

APPROACH – ANSWER: G. S. MAINS MOCK TEST - 1415 (2020)

1. *There have been arguments that direct benefit cash transfers should replace the supply of food through the public distribution system. Do you agree with such arguments? Give reasons in support of your answer. (150 words) 10*

Approach:

- Give a brief introduction about Public Distribution System (PDS).
- Briefly discuss why there are arguments in favour of direct benefit cash transfers.
- State why these arguments are fraught with problems and PDS is required.
- Conclude with a way forward.

Answer:

The Public Distribution System (PDS) evolved as a system of management of scarcity through distribution of food grains at affordable prices. However, it is marred with leakages as well as corruption. Thus, there have been arguments to replace supply of food through PDS with direct benefit transfers (DBTs).

It is argued that DBT would eliminate the huge logistics cost of **transporting and storage** of large volumes of food grains, provide greater **autonomy to beneficiaries** in terms of food choices, reduce **leakages** and facilitate better **targeting**. In a process monitoring study conducted by Jameel Poverty Action Lab (J-PAL) on DBT in food in some cities, it was observed that **implementation rates** of DBT have improved, **beneficiary communication** has increased and **beneficiary preference** for DBT vis-a-vis PDS has increased.

However, arguments in favour of cash transfers are **fraught with various problems**:

- **Inadequate banking facilities in villages** can cause great trouble for beneficiaries. For example, when the nearest bank or post office branch is distantly located from a village, each cash withdrawal entails additional cost and time requirements. Beneficiaries may also lack the confidence to deal with banks and banking procedures.
- Cash transfers **may not necessarily improve diets** as it will be **diverted to non-food expenditures** in households. Usually, decisions relating to cash in households tend to be made by men, who may or may not spend the money on food.
- PDS provides rations at a constant price, irrespective of the **fluctuations in market prices**. This therefore provides a shield against inflation, a benefit that cash transfers cannot match. Further, inflow of cash through cash transfers can itself contribute to inflation, if supply is inelastic.
- PDS requires the government to procure food from farmers. It is feared that replacing this with cash transfers would dismantle this obligation of government, with **adverse impact on agriculture and farmer protection**.
- In remote areas, **markets are poorly developed** making it difficult for beneficiaries to access the market for purchase of desired food items whereas a well-developed network of Fair Price Shops ensures access to food grains even in remote areas. Moreover, there is the possibility of local markets resorting to **hoarding and artificial shortage**.
- **Cash can be swindled out of people more easily than food** which may be a concern in some parts of India especially in tribal areas, where the moneylenders are known for their exploitative practices.

One way of going forward can be to implement a **choice based DBT** where beneficiaries would be free to choose whether they want benefits in cash or in kind through PDS. This choice-based approach would ensure that people in different places have different preferences and would improve beneficiary welfare by expanding their options.

2. ***What do you understand by the term 'participatory budgeting'? Identify the challenges associated with participatory budgeting in India.*** (150 words) 10

Approach:

- Define the term Participatory Budgeting.
- Briefly highlight the benefits of this type of budgeting.
- Discuss the challenges associated with participatory budgeting in India.
- Conclude on the basis of above points.

Answer:

Participatory Budgeting refers to a **method of democratic decision-making** where there is active involvement of people in the processes of budget priority setting and management. It has various benefits as compared to other types of budgeting, such as:

- It promotes a **bottom-up approach**, where citizens and civil society along with the relevant organs of the government and legislature, deliberate and negotiate over the distribution of public resources
- It has the potential to **maximize equity in policy choices** through democratization of public policy formulation and lead to better policy outcomes.
- It is increasingly seen as an effective means to secure **good governance** through **needs based planning** and budgetary allocations. It also improves **transparency** in governance by making the budgeting process open in public domain.
- It leads to **enhanced well-being of citizens** due to improved **service delivery** and direct **accountability** of the state departments.

In India, the most prominent participatory budgeting practices have been implemented in **Kerala, Pune and Delhi**. However, there are a **number of challenges associated with participatory budgeting in India**:

- **Lack of a clear action plan and operational guidelines** on Participatory Budgeting hampers its effective implementation. For example: In Delhi, demarcation of Mohallas, identifying the concerned agency to implement the demands emerging from the exercise and working in coordination with it, is a challenge in the absence of a clear operational plan.
- **Lack of information in the public domain** regarding budget accounts and related information, which are not widely published. This limits effective engagement from citizens' side.
- **Shortage of dedicated and trained staff** for implementing Participatory Budgeting as capacity building of legislators, district authorities, coordinators and volunteers are not conducted. There is a need for training and involving people with technical expertise in planning, investments and implementations.
- **Lack of attention to social inclusion** in Participatory Budgeting leads to domination of participatory processes by local elites, the group in majority, dominant castes in the area etc. This hampers representation from all sections of society.
- **Lengthy process** due to consultations with multiple stakeholders could be time-consuming and open-ended. It may also lead to excessive slow fund outlays, thereby leading to under-utilization of allocated resources.
- **Thinking local, acting local** as Participatory Budgeting tends to prioritize local issues and ignore regional, national or global issues.

