from renewable sources by 2030.
 - Net-zero emissions by 2070.
- India's submissions of NDCs show a steady decline of emission intensity of 2% p.a. from 2005 onwards which is achievable and on par with the capacity of an emerging country.
- India's current annual emissions are around 2.8 billion tonnes and are projected to reach about 4.5 billion tonnes in 2030. Hence the commitments at Glasgow would need a substantial 20% reduction. PM also announced the Railways' net-zero 2030 target cutting 60 million tonnes annually, and LED bulbs cutting another 40 million tonnes a year over the next decade.

- On the power generation capacity, India has added around 101 GW of solar and wind energy against the target of 175 GW commitment at Paris. The Central Electricity Authority (CEA) in its 2020 Report on Energy Mix for 2029-30 has projected around 525 GW or 64.3% non-fossil fuel installed capacity including 280 GW solar and 140 GW wind. From this, India has virtually pledged no additional coal power at Glasgow. Analysts have however highlighted the difficulties in achieving the same combined with the need for storage and grid stability.

Address the deep inequities

- India should also embrace the low carbon approach based on the Lifestyle for Environment (LIFE).
- India should seek to achieve equity within the country along with the calls for parity and climate justice between nations. It should move beyond mitigation towards a more multi-sectoral approach.
- Adoption of EV and fuel cell vehicles, scaling up of mass public transport, CCUS, green building codes, recycling with emphasis on methane recovery could be the key aspects of this multi-sectoral approach.

Where New Delhi slipped

- India could have joined the declaration to end deforestation by 2030. There are concerns that India is not doing enough and the perceived influence of corporate interests is also a cause of concern. India's commitments also don't mention the NCD target for forest and tree covers.
- India did not join the Global Methane Pledge to reduce the effects of short-lived but potent greenhouse gas by 30% by 2030 from 2020 levels.

Way Forward

- India also launched a key international climate initiative called Infrastructure for Resilient Island States (IRIS), aimed at providing technical, knowledge, and financial assistance to small island nations with the help of developed countries. Expertise in this regard can be applied domestically too, where coastal erosion, sea-level rise, and urban flooding have been increasing with erratic rainfall patterns and increasing urbanisation.
- The updating of NDC can be done through a cross-partisan multi-stakeholder consultative process that would make it truly nationally determined and implemented.

8. Season of floods

- The recent spell of heavy rains in Chennai has exposed the vulnerability of the city, with flat terrain, to floods.
- Parts of Chennai received rainfall of over 22 cm. This was due to the heavy rainfalls which were followed by the depression in the Bay of Bengal which crossed the coast near Chennai.
- This brought back the haunted memories of the Chennai floods in 2015 and the management of surplus waters from the reservoirs.
- The main causes of this recurring problem are the mismanagement of urban spaces, lack of effective coverage of stormwater drains, maintenance of sewer networks in core areas, and encroachment of wetlands.
- If managed well, the rivers such as Cooum and Adyar along with Buckingham Canal can prevent many areas from inundation.
- Swift completion of the stormwater drain projects and other durable solutions should be considered to address the long-standing woes of the city. For their part, citizen participation is key for the maintenance of the water bodies in the city.

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. Summit for Democracy

Summit for Democracy was recently convened by the U.S. President Joe Biden.

Key highlights

- India emphasised that the world must also jointly shape global norms for emerging technologies like social media and cryptocurrencies.
- USA president announced the establishment of the Presidential Initiative for Democratic Renewal.
 - Under this, the administration plans to provide \$424.4 million to support free media, fight corruption, strengthen democratic reforms, for the use of technology.

2. 'Beti Bachao, Beti Padhao' (BBBP) scheme

The Parliamentary Committee on Empowerment of Women has noted in its report that The Government spent 80% of the funds under the 'Beti Bachao, Beti Padhao' (BBBP) scheme on media campaigns.

- It has recommended that it must now revisit this strategy and invest in measurable outcomes in health and education for girls.
- The total utilisation under the scheme was also poor.
- **Advocacy and media campaigns include** television publicity, outdoor and print media, SMS campaigns, radio spots and community engagement through exhibition vans.

What is 'Beti Bachao, Beti Padhao' (BBBP) scheme?

