

# UPSC CSE (Main) 2018

## General Studies Paper-III

**Q1. "Access to affordable, reliable, sustainable and modern energy is the *sine qua non* to achieve Sustainable Development Goals (SDGs)". Comment on the progress made in India in this regard. (150 words) [10]**

### Approach to question:

Access to affordable, reliable, sustainable, and modern energy is crucial for achieving the Sustainable Development Goals (SDGs). In the case of India, significant progress has been made in this regard.

1. **Energy access:** India has made commendable strides in providing electricity access to its citizens, with nearly universal electrification achieved. The government's Saubhagya Scheme played a pivotal role in ensuring last-mile connectivity to remote areas.
2. **Renewable energy:** India has witnessed a rapid expansion of renewable energy capacity, particularly in solar and wind power. Initiatives like the International Solar Alliance and the National Solar Mission have accelerated the deployment of clean energy sources, reducing dependence on fossil fuels.

While India has made significant progress, challenges remain, such as ensuring energy sustainability, enhancing grid reliability, and promoting decentralized renewable energy solutions. However, the country's commitment to sustainable energy transitions is evident, setting the stage for further advancements in achieving the SDGs.

### Answer:

Access to affordable, reliable, sustainable, and modern energy is a critical factor for achieving the Sustainable Development Goals (SDGs) set by the United Nations. In India, significant progress has been made in expanding access to energy and promoting sustainable development.

### Progress in India:

1. **Electrification:** The government's efforts through initiatives like "Saubhagya" have led to significant improvements in electrification, bringing electricity to millions of households.

2. **Renewable Energy:** India has witnessed a substantial increase in renewable energy capacity, including solar and wind, promoting sustainable energy sources.
3. **Energy Efficiency:** Various energy efficiency programs have been implemented, reducing energy consumption and promoting sustainability.
4. **LPG Connection:** The "Ujjwala" scheme has provided clean cooking gas connections to millions of rural households, improving health and reducing indoor pollution.

India's progress in ensuring access to affordable, reliable, sustainable, and modern energy is commendable. However, continuous efforts are needed to meet the growing energy demands, promote renewable sources, and achieve the SDGs for sustainable development.

**Q2. Comment on the important changes introduced in respect of the Long term Capital Gains Tax (LTCG) and Dividend Distribution Tax (DDT) in the Union Budget for 2018-2019. (150 words) [10]**

### Approach to question:

The Union Budget for 2018-2019 introduced significant changes regarding Long-term Capital Gains Tax (LTCG) and Dividend Distribution Tax (DDT). The key points are as follows:

1. **Long-term Capital Gains Tax:** The Budget reintroduced LTCG tax on the sale of listed equity shares and equity-oriented mutual funds held for more than one year. Gains exceeding Rs. 1 lakh were subject to a tax rate of 10% without the benefit of indexation.
2. **Grandfathering Clause:** To provide relief to investors, a grandfathering clause was introduced. It ensured that gains made until January 31, 2018, were exempt from LTCG tax. This allowed investors to determine their tax liability based on the original acquisition cost.

These changes were introduced to simplify the tax structure, promote transparency, and align the taxation of various asset classes. The reforms aimed to ensure fair taxation while encouraging long-term investments and boosting the capital markets.

**Answer:**

The Union Budget for 2018-2019 introduced significant changes in respect of the Long Term Capital Gains Tax (LTCG) and Dividend Distribution Tax (DDT) to streamline the tax structure and boost investment.

**Important Changes:**

1. **Long Term Capital Gains Tax:** LTCG tax was reintroduced on equity-oriented mutual funds and stocks, imposing a 10% tax on gains exceeding ₹ 1 lakh, without indexation benefits.
2. **Dividend Distribution Tax:** DDT on equity-oriented mutual funds was abolished, making dividends taxable in the hands of investors at their applicable slab rate.

**Impact:** These changes aimed to bring equity investments in line with other financial assets and encourage long-term investment in the stock market while simplifying the dividend taxation process.

The changes in LTCG and DDT in the Union Budget for 2018-2019 were aimed at promoting equity investment and enhancing tax efficiency in the financial sector. These changes have influenced investors' behavior and contributed to increased participation in the stock market.

**Q3. What do you mean by Minimum Support Price (MSP)? How will MSP rescue the farmers from the low income trap?**

(150 words) [10]

**Approach to question:**

Minimum Support Price (MSP) is the minimum price set by the government to purchase agricultural commodities from farmers. It acts as a safety net, guaranteeing farmers a minimum income for their produce. MSP rescues farmers from the low-income trap by:

1. **Income Security:** It provides farmers with a minimum price for their crops, ensuring a stable income and protecting them from market price fluctuations.
2. **Price Stabilization:** MSP prevents drastic price falls, stabilizing market prices and protecting farmers from distress sales.
3. **Encouraging Essential Crop Cultivation:** MSP incentivizes farmers to grow essential crops, promoting agricultural diversification and ensuring food security.
4. **Access to Credit:** MSP facilitates farmers' access to institutional credit, allowing them to invest in better agricultural practices and increase productivity.
5. **Poverty Alleviation:** By improving farmers' income, MSP contributes to rural development and poverty reduction.

**Answer:**

Minimum Support Price (MSP) is the minimum price set by the government at which it purchases crops from farmers to protect them from market fluctuations and ensure remunerative prices.

**MSP's Role in Rescuing Farmers:**

1. **Price Stability:** MSP guarantees a minimum price, shielding farmers from price volatility and ensuring a stable income for their produce.
2. **Income Security:** With MSP, farmers receive fair prices, mitigating risks and providing a safety net against low incomes.
3. **Debt Reduction:** MSP helps farmers repay loans and avoid falling into a low-income trap, reducing their dependence on moneylenders.
4. **Investment Incentive:** Assured income through MSP encourages farmers to invest in better inputs, leading to improved productivity.