Participatory Budgeting is progressively being recognised as a powerful mechanism to strengthen citizens' voices in decentralised systems and it certainly is a tool to accomplish various developmental goals such as Sustainable Development Goals etc. Thus, steps should be taken to strengthen Participatory Budgeting process in India by adopting a clear framework with respect to budgeting process, manpower and citizen participation.

3. ***Inclusive growth in an economy itself negates the need for a Universal Basic Income. Discuss in the context of India.*** (150 words) 10

Approach:

- Define Universal Basic Income (UBI).
- Establish the discourse around the use of UBI as a policy tool to alleviate poverty in India.
- Identify the fundamental challenges with the use of UBI for the same.
- Discuss an alternate scenario that is best suited to address income inequality and poverty alleviation in India.

Answer:

Universal Basic Income (UBI) is a provision of **periodic and unconditional cash payment to all citizens**. Rapid expansion of direct cash transfers linked to the national biometric database and small basic income experiments have galvanized an extensive debate on a UBI. This idea was also addressed in the economic survey of the 2017. However, it largely remains in the realm of discourse only. And many have argued that the focus should be on inclusive growth rather than moving towards UBI. This can be further understood through the following set of arguments:

Arguments negating the use of UBI when growth is inclusive:

- If growth is inclusive, an increase in economic activity would lead to higher productivity, wages, profits and income for all. It will ensure an increase in everyone's income and living standards. In that case, a UBI would not be required at all or may be used by the government only to provide social safety nets for a small minority that is unable to participate in growth.

Arguments in favour of UBI promoting inclusive growth:

- **UBI uses taxation to alter the income distribution** wherein those getting less from engaging in economic activity are given some income which is taken from those getting more. This intervention by the state **reduces income inequality**. The use of such fiscal tools to secure a desired income distribution is well established in welfare economics. It recognizes that markets may fail to secure a desired income distribution even when resources are fully and efficiently employed, so the state may use lump sum transfers to correct this, and this will not disturb growth.
- It can be an effective alternative to India's underperforming anti-poverty programmes and distortionary subsidies which eventually affect the customers.

Arguments against UBI promoting inclusive growth:

- In developing and emerging economies like India, resources are not fully employed. Hence for such economies, **the minimum condition is to secure a "steady state" for UBI to become an effective tool for income redistribution**. Some economists estimate that if India grows at 8 per cent a year, and incomes of all rise by at least 6 per cent a year, then the real incomes of all Indians would at least triple by 2035, which is when India will reach that steady state.
- Unless that steady state is reached, the existing instruments including MGNREGS, PDS, ICDS, MDM, etc. are more effective in promoting inclusive growth than UBI.

The IMF and Economic Survey 2016-17 recommend **quasi-basic income schemes** that leave out the well-off top quartile of the population as an effective means of alleviating poverty and hunger. This approach would become even more essential because of job losses during COVID 19 crisis and rise in disruptive technologies.

4. ***E-commerce holds the potential to revamp agriculture marketing in India in multiple ways. Discuss with suitable examples.*** (150 words) 10

Approach:

- Start with a short note on the importance and state of Agricultural Marketing in India.
- Proceed to discuss the potential of new frontiers in the form of E-commerce for agri-marketing in India.
- Identify some of the key risks associated and a way forward for the same.

Answer:

Marketing of agricultural produce is an important economic activity as it needs to balance the affordability and availability of food for consumers with sustained improved incomes to farmers. Although the marketed surplus of the Indian farmers is high in most commodities, the returns are not so remunerative. It is a complex system with a mix of organized and unorganized sector practices.

In this context, e-commerce presents itself as a new frontier with the potential to revamp agri-marketing in India. This is because of the following reasons:

- E-commerce **eliminates most middlemen and rationalizes inventory costs**, and sellers are able to pass on cost benefits to consumers as low prices.
- It also enables **sellers to target consumers across the country** at effectively no search and negotiation cost.
- It helps to **bring in transparency in pricing by removing the information asymmetry** between sellers and buyers and enabling farmers to benefit from price discovery. This reduces the price volatility and provides viable opportunities to hedge their risk.
- It has the **potential to bring producers of niche agricultural and horticultural products online** and present them with an opportunity to market their products to a nation-wide and even global consumer base. For instance, organic ginger produced in Sikkim, Araku coffee (Andhra Pradesh).
- It provides **opportunities for private entrepreneurs** to invest in agricultural marketing. For instance, Big Basket, a well-known grocery home-delivery business, books orders online from consumers and delivers sorted and cleaned groceries, vegetables, and fruits to them.
- The growth in disposable incomes, improving living standards and purchasing power of consumers in India's **second- and third-tier cities and rural areas** hold great potential for the growth of e-retailing.
- **FPOs** can start specializing in certain fresh and processed products, and get into branding activities to get **good deals using e-commerce**. Also, Farmer Producer Companies and Cooperatives can emerge as **viable aggregation vehicles** for small and marginal farmers to **participate directly on futures platform for e-trading**.

The growing internet and smartphone penetration in the rural regions is encouraging the growth of e-commerce models to focus on agribusiness. It needs to be further incentivized by developing sourcing models and supply chains that connect directly with farmers; tax uniformity and easier movement of goods across states.

5. *While digital financial services can expand financial inclusion in India, there are various challenges that need to be addressed in this regard. Discuss. (150 words) 10*

Approach:

- Explain what you understand by digital financial inclusion and briefly discuss how it can expand financial inclusion in India.
- State the challenges in its widespread adoption.
- Conclude appropriately.