- The scheme was launched by Indian Prime Minister in January 2015
- **Aim:** To address sex-selective abortion and the declining child sex ratio, which was at 918 girls for every 1,000 boys in 2011.
- The programme is being implemented across 405 districts.
- There is a clearly laid down formula for utilisation of funds. Rs. 50 lakh a year is earmarked a district for utilisation under six different components.
 - Of this, 16% is for inter-sectoral consultation or capacity-building
 - 50% for innovation or awareness generation activities
 - 6% for monitoring and evaluation
 - 10% for sectoral interventions in health
 - 10% for sectoral interventions in education
 - 8% as flexi funds

3. Diplomatic Boycott of Beijing Winter Olympics

What is a diplomatic boycott?

- Those who remember the 1980s may think of an Olympic boycott as countries staying home, athletes and all. But the US diplomatic boycott will **prevent only government officials** from attending.

- Typically, high-ranking officials from many countries attend the Games, which are among the biggest international gatherings outside of UN and major summits.

What reason did the US give for the boycott?

- US has cited “**genocide and crimes against humanity**” in Xinjiang, in western China as the reason for the boycott.
 - The Chinese government has cracked down harshly on Uyghurs and other predominantly Muslim ethnic minorities in that region, including mass detentions and forced use of contraception and sterilizations.
 - The Australian government, which has had diplomatic fallout with China over this issue, too cited the same reason.
- The recent **case of Chinese tennis player Peng Shuai**, who accused a former top government official of sexually assaulting her, also contributed to this decision. Moments after Peng Shuai made her allegations, on Chinese social media, the posts were taken down and she disappeared from public view for days.
- The International Olympic Committee said it called her twice, but questions were raised about how freely she was speaking.
- Domestically there is a bipartisan support in the USA regarding this move. If anything, the criticism has come from Republicans who say the decision does not go far enough.

Does it mean anything for US athletes at the Olympics?

- Although the hostility between the nations may make for some uncomfortable moments for the American delegation in Beijing, there are not expected to be any significant effects.
- American athletes are to travel to China and compete in their events as scheduled.
- Some American Olympic athletes are speaking out about China & about human rights violations. However, the International Olympic Committee has always asserted that the **Games are nonpolitical**. As such, it has strict rules about athletes protesting while at the Games.
- Nevertheless, even those top athletes who have condemned human rights abuses say they plan to compete at the Games.

Is there a precedent for a diplomatic boycott of the Olympics?

- The first major boycott of an Olympics came in 1976 when about 30 mostly African nations sat out the Montreal Games. They contended that because a

New Zealand rugby team had toured **apartheid South Africa**, New Zealand should be barred from the Games.

- The most prominent boycott came in 1980, when more than 60 countries, led by the United States, boycotted the Summer Games in Moscow because of **the Soviet Union's invasion of Afghanistan** the previous year.
- In 1984, the Soviet Union led more than a dozen countries in a boycott of the 1984 Games in Los Angeles. Although the cited reason was security concerns, there is little doubt the move was essentially a tit-for-tat measure for the 1980 boycott.
- In **2014**, President Barack Obama, Vice President Joe Biden and Michelle Obama, the first lady, all **skipped the Sochi Olympics in Russia**.
- France and Germany also did not send top-ranking officials.
- Although it was not a full-fledged diplomatic boycott, the move was seen as a **disapproval of Russia's crackdown on gay rights**.
- The 2014 Sochi Olympics boycott was also possibly motivated by Russia's giving **political asylum to Edward Snowden**, who leaked classified documents about American spying.

Have boycotts been effective?

- The boycott of the Moscow Games **did not appear to have any effect** on Soviet foreign policy; troops from the country remained in Afghanistan until 1989.
- One of the key differences between then and now is **money**. The Olympics now are a billion-dollar enterprise and a boycott could cost teams and a sport a fortune, especially the US since American broadcaster NBC pays billions of dollars to the International Olympic Committee to show the Games
- An international consensus seems to have emerged that sweeping boycotts that include athletes are ineffective and **serve only to penalize sportsmen and women**.
- While boycotts may not change policy, they do **run the risk of reprisals**, as was seen in 1984. Sure enough, section in China has called for boycott the Summer Olympics in Los Angeles in 2028.

How has China reacted to this?

- China has said it is "not bothered at all" by the boycotts.
- Global Times, China's state-run newspaper, dismissed Australia's decision as "immature, arrogant and stupid" while the government said the boycotting countries will "pay a price".
- Chinese Foreign Ministry Spokesperson stated "The United States, Britain and Australia have used the **Olympics platform for political manipulation** and they will have to pay the **price for their mistaken acts**."