MSP plays a crucial role in safeguarding farmers' incomes and ensuring economic stability in the agricultural sector. By providing a minimum floor price, it rescues farmers from the low-income trap, enabling them to earn a decent livelihood and pursue sustainable agricultural practices.

**Q4. Examine the role of supermarkets in supply chain management of fruits, vegetables and food items. How do they eliminate number of intermediaries?** (150 words) [10]

**Approach to question:**

Supermarkets play a crucial role in the supply chain management of fruits, vegetables, and food items. They streamline the process and eliminate the number of intermediaries in the following ways:

1. **Direct Sourcing:** Supermarkets often establish direct relationships with farmers, bypassing traditional middlemen. This allows them to procure fresh produce directly from the source, reducing the number of intermediaries involved.
2. **Efficient Distribution:** Supermarkets have well-established distribution networks that enable them to transport and store perishable goods efficiently. They can directly coordinate with suppliers and ensure timely delivery to their stores, minimizing handling and transportation costs.
3. **Quality Control:** Supermarkets enforce stringent quality control measures. They set specific standards for the quality, freshness, and packaging of products, ensuring that only the best items reach the shelves. This reduces the need for multiple intermediaries who may compromise product quality.

By directly sourcing from farmers, ensuring quality control, efficient distribution, and offering competitive pricing, supermarkets eliminate several intermediaries in the supply chain. This results in a more streamlined and efficient process, benefitting both suppliers and consumers.

#### Answer:

Supermarkets play a crucial role in the supply chain management of fruits, vegetables, and food items by streamlining the process and reducing the number of intermediaries involved.

#### Role of Supermarkets in Supply Chain Management:

1. **Direct Sourcing:** Supermarkets source produce directly from farmers or large-scale suppliers, eliminating the need for multiple intermediaries.
2. **Efficient Distribution:** They have well-organized logistics and distribution networks, ensuring timely and efficient delivery of products to stores.
3. **Quality Control:** Supermarkets enforce stringent quality standards, reducing the chances of spoilage and wastage during transportation and storage.
4. **Price Stability:** By dealing directly with suppliers, supermarkets can negotiate prices, ensuring stability and transparency in pricing for consumers.

Supermarkets' direct sourcing and efficient supply chain management have transformed the food distribution system, reducing the number of intermediaries and ensuring quality, affordability, and availability of fruits, vegetables, and food items to consumers.

**Q5. Discuss the work of 'Bose-Einstein Statistics' done by Prof. Satyendra Nath Bose and show how it revolutionized the field of Physics. (150 words) [10]**

#### Approach to question:

The work of Prof. Satyendra Nath Bose on Bose-Einstein Statistics revolutionized the field of physics in the following ways:

1. **Quantum Statistics:** Bose-Einstein Statistics provided a new framework for understanding the behavior of identical particles, which was not possible with classical statistics. It described a novel type of particle called bosons, which could occupy the same quantum state.
2. **Bose-Einstein Condensation:** Bose's work laid the foundation for the concept of Bose-Einstein condensation, where a large number of bosons can occupy the lowest energy state, forming a distinct state of matter. This phenomenon has since been observed in various systems, leading to new insights into quantum phenomena.

3. **Particle Physics:** Bose-Einstein Statistics became a fundamental tool in particle physics. It played a crucial role in the understanding of phenomena such as superfluidity, superconductivity, and the behavior of elementary particles.

Overall, Bose-Einstein Statistics introduced a new way of understanding quantum behavior and opened up new avenues of research in particle physics, quantum optics, and condensed matter physics. Its impact on modern physics is profound, as it provided the theoretical framework for phenomena that were later observed experimentally, leading to advancements in various fields and contributing to our understanding of the quantum world.

#### Answer:

Bose-Einstein Statistics, developed by Indian physicist Prof. Satyendra Nath Bose, revolutionized the field of physics and laid the foundation for quantum mechanics.

#### Key Points on Bose-Einstein Statistics:

1. **Collaboration with Einstein:** In 1924, Bose sent his groundbreaking research on quantum mechanics to Albert Einstein, who recognized its significance and collaborated with Bose to develop the statistics.
2. **Particle Behavior:** Bose-Einstein Statistics describes the behavior of identical particles, now known as bosons, at extremely low temperatures.
3. **Quantum Mechanics:** This statistical concept forms the basis for understanding phenomena like Bose-Einstein condensate, a state of matter at near absolute zero temperature.
4. **Impact:** The Bose-Einstein Statistics has profound implications in various fields, including condensed matter physics, laser technology, and superfluidity.

Prof. Satyendra Nath Bose's work on Bose-Einstein Statistics has had a profound impact on modern physics, providing fundamental insights into quantum mechanics and shaping our understanding of the behavior of particles at the quantum level.

**Q6. What are the impediments in disposing the huge quantities of discarded solid wastes which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our habitable environment? (150 words) [10]**

#### Approach to question:

The disposal of huge quantities of solid waste faces several impediments:

1. **Lack of Infrastructure:** Inadequate waste management infrastructure, such as landfill

sites, recycling facilities, and waste treatment plants, makes it challenging to dispose of large volumes of solid waste efficiently.

2. **Improper Waste Segregation:** Poor waste segregation practices by individuals and communities lead to mixed waste streams, making it difficult to recycle or treat specific types of waste effectively.

To safely remove toxic wastes accumulated in our environment:

1. **Identification and Segregation:** Toxic waste needs to be identified and segregated from other waste streams to prevent contamination. This requires awareness, education, and proper labeling systems.
2. **Specialized Treatment:** Toxic waste should undergo specialized treatment processes, such as chemical treatment, incineration, or neutralization, to neutralize or reduce their harmful properties. This treatment should be carried out by trained professionals in designated facilities.