Answer:

Digital financial inclusion involves the deployment of digital means to reach currently financially excluded and underserved populations. It has the potential to provide affordable, convenient and secure banking service to poor individuals in rural and urban areas. Further, it is deemed as a safer alternative as it can reduce the circulation of fake currency and also reduce risks of loss, theft etc. posed by cash-based transactions.

Looking at digital financial services as safe, secure, convenient, quick and affordable payment options, several policy initiatives and enterprises have contributed to deepening of digital payments in India free remittances through NEFT and RTGS facilities, fourfold increase in POS terminals between 2015-19, increase in the number of debit cards to 835 million in 2019, 142 banks on UPI

platform, 50 UPI service providers etc. However, despite its potential, there are several issues regarding digital financial inclusion in India. These include:

- **Digital divide:** According to 'Indicators of Household Social Consumption on Education in India' report, approximately 15% of rural households have internet connection compared to around 42% urban households, increasing their chance of being excluded from digital financial inclusion programmes.
- **Digital Illiteracy:** Digital finance providers moving into lower income markets will face multiple challenges due to widespread financial and digital illiteracy.
- **Lack of digital infrastructure:** Owing to slow/delayed digital infrastructure deployment, sometimes digital service providers withdraw or discontinue the provision of specific digital finance services to high-risk rural areas or communities.
- **Lack of adequate regulatory framework:** The regulation of payments and digital finance in India is a complex web of institutions and rule-setting bodies, which could potentially hamper its development.
- **Fear of being brought into the tax net:** There is a perception that moving out of the cash economy into the digitised financial sector means that individuals and small businesses who currently exist outside of the taxation system will be compelled to pay taxes, thus deterring them from transitioning.
- **Increased cyber security threats:** The financial sector faces multiple challenges such as data theft, phishing attacks, advanced malware, distributed denial of service attacks etc. Thus, people will be wary to adopt/invest in digital financial services.

Proper regulatory and consumer protection frameworks should be developed to sustain the digital financial industry. Customer protection frameworks should also be strengthened. Further, digital literacy should be disseminated widely under schemes such as Digital India, Pradhan Mantri Gramin Digital Saksharta Abhiyan etc. Also, more support for local level innovation can encourage entrepreneurs and institutions outside of metro cities to build digital products and services that respond to more regional or localized issues.

6. *COVID-19 has exposed gaps in India's domestic laws to deal effectively with outbreaks of infectious diseases, especially pandemics. Discuss. (150 words) 10*

Approach:

- Briefly explain India's current pandemic situation and laws available to deal with it.
- Mention the gaps in existing domestic laws to deal effectively with such situation.
- Conclude with a way forward.

Answer:

COVID-19 is the first pan India biological disaster being handled by the legal and constitutional institutions of the country. It has severely tested the capacity of both central and state governments in India.

It is for the first time that a pandemic has been recognized as a 'notified disaster' in the country by the Ministry of Home Affairs (MHA). Subsequently the Disaster Management (DM) Act has also been invoked for the first time in India to effectively manage this crisis. At the State level, Epidemics Act, 1897 was also invoked to tackle the pandemic.

However, the handling of the pandemic has fallen short due to various legal and institutional gaps such as:

- The **definition of 'lethal' or 'infectious' or 'contagious diseases'** has not been defined by any legislation. There is **no elaboration on the rules and procedures** for declaring a particular disease as an epidemic.
- There **are no specific provisions** on the sequestering and the sequencing required for dissemination of drugs/vaccines, and the quarantine measures and other preventive steps that need to be taken.
- DM Act was meant to be used in a situation where a state government was unable, on its own, to cope with the result of a natural disaster. It was **never meant to be a legal mechanism to control the otherwise functional state governments.**

- The management of a health crisis has **become an issue of law and order**. Major notifications and guidelines relating to COVID-19 are being issued by the MHA and not the Ministry of Health and Family Welfare. The language used is still one of law and order: “lockdowns,” “curfews,” “fines” and “surveillance.”
- There is **no clear delineation of the obligations of healthcare professionals** and other workers, juxtaposed with their **rights and the safety standards** that they should be entitled to
- The legal mechanisms do not reflect the present times as advanced technologies like travel by air, information spread through social media.
- A consolidated, pro-active policy approach is absent. In fact, there has been **ad hoc and reactive rulemaking**, as seen in the way migrant workers have been treated. Migrants issue has also exposed the lack of coordination between the Union and State governments.
- The legal architecture **only defines powers of the central and state governments** during the epidemic, but it **does not describe the government’s duties** in preventing and controlling the epidemic.
- The knee jerk and haphazard responses to current disaster are further **compounded by local level conflicts** between different departments of the same State, which end up hampering relief measures.

COVID-19 has provided an opportunity to look into the loopholes of our disaster management strategy. There is a need for a comprehensive legislation for effective management of public health emergencies covering processes and institutions to deal with health emergencies, social security measures for vulnerable sections, designating the authority etc.

7. Highlight the need for increasing private sector participation in space sector in India. Enumerate the steps taken by the government recently in this regard. (150 words) 10

Approach:

- Briefly discuss the current status of the space sector in India.
- Discuss the need for increasing private sector participation in space sector in India.
- Mention the steps taken by the government recently in this regard and conclude accordingly.