GS 3 : Economy, Science and Technology, Environment

4. Global Methane Initiative

India has co-chaired along with Canada the Global Methane Initiative leadership meet held virtually.

About Methane

- Methane is a greenhouse gas, which is also a component of natural gas.
- There are various sources of methane including human and natural sources.
- The **anthropogenic sources** are responsible for **60 per cent** of global methane emissions.
- It includes landfills, oil and natural gas systems, agricultural activities, coal mining, wastewater treatment, and certain industrial processes.
- The oil and gas sectors are among the largest contributors to human sources of methane.
- These emissions come primarily from the burning of fossil fuels, decomposition in landfills and the agriculture sector.

Global Methane Initiative (GMI)

- GMI is a voluntary Government and an informal international partnership having members from 45 countries including the United States and Canada.
- The forum has been created to achieve global reduction in anthropogenic methane emission through partnership among developed and developing countries having economies in transition.
- The forum was created in 2004 and India is one of the members since its inception and has taken up Vice-Chairmanship for the first time in the Steering Leadership along with USA.
- National governments are encouraged to join GMI as Partner Countries, while other non-State organizations may join GMI's extensive Project Network.

Focus areas

The initiative currently focuses on five sectors, which are known sources of anthropogenic methane emissions:

1. Agriculture
2. Coal mining
3. Municipal solid waste
4. Municipal wastewater
5. Oil and gas systems

Why focus on Methane?

- The emission of methane is a big concern as it is a greenhouse gas having 25-28 times harmful effect than carbon dioxide
- According to the UN, 25 % of the warming that the world is experiencing today is because of methane.
- Methane is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide.
- According to IPCC, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.

5. Radioactive Pollution in Water

Radioactive pollution of water is newly emerging but is of grave concern for water pollution and human health.

Quick recap: Radioactivity

- Radioactivity is the phenomenon of spontaneous emission of particles or waves from the unstable nuclei of some elements.
- There are three types of radioactive emissions: Alpha, Beta and Gamma.
- Alpha particles are positively charged He atoms, beta particles are negatively charged electrons and gamma rays are neutral electromagnetic radiations.
- Radioactive elements are naturally found in the earth's crust.

Radioactive contamination of Water

- **Natural:** Percolation of naturally occurring radioactive materials (NORM) from the soil sediments to the aquifer causes groundwater contamination.
- **Man-made:** Anthropogenic sources of such pollution include- nuclear weapon investigation, nuclear calamities, nuclear powerhouses and dumping of radioactive waste.

Various contaminant elements

- Uranium, thorium and actinium are three NORM series that contaminate water resources.
- A number of radionuclides are found in surface and subsurface waters, among which ^3H , ^{14}C , ^{40}K , ^{210}Pb , ^{210}Po , ^{222}Rn , ^{226}Ra , ^{228}Ra , ^{232}Th and $^{234,235,238}\text{U}$ are common.
- Strontium-90, Caesium-137, etc are also formed by nuclear reactors, along with numerous unnecessary radioisotopes wastes.
- ^{40}K and ^7Be are the most commonly found radioactive elements in the sludge generated in sewage treatment plants.
- Nuclear reactors produce radioisotopes (Cobalt-60, Iridium-192, etc) that hand out as sources of gamma radiation in radiotherapy and numerous industrial appliances.

Oceanic sources

- Oceans and seas are the natural repositories of naturally occurring uranium. It is found in the form of uranyl carbonate ion.
- A significant concentration of uranium is supposed to be found in the greater salinity of the marine water.
- ^{40}K (Radioactive Potassium) is also found in considerable concentration in the marine environment.

Measuring radioactive pollution

- Radioactivity is measured in Becquerel (SI unit) or in Curie.
- Energy absorbed per unit mass is measured by Gray, while the unit Sievert measures the quantity of radiation absorbed by human tissues.
- A small amount of radiation is found in all types of water but the extended amount of radiation is harmful to human health.
- Radioactivity in drinking water can be determined by a gross alpha test.

Hazards of such pollution

- Radioactive elements have an effect on the environment and can cause a risk to human healthiness if inhaled, injected or exposed.
- Human tissues absorb radiation through polluted water and foodstuff, which can cause serious health risks.
- High doses of radiation can cause acute radiation syndrome or cutaneous radiation injury.
- Exposure to radiation causes various disorders in human physiology, including cancer, leukaemia, genetic mutations, osteonecrosis, cataracts and chromosomal disruption.