By addressing the impediments in solid waste disposal and implementing safe and effective measures for toxic waste removal, we can protect the environment, human health, and create a sustainable future.

#### Answer:

The generation of huge quantities of solid waste has become a significant environmental challenge, leading to disposal problems and accumulating toxic wastes.

#### Impediments in Solid Waste Disposal:

1. **Lack of Infrastructure:** Insufficient waste management infrastructure and landfill sites hinder proper disposal.
2. **Inadequate Awareness:** Lack of public awareness about waste segregation and recycling contributes to improper waste disposal.
3. **Policy and Implementation Gap:** Inadequate waste management policies and weak implementation impede effective waste disposal.
4. **Economic Considerations:** The cost of waste management and recycling may deter some industries and municipalities from adopting proper disposal practices.

#### Safely Removing Toxic Wastes:

1. **Hazardous Waste Treatment:** Toxic wastes require specialized treatment methods, such as incineration or chemical treatment.
2. **Recycling and Reuse:** Efforts should be made to recycle toxic wastes whenever possible, reducing their impact on the environment.

3. **Strict Regulations:** Enforcing stringent regulations on industries producing toxic wastes ensures proper disposal and accountability.
4. **Public Awareness:** Creating awareness about the hazardous nature of certain wastes promotes responsible waste disposal practices.

Addressing the challenges of solid waste disposal requires a comprehensive approach, including better infrastructure, policy reforms, public awareness, and a focus on safe disposal of toxic wastes to ensure a sustainable and habitable environment.

- Q7. What is a wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India. (150 words) [10]**

#### Approach to question:

Wetlands are areas of land where water is present either permanently or seasonally. They include marshes, swamps, peatlands, and mangroves, among others. Wetlands play a crucial role in maintaining biodiversity, regulating water flow, mitigating climate change, and providing habitats for various species.

The Ramsar concept of 'wise use' promotes the sustainable use and conservation of wetlands. It recognizes that wetlands should be utilized in a way that ensures their ecological character is maintained. This approach involves balancing human needs with the long-term conservation of wetland ecosystems, ensuring that the benefits they provide are not compromised.

Two examples of Ramsar sites in India are:

Chilika Lake and Sunderbans

These examples highlight how the Ramsar concept of 'wise use' encourages the conservation of wetlands while allowing for sustainable utilization, benefiting both human communities and the environment.

#### Answer:

Wetlands are vital ecosystems that include areas like marshes, swamps, and bogs, with a mix of water, vegetation, and soil characteristics.

#### Ramsar Concept of 'Wise Use' in Wetland Conservation:

1. **Sustainable Use:** The Ramsar Convention advocates the 'wise use' of wetlands, emphasizing sustainable development and conservation.
2. **Ecological Character:** The concept ensures the maintenance of the ecological character of wetlands, preserving biodiversity and ecosystem functions.
3. **Socio-Economic Benefits:** It recognizes the significance of wetlands for human well-being



and encourages activities that do not degrade their ecological values.

#### Examples of Ramsar Sites in India:

1. **Chilika Lake in Odisha:** The largest brackish water lagoon in India, supporting a wide variety of flora, fauna, and fishery-dependent communities.
2. **Sunderbans in West Bengal:** A unique mangrove ecosystem, home to the Royal Bengal Tiger and several other endangered species.

The Ramsar concept of 'wise use' underscores the importance of balancing conservation efforts with sustainable utilization of wetland resources, ensuring their long-term ecological and socio-economic benefits.

#### Q8. Sikkim is the first 'Organic State' in India. What are the ecological and economical benefits of an Organic State?

(150 words) [10]

##### Approach to question:

Sikkim being the first 'Organic State' in India offers several ecological and economic benefits, including:

1. **Ecological Benefits:**
  - (a) Reduction in chemical pesticide and fertilizer use, minimizing soil and water pollution.
  - (b) Preservation of biodiversity by avoiding the use of synthetic chemicals harmful to flora and fauna.
2. **Economic Benefits:**
  - (a) Increased market demand for organic produce, leading to better income opportunities for farmers.
  - (b) Reduced health costs due to lower exposure to chemical residues in food.

Overall, Sikkim's status as an Organic State showcases the potential for sustainable agriculture, ecological conservation, and economic prosperity, serving as a model for other regions to adopt organic farming practices.

##### Answer:

Sikkim, the first organic state in India, has transitioned its agricultural practices to completely organic methods, free from synthetic pesticides and fertilizers.

##### Ecological and Economic Benefits of an organic state:

1. **Ecological Sustainability:** Organic farming promotes soil health, biodiversity conservation, and water quality, reducing environmental pollution.
2. **Healthier Produce:** Organic farming yields chemical-free produce, promoting public health and food safety.

3. **Economic Opportunities:** Organic farming boosts rural livelihoods by creating demand for organic produce and promoting agri-tourism.
4. **Climate Resilience:** Organic practices enhance crop resilience to climate change, reducing vulnerability to extreme weather events.
5. **Global Recognition:** Sikkim's organic status has garnered international recognition, attracting ecologically conscious tourists and international markets for its organic products.

Sikkim's transition to an organic state showcases the potential of organic farming in providing ecological benefits, sustainable economic growth, and enhanced food security. Its pioneering efforts serve as a model for other states to emulate in their pursuit of environmentally friendly and economically viable agricultural practices.

#### Q9. The China-Pakistan Economic Corridor (CPEC) is viewed as a cardinal subset of China's larger 'One Belt One Road' initiative. Give a brief description of CPEC and enumerate the reasons why India has distanced itself from the same.