Answer:

Despite being one of the global leaders in space exploration, Indian industry has barely 2% share in the global space economy. In this context, the government under AatmaNirbhar Bharat Abhiyaan announced a role for the private sector in India’s space programme, including in satellite launches and space-based services.

Reasons for increasing private sector participation in the space sector in India:

- **India and the global space economy:** Greater involvement of private players will make ISRO more competitive and would help in meeting the expected demand surge in the coming years.
- **ISRO and its limited resources:** The opening up of the sector will help overcome manpower and budgetary constraints of ISRO. Private sector will also help in sharing the risk of high costs.
- **Strategic benefits:** Private participation will free up ISRO to concentrate on essential activities like research and development, planetary exploration, and strategic use of space, while freeing itself from ancillary or routine work, which could be done by the private industry.
- **Commercial benefits:** The private sector can increase the role of technology in other areas and can play a major catalytic role in the technological advancement and expansion of our industrial base. Further, commercialising and privatising will bring in much needed fresh ideas and perspective. This will also generate additional employment due to the growing number of new space companies and start-ups.

Steps taken by the government to increase privatisation in the space sector:

- Announcements under AatmaNirbhar Bharat:
 - Level playing field provided to private companies in satellites, launches and space-based services.
 - Predictable policy and regulatory environment to private players.

- Private sector will be allowed to use ISRO facilities and other relevant assets to improve their capacities.
- Future projects for planetary exploration, outer space travel etc. shall also be open for private sector.
- There will be liberal geo-spatial data policy for providing remote-sensing data to tech-entrepreneurs.
- **Indian National Space Promotion and Authorization Centre (IN-SPACe):** It will function as an autonomous body to provide a level playing field for private companies to use Indian space infrastructure.
- **NewSpace India Limited (NSIL):** Established in 2019 as a PSE, its mandate is to transfer small satellite technology to industry and mass produce SSLVs and PSLVs in partnership with private institutions. **Make in India:** 100% FDI has been allowed in the establishment and operation of satellites, subject to government approval.

Looking at the prospects of a space based economy, a Space Activities Bill, 2017 has also been drafted. It will bring more clarity on the role of the public and private sectors in space.

8. What do you mean by herd immunity? Also discuss the problems with primarily relying on this approach to stop the spread of infectious diseases. (150 words) 10

Approach:

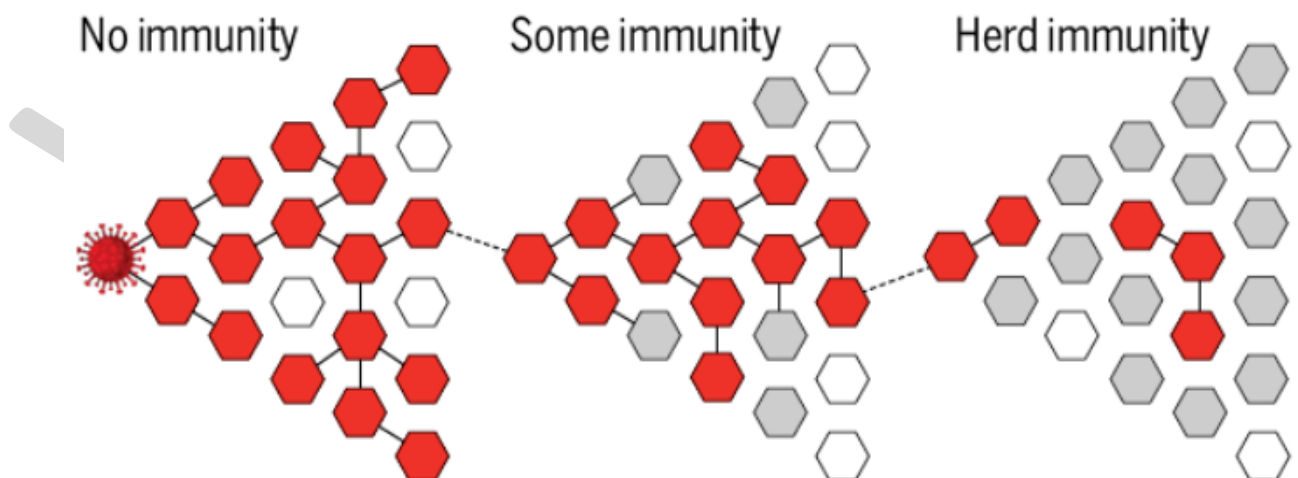
- Briefly introduce the concept of herd immunity.
- Write about the issues involved with herd immunity.
- Conclude accordingly.

Answer:

Herd immunity describes a situation where a sufficient proportion of the population has immunity to a given infection such that it slows or prevents disease spread. It is associated with basic reproductive number (R_0), which indicates the average number of people who will contract the disease from an infected person. Herd immunity is achieved when $(1 - 1/R_0)$ fraction of population has developed immunity from the disease.

For example, if we assume R_0 to be 2.5 for COVID-19, herd immunity will be achieved when about 60% of population have developed immunity to the disease.

Herd immunity makes it possible to protect the population from a disease, including those who can't be vaccinated, such as newborns or those who have compromised immune systems.