6. NASA's Imaging X-Ray Polarimetry Explorer (IXPE) Mission

NASA has launched a new mission named Imaging X-ray Polarimetry Explorer or IXPE.

About IXPE

- IXPE observatory is a joint effort of NASA and the Italian Space Agency.
- The mission will study “the most extreme and mysterious objects in the universe – supernova remnants, supermassive black holes, and dozens of other high-energy objects.”
- The mission’s primary length is two years and the observatory will be at 600 kilometers altitude, orbiting around Earth’s equator.
- IXPE is expected to study about 40 celestial objects in its first year in space.

What are the instruments onboard?

- IXPE carries three state-of-the-art space telescopes.
- Each of the three identical telescopes hosts one light-weight X-ray mirror and one detector unit.
- These will help observe polarized X-rays from neutron stars and supermassive black holes.
- By measuring the polarization of these X-rays, we can study where the light came from and understand the geometry and inner workings of the light source.
- This new mission will complement other X-ray telescopes such as the Chandra X-ray Observatory and the European Space Agency’s X-ray observatory, XMM-Newton.

Why is it important?

The mission will help scientists answer questions such as:

- How do black holes spin?
- Was the black hole at the center of the Milky Way actively feeding on surrounding material in the past?
- How do pulsars shine so brightly in X-rays?
- What powers the jets of energetic particles that are ejected from the region around the supermassive black holes at the centers of galaxies?

7. Saryu Nahar National Project

PM will inaugurate the Saryu Nahar National Project.

Saryu Nahar National Project

- The Project involves the interlinking of five rivers – Ghaghara, Saryu, Rapti, Banganga and Rohini to ensure optimum usage of water resources of the region.
- It will benefit nine districts of Eastern Uttar Pradesh namely – Bahraich, Shravasti, Balrampur, Gonda, Siddharthnagar, Basti, Sant Kabir Nagar, Gorakhpur and Maharajganj.
- The sub canals with a length of 6,600km have been linked to the 318km main canal.
- The work on the project started in 1978 but due to lack of continuity, it got delayed and was not completed even after nearly four decades.

Benefits offered

- The project will provide assured water for irrigation of over 14 lakh hectares of land and benefit about 29 lakh farmers of over 6200 villages.
- The farmers of the region, who were the worst sufferers of the inordinate delay in the project, will now immensely benefit from the upgraded irrigation potential.
- They will now be able to grow crops on a larger scale and maximize the agri-potential of the region.

8. New Food Processing Policy

The Food Processing Sector has emerged as an important segment of the Indian economy and it constitutes as much as 9.9 percent and 11.4 percent share of GVA in Manufacturing and Agriculture sector respectively in 2019-20 at 2011-12 prices.

Key challenges facing the sector are-

- Supply chain infrastructure gaps
- Institutional gaps
- Relatively low level of processing
- Technological gaps

- Lack of seamless Linkage between Agri-Production and Processing
- Credit availability gaps

The draft National Food Processing Policy lays down strategy for unhindered growth of the sector by addressing these challenges through

- Promotion of clusters
- Convergence of services provided by different Ministries / Departments
- Focused interventions for improving competitiveness
- Promotion of India's Unique Selling Proposition (USP)
- Strengthening unorganized food processing units
- Increased access to institutional credit at affordable cost

Some of the key objectives of the draft policy are-

- Attaining a higher growth trajectory through significant increase in investment for strengthening supply chain infrastructure and expansion of processing capacity particularly in perishables;
- Improving Competitiveness through technology upgradation, Research & Development, Branding and strengthening India's USP in food sector;
- Attaining long term sustainability in growth of the sector through efficient use of water, energy, adoption eco-friendly technology in processing, storage, packaging and use of waste from FPI industry

Prelims Practice Questions

1. With reference to Monetary Policy Committee (MPC), consider the following statements:

1. It is a statutory and institutionalized framework established under the RBI Act, 1934.
2. The Governor of RBI is ex-officio Chairman of the MPC.