(150 words) [10]

##### Approach to question:

The China-Pakistan Economic Corridor (CPEC) is a flagship project under China's ambitious 'One Belt One Road' initiative. India has distanced itself from CPEC due to several reasons:

1. **Sovereignty Concerns:** CPEC passes through Pakistan-occupied Kashmir, which India considers its integral part.
2. **Security Apprehensions:** India perceives CPEC's proximity to its western border as a strategic threat, potentially enhancing China's military presence.
3. **Economic Asymmetry:** India views CPEC as favoring China and potentially creating an economic imbalance in the region.
4. **Opposition to OBOR:** India opposes China's 'One Belt One Road' initiative, citing concerns over its geopolitical implications and influence in the region.

##### Answer:

The China-Pakistan Economic Corridor (CPEC) is a significant infrastructure project that aims to connect China's western region to Pakistan's Gwadar Port through a network of roads, railways, and pipelines.

##### Description of CPEC:

1. **Strategic Importance:** CPEC holds geopolitical significance for China, providing access to the

Arabian Sea and reducing reliance on the Malacca Strait.

2. **Economic Integration:** The project fosters economic integration between China and Pakistan, facilitating trade and investment.
3. **Infrastructure Development:** CPEC focuses on building transportation networks, energy projects, and industrial zones.

#### Reasons for India's Distancing:

1. **Sovereignty Concerns:** India views CPEC as passing through disputed territory in Pakistan-administered Kashmir, raising sovereignty concerns.
2. **Security Apprehensions:** The project's proximity to sensitive Indian regions raises security apprehensions.
3. **Geopolitical Rivalry:** India perceives CPEC as strengthening China's presence in the Indian Ocean region, heightening geopolitical rivalry.

India's reservations about CPEC revolve around territorial, security, and geopolitical considerations, contributing to its distancing from the project.

**Q10. Left Wing Extremism (LWE) is showing a downward trend, but still affects many parts of the country. Briefly explain the Government of India's approach to counter the challenges posed by LWE.**

(150 words) [10]

#### Approach to question:

The China Pakistan Economic Corridor (CPEC) is a flagship project under China's ambitious 'One Belt One Road' initiative. It aims to connect Gwadar Port in southwestern Pakistan to China's northwestern region of Xinjiang through a network of highways, railways, and pipelines. CPEC is considered vital for China's access to the Arabian Sea, while Pakistan anticipates economic development and infrastructure enhancement.

India has distanced itself from CPEC due to several reasons:

1. **Sovereignty concerns:** CPEC passes through Pakistan-occupied Kashmir, which India considers its integral part.
2. **Security apprehensions:** India perceives CPEC's proximity to its western border as a strategic threat, potentially enhancing China's military presence.
3. **Economic asymmetry:** India views CPEC as favoring China and potentially creating an economic imbalance in the region.

#### Answer:

Left Wing Extremism (LWE) continues to be a significant security challenge in certain regions of India, even though there has been a downward trend in recent years.

#### Government of India's Approach to Counter LWE:

1. **Security Measures:** Deploying security forces and conducting joint operations to neutralize extremist groups and disrupt their activities.
2. **Development Initiatives:** Focusing on infrastructure development, healthcare, education, and employment generation in affected areas to address root causes.
3. **Surrender and Rehabilitation:** Encouraging LWE cadres to surrender and providing rehabilitation and skill training for their reintegration into society.
4. **Intelligence Sharing:** Strengthening intelligence sharing and coordination among states to prevent cross-border movements of extremists.
5. **Community Engagement:** Promoting community-police interactions to build trust and encourage information sharing.

The Government of India's multi-pronged approach aims to address the challenges posed by Left Wing Extremism by combining security measures with socio-economic development and community engagement. This comprehensive strategy seeks to restore peace, stability, and development in the affected regions.

**Q11. How are the principles followed by NITI Aayog different from those followed by the erstwhile Planning Commission in India?**

(250 words) [15]

#### Approach to question:

The principles followed by NITI Aayog, as compared to the erstwhile Planning Commission, can be summarized as follows:

1. **Cooperative federalism:** NITI Aayog promotes cooperative federalism by fostering collaboration and consultation with states in policy formulation and implementation, whereas the Planning Commission used a more centralized approach.
2. **Flexibility and decentralization:** NITI Aayog emphasizes flexibility and decentralization, allowing states greater autonomy in designing and implementing development plans, unlike the rigid top-down approach of the Planning Commission.

In summary, NITI Aayog's principles of cooperative federalism, flexibility, decentralization, outcome orientation, private sector involvement, expert-driven approach, and sustainable development agenda distinguish it from the erstwhile Planning Commission's centralized, input-based planning approach.

**Answer:**

NITI Aayog, established in 2015, replaced the Planning Commission as the government's premier policy think tank. The two institutions differ significantly in their approach and functioning.

**Principles of NITI Aayog:**

1. **Cooperative Federalism:** NITI Aayog promotes cooperative federalism, encouraging states to actively participate in the policy-making process and shaping their development agenda.
2. **Decentralization:** It advocates for decentralization of decision-making and implementation, empowering states and local bodies to tailor policies according to their specific needs.
3. **Outcome-Oriented:** NITI Aayog emphasizes outcome-oriented planning, focusing on measurable targets and results rather than rigid top-down planning.
4. **Private Sector Engagement:** It fosters public-private partnerships and involves the private sector in driving economic growth and development projects.