There are two ways in which the herd immunity for a particular disease can be obtained:

- through vaccination
- allowing sufficient numbers of people to get **naturally infected and getting recovered** thus developing antibodies against future infection.

However, there are some major problems with primarily relying on this approach without vaccination, to stop the spread of infectious diseases:

- **Issue of large number of deaths:** Developing herd immunity requires a majority of the population getting infected. So even if the mortality rate of disease is low still it will result in a large number of deaths which is not ethically justified.
- **Lack of clarity:** In cases like COVID-19 virus where there is lack of clarity whether infection will make a person immune to future infection and there might be chances of reinfection. In such cases herd immunity doesn't work.
- **Determining R0:** R0 in itself will vary from region to region. For example, an R0 of 2.5 for COVID-19 may be a reasonable number for the whole world, it will almost certainly vary considerably on a more local level, averaging much higher in some places and lower in others.
- **Herd immunity does not protect the vulnerable:** Even if the herd immunity threshold is reached by the population at large, a single infected person coming in contact with a vulnerable community like elderly people etc. can cause an outbreak.
- **Issue due to mutation of pathogen:** With a pathogen that has a very slow rate of mutation, someone with prior immunity through infection or immunization if gets exposed to the pathogen again has a good chance of being protected. But for pathogens with higher mutation rates there may develop protection against one form, but not against the new mutated forms.
- **Free-riders problem:** Some people choose to behave as free riders, benefitting from everyone else getting vaccinated, while abstaining from vaccination. If a population has too many of these free riders, the overall immunity level is compromised and herd immunity can be lost.

So, natural herd immunity should not be relied upon as the first priority to fight off a pandemic but active steps should be taken to prevent the outbreak of a disease till the time a vaccine is developed.

9. *Despite the acknowledgement of terrorism as a global concern, the Comprehensive Convention on International Terrorism is yet to be adopted. What are the reasons and implications of this impasse?* (150 words) 10

Approach:

- Briefly discuss the Comprehensive Convention on International Terrorism (CCIT).
- List the reasons behind the non-adoption of CCIT.
- Discuss its implications.
- Conclude the answer on the basis of the above points.

Answer:

The Comprehensive Convention on International Terrorism (CCIT) is a draft proposed to the United Nations General Assembly by India in 1996 with the objective of providing a comprehensive legal framework to counter terrorism. It is intended to define terrorism, ban and prosecute all terrorist groups, cut off access to funds and safe havens of terrorist groups and amend domestic laws to make cross-border terrorism an extraditable offence.

Despite various efforts, the conclusion and ratification of the draft remain stuck, mainly due to opposition from three blocs:

- **The US and its allies** want the draft to exclude acts by soldiers in international interventions without a UN mandate. Otherwise, it could be applied to its own military forces especially with regard to interventions in Afghanistan and Iraq.
- **The Latin American countries** want the draft to cover state terrorism and violation of international humanitarian laws and human rights.
- **The Organization of Islamic Countries (OIC)** wants exclusion of national liberation movements from the draft definition of terrorism. Otherwise, it could be used to restrict the right of self-determination of groups in Palestine and Kashmir.

Lack of a comprehensive international agreement on terrorism has the following implications:

- In the absence of an internationally accepted definition, many **countries have expanded the scope of terrorism in their domestic laws** and have defined the term using broad and open-ended language. Further, exceptional powers are given to law enforcement agencies in this regard. This increases the likelihood of violation of human rights, including torture and ill-treatment.
- **It hinders international cooperation** due to lack of harmonisation between laws of nation states and normative standards on countering terrorism. In the wake of increasing terrorist activities in various parts of the world, international cooperation is imperative to maintain global peace and security.
- It **dilutes the credibility of the United Nations (UN)** regarding its ability to navigate differences among countries and invigorate action on an issue of pressing global concern.

To create an effective counter-terrorism framework, countries around the world should rise beyond their self-interest and look into the problem of terrorism through a broader perspective. CCIT will provide a strong legal basis for the fight against terrorism and it will be in the interest of all member states of the UN to have a multilateral and collective dimension of counter-terrorism efforts.

10. In view of the need for effective border management necessitated by complexity of prevailing challenges, India needs to reform its Border Security Force (BSF). (150 words) 10

Approach:

- Write about the complexity of prevailing challenges in the border management.
- Briefly mention about the mandate of BSF and suggest measures to reform BSF.
- Conclude appropriately.

Answer:

India has over 15,000 kms. of land border and over 7,500 kms of coastline, proper management of which is vitally important for national security. In 1965, the BSF was created as a paramilitary force for the purpose of guarding India's land border with Pakistan and Bangladesh during peacetime and preventing transnational crimes. These long borders face a number of challenges owing to geographical, historical, security and administrative reasons, such as:

- **Complex and diverse terrain** including desert, marshes, snow-capped mountains and plains on borders makes border management difficult.
- **Inadequate border fencing and porous nature of borders** at several points provides a pathway for smuggling, fake currency trafficking in arms, drugs, people and cattle.
- **Infiltration and Cross-border terrorism** to wage a proxy war against India.
- **Multiplicity of forces** on the same borders leading to problems of coordination, command and control.
- **Lack of infrastructure with border forces** including shortage both in terms of manpower and infrastructure.
- **Inadequate attention to the concerns of local people** in border areas which is exploited by hostile elements to create a feeling of ill will against the security forces & Government.