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 Reserve Bank of India (RBI) has released the Monetary Policy Report (MPR) for the month of December 2021.
 - The MPR is published by the Monetary Policy Committee (MPC) of RBI.
- The **MPC is a statutory and institutionalized framework under the RBI Act, 1934**, for maintaining price stability, while keeping in mind the objective of growth. **Hence, statement 1 is correct.**
- The MPC **determines the policy interest rate (repo rate) required to achieve the inflation target (4%)** with a leeway of 2% points on either side.
- The **Governor of RBI is ex-officio Chairman** of the MPC. **Hence, statement 2 is correct.**

2. Which one of the following objectives is not embodied in the Preamble to the Constitution of India?

- a. Liberty of thought
- b. Economic liberty
- c. Liberty of expression
- d. Liberty of belief

Answer: b

Explanation:

Economic Liberty is not explicitly provided for in the Preamble to the Constitution. The short text hereunder:

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

LIBERTY of thought, expression, belief, faith and worship;

3. Global Health Security Index 2021 has been recently in the news. It is published by which of the following institutions?

- A World Health Organization
- B Nuclear Threat Initiative and Johns Hopkins Center.
- C UNICEF
- D Concern Worldwide and Welthungerhilfe

Answer : B

Explanation

About Global Health Security Index 2021

- It is an **assessment and benchmarking of health security** and related capabilities across 195 countries.
- It has been developed in partnership by the **Nuclear Threat Initiative (NTI)** and the Johns Hopkins Center. **Hence, option B is correct.**
- The GHS Index assesses countries' **health security and capabilities across six categories**. The six categories are as follow:
 - **Prevention:** Prevention of the emergence or release of pathogens.
 - **Detection and Reporting:** Early detection and reporting for epidemics of potential international concern.
 - **Rapid Response:** Rapid response to and mitigation of the spread of an epidemic.
 - **Health System:** Sufficient and robust health system to treat the sick and protect health workers.
 - **Compliance with International Norms:** Commitments to improving national capacity, financing plans to address gaps, and adhering to global norms.

- **Risk Environment:** Overall risk environment and country vulnerability to biological threats.

4. With respect to Payments Bank, which of the following statements is/are correct?

1. Payments banks can issue Debit cards and not credit cards.
2. They are given a provision to lend to small businesses.
3. They are not allowed to accept time deposits/fixed deposits (FDs).

Options:

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

Answer: b

Explanation:

- Payments bank is a new form of bank created under the purview of the Reserve Bank of India (RBI). Payments banks can accept a limited deposit of ₹100,000 per customer and may be increased further. These banks cannot lend loans and issue credit cards but they can offer services such as net banking, ATM cards, debit banks and Mobile Banking.
- A time deposit is an interest-bearing bank account that has a date of maturity, such as a certificate of deposit (CD). The payment banks cannot accept time deposits.

5. Consider the following statements:

1. Ken and Betwa rivers are the tributaries of Yamuna.
2. Ken River passes through Panna tiger reserve.
3. The Ken-Betwa inter-linking of rivers project lies in Bundelkhand region.

Which of the statements given above is/are correct?

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

Answer : D

Explanation

- Ken and Betwa rivers **originate in MP** and are the **tributaries of Yamuna**. **Hence, statement 1 is correct.**
- **Ken meets with Yamuna in Banda** district of UP and with **Betwa in Hamirpur** district of UP.
- Rajghat, Paricha and Matatila dams are over Betwa river.
- Ken River passes through **Panna tiger reserve**. **Hence, statement 2 is correct.**
- The **Ken-Betwa inter-linking of rivers project** lies in **Bundelkhand**, a drought-prone region, which spreads across **13 districts of Uttar Pradesh and Madhya Pradesh**. **Hence, statement 3 is correct.**

6. Which of the following are the Point sources of water pollution?

1. Oil refineries
2. Paper and pulp mills
3. Agriculture Run off
4. Sewage treatment plants

Options:

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

Answer: c

Explanation:

- Point source water pollution refers to contaminants that enter a waterway from a single, **identifiable source**, such as a pipe or ditch. Examples of sources in this category include discharges from a **sewage treatment plant, a factory, oil refinery, or a city storm drain**.

Mains Practice Questions

1. PM-KISAN has the potential to break the cycle of intergenerational poverty and the low income of farmers. Critically Discuss.

Approach

- Start the answer by briefly mentioning the objective of PM-KISAN.
- Highlight how PM-KISAN can help farmers.
- Conclude Suitably.

2. Explain the term welfare state? Discuss to what extent Indian fulfills the criteria of being a welfare state?

Approach

- Explain the characteristics of the Welfare State precisely.
- Highlight the features of the Welfare State of India with suitable examples.
- Highlight a few challenges faced by India in becoming a Welfare State.
- Conclude Suitably.