**Principles of the erstwhile Planning Commission:**

1. **Centralized Planning:** The Planning Commission adopted a centralized approach to planning, with the central government taking the lead in formulating and implementing development plans.
2. **Top-Down Approach:** Decisions and policies were predominantly top-down, with states having limited flexibility to shape their development programs.
3. **Five-Year Plans:** The Planning Commission formulated Five-Year Plans as a roadmap for the country's economic and social development.
4. **Resource Allocation:** It played a crucial role in allocating resources to various sectors and states based on central priorities.

The shift from the Planning Commission to NITI Aayog marked a departure from centralized planning to cooperative federalism, enabling a more inclusive and participatory approach to policy-making in India. NITI Aayog's principles prioritize decentralization, outcome orientation, and private sector engagement, aligning with contemporary governance requirements and the evolving socio-economic landscape of the country.

**Q12. How would the recent phenomena of protectionism and currency manipulations in world trade affect the macroeconomic stability of India? (250 words) [15]**

**Approach to question:**

The recent phenomena of protectionism and currency manipulations in world trade can have detrimental effects on India's macroeconomic stability, including:

1. Reduced exports and trade imbalances.
2. Decreased foreign direct investment.
3. Exchange rate volatility impacting competitiveness.
4. Inflationary pressures and increased import costs.
5. Challenges in maintaining fiscal and monetary stability.
6. Negative impact on employment and economic growth.

India must address these challenges by promoting trade openness, diversifying export markets, and implementing measures to enhance competitiveness and attract foreign investment to ensure sustained macroeconomic stability and inclusive growth.

**Answer:**

The recent phenomena of protectionism and currency manipulations in world trade can have significant implications for the macroeconomic stability of India. Let's examine how these factors could impact the country:

**1. Protectionism:**

- (a) **Reduced Exports:** Protectionist measures, such as increased tariffs or non-tariff barriers, imposed by trading partners can hinder Indian exports. This can lead to a decline in export revenues, adversely affecting India's balance of payments and current account deficit.
- (b) **Trade Imbalances:** Protectionism may disrupt global supply chains and increase trade imbalances. If India's imports become more expensive due to protectionist measures, it could lead to inflationary pressures and widen the trade deficit.
- (c) **Reduced Foreign Direct Investment (FDI):** Protectionism can discourage foreign investors, as it creates uncertainty and restricts market access. Reduced FDI inflows can impact capital formation, job creation, and overall economic growth in India.

**2. Currency Manipulation:**

- (a) **Exchange Rate Volatility:** Currency manipulation by other countries can lead to exchange rate fluctuations, affecting the competitiveness of Indian exports. A sudden appreciation of the Indian rupee can make

exports more expensive and reduce their demand in the global market.

- (b) **Impact on Import Costs:** Currency manipulation can also influence the cost of imports. If the rupee appreciates due to currency manipulation in other countries, it can make imports cheaper, leading to increased competition for domestic industries.
- (c) **Balance of Payments:** Currency manipulation can impact India's balance of payments. An artificially weak currency in other countries can make Indian imports relatively expensive, leading to a higher import bill and a wider current account deficit.

In conclusion, the recent phenomena of protectionism and currency manipulations in world trade pose significant challenges to India's macroeconomic stability. They can adversely affect exports, trade balances, FDI inflows, exchange rates, inflation, fiscal and monetary policies, employment, and overall economic growth.

**Q13. Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers? (250 words) [15]**

**Approach to question:**

The National Horticulture Mission (NHM) has played a crucial role in boosting the production, productivity, and income of horticulture farms in India. Its achievements include:

1. **Expansion of Horticulture:** NHM has facilitated the expansion of horticulture by promoting cultivation of fruits, vegetables, spices, flowers, and medicinal plants, leading to increased production and diversification.
2. **Technological Upgradation:** NHM has focused on improving farm practices, adopting modern techniques, and promoting high-yielding varieties to enhance productivity and quality.

However, the extent to which NHM has succeeded in increasing farmers' income varies across regions and crops. While some farmers have experienced substantial income growth, challenges remain, such as limited access to markets, price fluctuations, and lack of value addition. Efforts are needed to strengthen market linkages, promote farmer-producer organizations, and provide access to credit and insurance to ensure sustained income growth for horticulture farmers.

**Answer:**

The National Horticulture Mission (NHM) was launched in 2005 to promote holistic growth in the horticulture sector and enhance farmers' income.

**Role of National Horticulture Mission (NHM) in boosting horticulture farms:**

1. **Area Expansion:** NHM encouraged the expansion of horticulture crops by providing support for the establishment of new orchards and gardens.
2. **Improved Practices:** The mission emphasized the adoption of modern and scientific practices to enhance productivity and quality of horticultural produce.
3. **Post-Harvest Infrastructure:** NHM invested in creating post-harvest infrastructure like cold storage and processing units, reducing post-harvest losses.
4. **Marketing and Promotion:** The mission facilitated market linkages and promotion of horticultural produce, helping farmers get better prices.
5. **Skill Development:** NHM focused on training farmers and providing technical know-how to improve their skills and income.

**Success in Increasing Farmers' Income:** NHM has had a positive impact on horticulture production and productivity, leading to increased income for many farmers. However, several challenges like limited market access, lack of proper price realization, and climatic vulnerabilities have hindered its full potential.

NHM has played a vital role in boosting horticulture production, productivity, and income of farmers. However, to ensure sustained growth and income upliftment, it is essential to address the remaining challenges and invest in market infrastructure and value chain development in the horticulture sector.

**Q14. How has the emphasis on certain crops brought about changes in cropping patterns in recent past? Elaborate the emphasis on millets production and consumption. (250 words) [15]**

**Approach to question:**

The emphasis on certain crops in recent years has resulted in notable changes in cropping patterns. Specifically, the emphasis on millets production and consumption has witnessed the following developments:

1. **Increased Cultivation:** The focus on millets has led to increased cultivation of these crops. Farmers have shown greater interest in growing millets due to their nutritional value, resilience to climatic conditions, and suitability for sustainable farming practices.