In the light of aforesaid challenges, the BSF needs to implement certain reforms, such as:

- **Resource support:** Various steps need to be taken
 - **Better infrastructure and technological support:** Troops should be provided with fortified bunkers, better rifles and ammunition and high-tech surveillance devices such as sensors, detectors, cameras, etc. as well as existing equipment for round-the-clock surveillance of the international border.
 - **Health support:** Efforts for **better stress management** of troops should be taken which emanates from **adverse service conditions and the inability to meet urgent family obligations**. BSF personnel must also be allowed adequate period of home stay.
- **Leadership:** The cadre officers from the BSF who are well aware of the ground realities and are trained in border management, and not the IPS officers, should lead the BSF. The BSF also faces stagnation due to slow promotion leading to dissatisfaction in the personnel.

- **Pay and Allowances:** There has been a long standing grievance voiced by many that BSF soldiers, treated as civilian employees, are not at par with the members of armed forces in terms of martyrdom in line of duty. They also earn less as their salaries, allowances and post-retirement benefits are regulated by civil rules. Some sort of parity with the army for rendering the same service should be provided to BSF personnel.
- **Soft skills training:** The concept of smart border personnel needs to be adopted so as to have effective smart border management practices besides dynamic training policies. In view of increased interaction with civilians both at the borders and in counter-insurgency areas, soft skills assume importance besides the conventional training.

The BSF needs to take urgent reforms to maintain its edge and successfully discharge its duties securing overall security of the country.

11. Though privatization is considered as a prominent component of economic reforms, India has been ambivalent on the subject even in the post reform period. Discuss. (250 words) 15

Approach:

- Briefly define the term privatization.
- Discuss why it is considered as a prominent component of economic reforms.
- Highlight the ambivalence towards privatization in India.
- Mention the reasons for this ambivalence.
- Conclude with a way forward.

Answer:

Privatization refers to the **transfer of ownership, property or business** of the state-owned assets to the private sector. It is one of the **key components of economic reforms** as it has its own **benefits**, including:

- Privatization provides a necessary push to the underperforming PSUs by bringing fundamental **structural changes and increasing efficiency** with implementation of best global practices and optimised management of resources.
- It has a positive impact on a country's economic situation as it **reduces the government's total expenditure and increases the tax base**, thereby aiding in ending the vicious cycle of over-borrowing and continuous increase of national debt.
- It is seen as an answer **to reduce politicization and administrative degradation** of PSUs.
- It **increases investment** and in the long run creates **viable infrastructure** for the economy.

Despite the growth of the private sector since the 1991 reforms and its increased contribution to the economy in the recent decades, India is **still not certain about the role of the private sector**. The Economic Survey 2016-17, mentioned that India has distinctly **anti-market beliefs** as compared to other countries with similar low initial GDP per capita levels. This ambivalence can be seen in the **difficulty in privatizing** even those public enterprises which have become financially unviable, such as the Air India.

Reasons for the ambivalence are:

- **Self-interest vs public interest-** The primary motive of private enterprises is **maximizing profits** which does not always coincide with the **broader social concerns**. E.g. As per the RBI, top 50 **wilful defaulters** in India have forced the banks to write off outstanding loans worth 68,600 crores till 2019.
- **Corporate governance issues-** There have been instances of **poor governance** by some private companies which erode the confidence generated by success stories like **Delhi International Airport Ltd.** For instance, Satyam scam, ICICI Bank-Videocon loan scam, Yes Bank crisis etc.
- **Political economy:** The privatisation efforts continue to be **seen with suspicion** and businesses close to the ruling establishment are still seen to be gaining. The government has also been **fairly reluctant in creating more space for the private sector** often due to **fears of political backlash**, such as witnessed against recent attempt to privatize defence production.

- **Enabling environment for private sector:** The state has not been able to create the necessary capacity in the system required for smooth functioning of the private sector. **Regulatory gaps** and lack of clarity in rules in some areas and **excessive compliance burden** in others impedes the confidence in ability of private companies to succeed in India.

In order to overcome this ambivalence, the government needs to create a **regulatory environment**, where it can **effectively intervene** if the market fails and also protect the interests of consumers. The **ease of doing business** should be further improved for the private players to **enter as well as exit** the market. Also, the private sector must also enforce **high corporate governance standards** and transparency in their functioning. Recently, the government has announced that there will be a **maximum of four public sector companies** in strategic sectors while state-owned firms in other segments will eventually be privatised.

12. Highlighting the potential of micro and small enterprises in the food processing sector, enumerate the challenges that they face. In this regard, discuss the importance of the Scheme for Formalisation of Micro Food Processing Enterprises (FME). (250 words) 15

Approach:

- State the potential of micro and small enterprises in the food processing sector.
- List the challenges faced by the micro and small enterprises in the food processing sector.
- Explain the significance of the Scheme for Formalisation of Micro Food Processing Enterprises (FME) in this regard.
- Conclude accordingly.

Answer:

Micro and small enterprises constitute an important component of the food processing sector. They constitute almost **98% of the sector** and 66 per cent amongst them are based in rural areas.

These units account for **74% of employment** in the food processing sector. Moreover, the micro food processing sector has the potential to **generate an additional 9 lakh skilled and semi-skilled jobs**. The importance of micro food enterprises also lies in its contribution to **increase in exports and GDP**, and **inclusive growth**. Strengthening micro and small food enterprises will lead to **reduction in food wastage**, creation of **off-farm job opportunities**, and aid in achieving the overarching objective of **doubling farmers' income**.

Challenges faced by micro and small food processing sector:

- **Credit related issues:** Due to high cost of institutional credit, the sector is largely dependent on informal sources for funding. Lack of sufficient collateral and high working capital needs hinder the expansion plans.
- **Lack of access to modern technology:** Due to their unorganised nature, the micro and small food enterprises lack access to new technology and innovation.
- **Lack of forward linkages:** It leads to low outreach and non-availability of newer markets.
- **Compliance with health and safety standards:** The need for such compliance results in rising costs for the small enterprises. On the other hand, low quality products impact export competitiveness.
- **Inadequate infrastructure:** A lot of produce from the farm gate is lost due to inadequate cold chain infrastructure as well as logistics infrastructure, which predominantly rely on traditional modes.
- **Ease of Doing Business:** Government procedures and rules for establishing new units often lead to delays in getting clearances.

Keeping in mind the above identified issues and at the same time promote the vision of 'Vocal for Local', **Scheme for Formalisation of Micro Food Enterprises** has been launched by the government. This will help micro food processing enterprises become more competitive and enable economies of scale across the production value chain. The scheme is important in the following ways:

- **One District One Product (ODOP) Approach:** It adopts a **cluster-based approach** across states to reap benefits of scale in terms of procurement of inputs, availing common services and marketing of products.
- **Strengthening capacities of support systems:** It will leverage the collective strength of FPOs, SHGs, Cooperatives and existing FP enterprises in the unorganized sector by:
 - Skill training, seed capital to SHGs for loan to members for working capital and small tools,
 - Grant for backward/forward linkages, common infrastructure, packaging, marketing and branding.
- **Increase in access to credit:** It envisages increased access to credit by existing micro food processing entrepreneurs, women entrepreneurs and entrepreneurs in the Aspirational Districts.
- **Infrastructural development:** Support will be provided through credit linked capital subsidy for development of common infrastructure including common processing facility, lab, warehouse, etc.
- **Enhanced compliance with food quality and safety standards:** The scheme aims to help nearly two lakh unorganised micro-food enterprises achieve technical upgradation in line with FSSAI's standards as well give them marketing and branding support.
- **Focus on perishables:** It extends Operation Greens Scheme to include all fruits and vegetables for better price realisation for farmers and reduction in wastage.

By adopting a **convergence framework**, this scheme makes an attempt to fill in the gaps, where support is not available from other sources, especially for capital investment, handholding support, training and common infrastructure.

13. Discuss the significance of micro-irrigation in a situation of water crisis in India. Also, mention the challenges with regard to adoption of micro-irrigation systems in India. (250 words) 15

Approach:

- Briefly explain water scarcity in India and need for efficient irrigation technologies.
- Explain significance of micro-irrigation for India.
- Mention the challenges related to adoption of micro-irrigation systems.
- Conclude with a way forward.

Answer:

India accommodates more than 17% of the world population and only 4% of fresh water resources, out of which around 80% is used in agriculture alone. This calls for efficient irrigation technologies to increase water productivity.

Micro-irrigation (MI) techniques such as drip irrigation, sprinkler, rain-gun, porous pipe system etc. where water is supplied directly to the crops is considered as an innovative water saving technology.

Significance of micro-irrigation for India:

- **Water use efficiency:** It helps in significant reduction of water loss due to runoff, evaporation etc. It further aids soil health management and prevents water logging. This is significant for India where agriculture is largely rain-fed and faces vagaries of aberrant monsoons, soil degradation, nutrient deficiencies and declining groundwater table.
- **Energy efficiency:** It can effectively save power due to less water use and thereby reduction in energy requirements for pumping groundwater.
- **Fertilizer use efficiency:** Proper mixing of fertilizers and water, control of optimum dosage and direct application of fertilizers to the root zone result in the saving in fertilizer consumption. This is significant for India where food and fertiliser gets highest subsidy allocation and non-judicious application of fertiliser is reducing soil fertility in many regions.
- **Increase in productivity:** It increases the crop yield (quantity and quality). Increasing population and water scarcity demands increased productivity in the long run. An increase in productivity would also support doubling farmers' income.

- **Irrigation cost saving:** It will reduce the overall cost of irrigation in long-term due to decrease in labour requirement for irrigation, land-levelling, weeding and fertilizer application.
- **New crop introduction:** An improved water scenario helps in addition to new crops or promotes inter-cropping. Moreover, the reduction in spacing between the plants helps in accommodating more numbers of plants.
- **Infrastructure development:** Infrastructure of MI systems can be created in months unlike other systems where it takes years to develop infrastructure such as dams, canals, etc.

That's why MI has been given special importance in Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) with the aim of extending irrigation cover ('Har Khet Ko Pani') and improving water use efficiency ('Per Drop More Crop'). However, despite promoting MI through heavy subsidies, the coverage under MI is less than 15% of the potential.