2. **Diversification of Cropping Patterns:** The emphasis on millets has promoted diversification of cropping patterns. Farmers have shifted from traditional cash crops or cereals to include millets in their crop rotations, enhancing agricultural diversity and reducing monoculture.
  3. **Improved Market Access:** Efforts have been made to create better market linkages for millets. Initiatives such as setting up millet-based food processing units, promoting millet-based products, and enhancing marketing infrastructure have provided farmers with improved opportunities for selling their produce.
- Overall, the emphasis on millets production and consumption has brought about significant changes in cropping patterns.

#### Answer:

The emphasis on certain crops in recent times has led to significant changes in cropping patterns in India. One such focus has been on millets production and consumption.

#### Changes in Cropping Patterns:

1. **Diversification:** Emphasis on non-traditional crops like millets has encouraged farmers to diversify their cropping patterns, reducing dependence on water-intensive crops like rice and wheat.
2. **Nutrition:** Growing awareness about the nutritional benefits of millets has driven their increased cultivation and consumption.
3. **Climate Resilience:** Millets are known for their climate-resilient nature, making them suitable for cultivation in drought-prone regions, thereby reducing agricultural risks.
4. **Sustainable Agriculture:** Millets are eco-friendly crops, requiring fewer inputs like water and fertilizers, contributing to sustainable agriculture.

#### Emphasis on Millets Production and Consumption:

1. **Government Initiatives:** Various government programs like "Millet Mission" and "National Food Security Mission" promote millets cultivation and consumption.
2. **Nutrition Programs:** Inclusion of millets in various nutrition programs has enhanced their demand and consumption.
3. **Health Benefits:** Millets are rich in nutrients, dietary fibers, and gluten-free, making them popular among health-conscious consumers.

The emphasis on millets production and consumption has positively influenced cropping patterns, promoting sustainable agriculture and offering health benefits. Encouraging farmers to cultivate millets can play a crucial

role in enhancing food security and addressing nutritional challenges in the country.

**Q15. Why is there so much activity in the field of biotechnology in our country? How has this activity benefitted the field of biopharma?**  
(250 words) [15]

#### Approach to question:

The field of biotechnology in India has witnessed significant activity due to the following reasons:

1. Strong scientific base and expertise.
2. Government support and favorable policies.
3. Market potential and economic growth.
4. Innovation and research collaborations.

This activity has greatly benefited the field of biopharma by:

1. Driving innovation in drug development and manufacturing.
2. Facilitating the production of affordable biopharmaceuticals.
3. Enhancing healthcare solutions and treatment options.
4. Creating employment opportunities and contributing to economic growth.
5. Fostering research collaborations and technology transfer.

#### Answer:

The field of biotechnology has seen significant activity in India due to its potential for solving critical challenges in agriculture, healthcare, and industry, and promoting economic growth.

#### Reasons for Activity in Biotechnology:

1. **Abundant Biodiversity:** India's rich biodiversity offers vast opportunities for biotechnological research and development.
2. **Skilled Manpower:** The country has a pool of skilled scientists and researchers contributing to advancements in biotechnology.
3. **Government Support:** The government's focus on promoting research and innovation in biotechnology through various schemes and initiatives has boosted activity in the field.
4. **Growing Market:** The increasing demand for biotechnological products in agriculture and healthcare sectors has driven activity in the industry.

#### Benefits to Biopharma:

1. **Drug Development:** Biotechnology has revolutionized drug discovery and development, leading to more effective and targeted therapies.

2. **Affordable Medicines:** Biopharma products offer cost-effective alternatives for treating various diseases, making healthcare more accessible.
3. **Export Potential:** The robust biopharma sector has the potential to contribute significantly to India's economy through exports of biotechnological products.
4. **Employment Opportunities:** The growing biopharma industry has created employment opportunities for skilled professionals in the country.

The extensive activity in the field of biotechnology in India is driven by its potential to address critical challenges and promote economic growth. The biopharma sector, in particular, has greatly benefitted from biotechnological advancements, providing innovative and affordable solutions for healthcare and creating opportunities for economic development.

**Q16. With growing energy needs should India keep on expanding its nuclear energy programme? Discuss the facts and fears associated with nuclear energy.**

(250 words) [15]

#### Approach to question:

As India's energy needs continue to grow, the expansion of its nuclear energy program remains a topic of debate. The decision should consider the following points:

#### Facts:

1. **Reliable Energy Generation:** Nuclear power provides a stable and continuous source of electricity.
2. **Low Carbon Emissions:** Nuclear energy is a low-carbon option, aiding in climate change mitigation.

#### Fears:

1. **Safety Concerns:** Accidents like Fukushima and Chernobyl highlight the potential risks associated with nuclear energy.
2. **Radioactive Waste:** Proper disposal and management of radioactive waste pose challenges.

The decision to expand India's nuclear energy program should carefully consider these facts and fears. It requires addressing safety concerns, ensuring proper waste management, maintaining transparency, and building public trust.

#### Answer:

India's growing energy needs necessitate exploring various energy sources, including nuclear energy. However, the expansion of the nuclear energy program should be considered in the context of its associated facts and fears.

#### Facts Associated with Nuclear Energy:

1. **Low Greenhouse Gas Emissions:** Nuclear energy emits minimal greenhouse gases, making it a viable option for combating climate change.
2. **Energy Security:** Nuclear power enhances energy security by reducing dependence on imported fossil fuels.
3. **Base Load Power:** Nuclear plants provide stable and continuous electricity supply, serving as reliable base load power sources.
4. **Technological Advancements:** Advancements in nuclear technology have led to improved safety and efficiency of nuclear reactors.

#### Fears Associated with Nuclear Energy:

1. **Safety Concerns:** Accidents like Chernobyl and Fukushima have raised safety apprehensions about nuclear power plants.
2. **Radioactive Waste:** Disposal of radioactive waste remains a major challenge, posing environmental and health risks.
3. **Cost and Time Overruns:** Nuclear projects often face cost and time overruns, making them financially challenging.
4. **Non-Proliferation:** Nuclear energy is linked to concerns about nuclear weapons proliferation.

While nuclear energy offers numerous benefits, addressing safety, waste disposal, and cost concerns is essential for its sustainable expansion. India should cautiously consider these factors while balancing the need for clean energy and energy security in its nuclear energy program.

**Q17. How does biodiversity vary in India? How is the Biological Diversity Act, 2002, helpful in conservation of flora and fauna?**

(250 words) [15]

#### Approach to question:

Biodiversity in India showcases remarkable variations owing to its diverse geography, climate, and ecosystems. The country is home to a wide array of species, including flora and fauna, ranging from the Himalayas to the coastal regions. The Biological Diversity Act, 2002, plays a pivotal role in the conservation of this biodiversity through the following points:

1. **Legal Framework:** The Act provides a comprehensive legal framework to regulate the access, use, and conservation of biological resources. It helps in preventing unauthorized exploitation and promotes sustainable utilization.
2. **Protection of Indigenous Knowledge:** The Act safeguards traditional knowledge associated with biodiversity, ensuring the rights of local communities and indigenous people.

Overall, the Biological Diversity Act, 2002, serves as a significant tool for the conservation of India's rich biodiversity, ensuring sustainable development and the protection of its natural heritage.

#### Answer:

India is one of the world's most biodiverse countries, with diverse ecosystems ranging from the Himalayas to coastal regions and tropical forests. The Biological Diversity Act, 2002, plays a crucial role in conserving this rich biodiversity.

#### Variation in Biodiversity in India:

1. **Geographical Diversity:** India's diverse topography, ranging from mountains, plains, plateaus, and coastlines, supports varied biodiversity.
2. **Climate Variability:** The country experiences tropical, subtropical, temperate, and arid climates, influencing the distribution of flora and fauna.
3. **Forest Types:** India's forests include tropical rainforests, deciduous forests, mangroves, and alpine vegetation, harboring unique species.
4. **Endemism:** Several species are endemic to specific regions, adding to India's biodiversity significance.

#### Role of Biological Diversity Act, 2002:

1. **Conservation Measures:** The Act provides a legal framework for the conservation, sustainable use, and equitable sharing of benefits of biodiversity.
2. **Biodiversity Management Committees:** The Act establishes local Biodiversity Management Committees to promote conservation at the grassroots level.
3. **Protection of Indigenous Knowledge:** It safeguards traditional knowledge related to biodiversity and prevents its unauthorized use.
4. **Access and Benefit-Sharing:** The Act regulates access to biological resources and ensures fair and equitable sharing of benefits with local communities.

India's biodiversity varies significantly across its regions, making it an ecological treasure. The Biological Diversity Act, 2002, plays a critical role in conserving this natural heritage and promoting sustainable use of biodiversity resources while protecting the rights of local communities and indigenous knowledge.

**Q18. Describe various measures taken in India for Disaster Risk Reduction (DRR) before and after signing 'Sendai Framework for DRR' (2015-2030). How is this framework different from 'Hyogo Framework for Action, 2005'? (250 words) [15]**

#### Approach to question:

Before and after signing the Sendai Framework for DRR (2015-2030), India has implemented several measures for Disaster Risk Reduction (DRR):

1. **Early Warning Systems:** India has strengthened its early warning systems for cyclones, floods, and earthquakes, enabling timely evacuation and preparedness.
2. **Infrastructure Development:** The country has focused on resilient infrastructure development, incorporating disaster-resistant features in buildings, bridges, and roads.

The Sendai Framework for DRR (2015-2030) differs from the Hyogo Framework for Action (2005) in the following ways:

1. **Scope:** The Sendai Framework has a broader scope, encompassing all hazards and addressing the underlying drivers of risk, including climate change and sustainable development, while the Hyogo Framework primarily focused on natural hazards.
2. **Timeframe:** The Sendai Framework has an extended timeframe of 2015-2030, providing a longer-term strategic approach, whereas the Hyogo Framework had a shorter timeframe of 2005-2015.
3. **Targets:** The Sendai Framework introduced specific targets and indicators for monitoring progress in DRR, whereas the Hyogo Framework had more general objectives.

In summary, India has taken significant measures for DRR, both before and after signing the Sendai Framework. This framework has a broader scope, longer timeframe, specific targets, increased stakeholder inclusion, and emphasizes global cooperation compared to the Hyogo Framework.

#### Answer:

Disaster Risk Reduction (DRR) is crucial for building resilience against natural and man-made disasters. India has undertaken various measures to enhance DRR both before and after signing the 'Sendai Framework for DRR (2015-2030)'.

#### Measures Before and After Signing Sendai Framework for DRR:

1. **Early Warning Systems:** India has strengthened its early warning systems for cyclones, floods, and earthquakes, enabling timely alerts and preparedness.
2. **Infrastructure Development:** Building resilient infrastructure and retrofitting vulnerable structures have been prioritized.

3. **Community Preparedness:** Capacity building and community-based disaster management have been promoted.
4. **Institutional Framework:** Establishment of National Disaster Management Authority (NDMA) and State Disaster Management Authorities (SDMAs) for better coordination and planning.

**Difference between Sendai Framework and Hyogo Framework for Action:**

1. **Scope:** The Sendai Framework has a broader scope, encompassing both natural and man-made disasters, whereas the Hyogo Framework primarily focused on natural hazards.
2. **Timeframe:** The Sendai Framework spans from 2015 to 2030, while the Hyogo Framework was in effect from 2005 to 2015.
3. **Targets:** The Sendai Framework sets specific targets for reducing disaster risk and losses, while the Hyogo Framework focused on building resilience without defined targets.

The Sendai Framework for DRR represents an advancement over the Hyogo Framework, emphasizing a comprehensive approach to disaster risk reduction with specific targets and broader coverage of risks. India's efforts in implementing both frameworks have contributed to enhancing its disaster preparedness and resilience.

**Q19. Data security has assumed significant importance in the digitized world due to rising cyber-crimes. The Justice B. N. Srikrishna Committee Report addresses issues related to data security. What, in your view, are the strengths and weaknesses of the Report relating to protection of personal data in cyber space? (250 words) [15]**

**Approach to question:**

**Strengths of the Justice B. N. Srikrishna Committee Report:**

1. **Comprehensive Approach:** The report takes a comprehensive approach in addressing various aspects of data security, including consent, data localization, cross-border data transfers, and accountability.
2. **Consent and Individual Control:** The report emphasizes the importance of obtaining informed and meaningful consent from individuals for the collection and processing of their personal data, enhancing individual control over data.

**Weaknesses of the Justice B. N. Srikrishna Committee Report:**

1. **Data Localization Challenges:** The requirement for local storage of personal data may pose challenges for businesses and hinder cross-border data flows, impacting economic activities.
2. **Regulatory Burden:** The proposed framework may place a significant regulatory burden on businesses, particularly small and medium enterprises (SMEs), in terms of compliance obligations and costs.

**Answer:**

Data security is a critical concern in the digital age, and the Justice B. N. Srikrishna Committee Report has been instrumental in addressing issues related to the protection of personal data in cyberspace in India.

**Strengths of the Report:**

1. **Comprehensive Framework:** The report provides a comprehensive framework for data protection, encompassing various aspects of data handling and privacy.
2. **Robust Consent Mechanism:** It emphasizes obtaining informed and explicit consent from individuals for data processing.
3. **Individual Rights:** The report recognizes the rights of individuals, including the right to be forgotten, data portability, and rectification of data.
4. **Data Localization:** The report proposes localization of personal data, ensuring better control and regulation of data flow.

**Weaknesses of the Report:**

1. **Ambiguities:** Certain provisions lack clarity, leading to potential implementation challenges and legal uncertainties.
2. **Data Localization Impact:** Mandating data localization might impact cross-border data flows and global business operations.
3. **Compliance Burden:** The stringent requirements might pose a significant compliance burden for small and medium-sized enterprises.

The Justice B. N. Srikrishna Committee Report is a significant step towards addressing data security concerns in India. While it offers a robust framework for personal data protection, it needs further refinement to strike a balance between privacy and business interests and to ensure smooth implementation and compliance.

**Q20. India's proximity to two of the world's biggest illicit opium-growing states has enhanced her internal security concerns. Explain the**



**linkages between drug trafficking and other illicit activities such as gunrunning, money laundering and human trafficking. What countermeasures should be taken to prevent the same? (250 words) [15]**

**Approach to question:**

India's proximity to major opium-growing states like Afghanistan and Myanmar has increased its internal security concerns due to the interlinkages between drug trafficking and other illicit activities. The linkages include:

1. **Gunrunning:** Drug trafficking networks often engage in the illegal arms trade, supplying weapons to criminal elements, insurgent groups, and terrorists, leading to increased violence.
2. **Money Laundering:** Drug trafficking generates significant profits, which are then laundered through complex financial systems, enabling criminals to legitimize their illicit proceeds and sustain their activities.
3. **Human Trafficking:** Drug trafficking networks exploit similar routes and methods for human trafficking, utilizing the infrastructure and connections established for drug smuggling.

To prevent these activities, countermeasures should include strengthened law enforcement efforts, international cooperation, border control and surveillance, financial intelligence, social rehabilitation, a strengthened legal framework, and active participation in international conventions and treaties related to drug control and crime prevention.

**Answer:**

India's geographic location, bordering Afghanistan and the Golden Triangle (Myanmar, Laos, and Thailand), has

heightened internal security concerns due to the linkages between drug trafficking and other illicit activities.

**Linkages between Drug Trafficking and Illicit Activities:**

1. **Gunrunning:** Drug traffickers often engage in gunrunning to protect their illicit activities and expand their operations.
2. **Money Laundering:** Drug trafficking generates substantial illegal proceeds, which are laundered through various channels to disguise their origin.
3. **Human Trafficking:** Drug cartels engage in human trafficking to use vulnerable individuals as drug couriers or laborers.
4. **Organized Crime:** Drug trafficking networks often engage in multiple illicit activities, including smuggling and counterfeiting.

**Countermeasures to Prevent Illicit Activities:**

1. **Strengthening Law Enforcement:** Enhanced cooperation between intelligence agencies and law enforcement to target drug cartels and their networks.
2. **International Cooperation:** Strengthening cooperation with neighboring countries to curb drug trafficking and related illicit activities.
3. **Strengthening Border Security:** Better surveillance and security measures along vulnerable border areas to prevent smuggling and trafficking.
4. **Asset Forfeiture:** Stricter asset forfeiture laws to seize illegal proceeds from drug trafficking and dismantle criminal networks.

The nexus between drug trafficking and other illicit activities poses a significant challenge to India's internal security. Effective countermeasures, including strong law enforcement, international cooperation, and improved border security, are essential to combat this multifaceted threat and safeguard the nation's security and well-being.