Following challenges exist in its widespread adoption:

- **High initial cost:** The cost of initial setup is too high which is not feasible for over 85% Indian farmers who are small and marginal.
- **Energy crisis:** Power outages, voltage fluctuations and unscheduled interruptions exist across rural and urban India.
- **Policy concerns:**
 - Delays in subsidy disbursement largely because of approving installation of equipment when funds for subsidy aren't yet available.
 - GST rate on drip irrigation systems exists at 12%.
 - Widespread private investment is missing.
- **Technical Support:** There is lack in support for maintenance (for example, rodent attack on piping, pore-clogging) and operation.

In that context, many studies have suggested promotion of cost-effective alternatives, relaxation of farm size limitation in providing micro-irrigation subsidies and creation of a single state-level agency or a special purpose vehicle (SPV) for speedy implementation of the micro-irrigation program.

14. India needs to integrate energy technology innovation in its broader energy policy. Highlighting its significance, mention the steps taken by government in this regard.

(250 words) 15

Approach:

- Explain the meaning and role of energy technology innovation.
- Highlight the significance of energy technology innovation for India.
- Enlist the steps taken by the government to integrate energy technology innovation in its broader energy policy.
- Conclude with a way forward.

Answer:

India's sustained economic growth is placing an enormous demand on its energy resources, energy systems and infrastructure. Energy technology innovation includes the set of processes, which lead to **development of improved technologies** that can augment energy resources. India's **draft National Energy Policy, 2017** has a dedicated focus on energy technology innovation and underlines that it can play a central role in "enhancing supply of energy at affordable prices, and delivering it efficiently and sustainably".

The **significance** of integrating energy technology innovation in India's broader energy policy can be seen as:

- It will help in **improving India's energy efficiency** to **fulfil the rising energy demand** of the country which is expected to double by 2030. Further, energy access is the key to **social as well as economic growth** in the country.
- Adoption of **clean energy technologies** like geothermal energy, sustainable buildings will not only help in reducing the adverse environmental impact but will also enhance the prospects of

India achieving **its Sustainable Development Goals** and **Intended Nationally Determined Contributions** (INDC) under the United Nations Framework Convention on Climate Change (UNFCCC).

- It will **improve India's capacity in utilizing the unexplored technologies and resources** like electric mobility, advanced biofuels, shale gas etc. This would in turn help India create a **buffer against import dependence** on conventional resources and progress towards **energy security**.

In this context, **India has taken several steps** which are as follows:

- India is a founding member of **Mission Innovation** and part of its steering committee which aims at accelerating global clean energy innovation with the objective to make clean energy widely affordable.
- **The National Policy on Biofuels**, 2018 envisages an indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel by 2030.
- In 2018, India launched the **Global Cooling Prize** which is an impact-oriented technology innovation programme to encourage more creative solutions to pressing national challenges like climate change etc.
- **India Cooling Action Plan (ICAP)**, 2019 with the aim to map the technologies available to provide sustainable cooling while keeping in mind the need to protect the ozone layer. It provides a 20-year perspective, with projections for cooling needs in 2037-38.
- To address **specific technology areas**, the government has initiated energy-related national missions, building on the National Action Plan on Climate Change. These missions mention RD&D components alongside their deployment targets and incentive mechanisms. These include:
 - **National Electric Mobility Mission (2012)**,
 - **National Smart Grid Mission (2015)**,
 - **National Mission on Advanced Ultra Super Critical Technology (2017)**,
 - **National Mission on Transformative Mobility and Battery Storage (2019)** etc.

Going forward, India should lay out a **long-term energy RD&D strategy** and technology roadmaps. It should establish stronger **inter-ministerial co-ordination** to clarify innovation priorities and **consolidate** energy RD&D activities. Currently, India's energy RD&D landscape is dominated by the public sector. So, the role of private sector actors in technology innovation needs to be increased with focus on public-private collaboration to optimally tap the RD&D capabilities and scale up domestic technology development and deployment.

15. Discuss how the idea of Aatmanirbhar Bharat goes beyond the traditional view of self-reliance. (250 words) 15

Approach:

- Briefly elaborate the idea of Atmanirbhar Bharat Abhiyan.
- Highlight the traditional view of self-reliance.
- Discuss the essential elements of Atmanirbhar Bharat, which takes it beyond this traditional view.
- Conclude with a way forward.

Answer:

Atmanirbhar Bharat Abhiyan is a mission advocating a **self-reliant strategy to protect and rebuild the path of Indian economy** from the adverse effects of the recent coronavirus pandemic and new emerging global scenario post COVID. It includes an **economic package of Rs. 20 trillion** for the same.

India's **traditional view of self-reliance**, was signified by the policy of **isolationism and protectionism** which included:

- The strategy of **import substitution**, which relied extensively on imposing high import tariffs and **discouraging foreign trade**.

- **Centralised, top-down model** of development directed from the Planning Commission.
- **Dominant role** was played by the **public sector** in developing domestic industrial capacity.
- **Excessive bureaucratic regulation** in the form of **license-permit raj** and **inspector raj** in the pre 1991 reform era.

The idea of Atmanirbhar Bharat **goes beyond this traditional view**, as it envisages India's **active participation in post-COVID-19 global supply chains**. Self-sufficiency in the present context refers to improving efficiency, competing with the world and simultaneously helping the world by actively participating in the post-COVID global supply chain.

Following elements are essential to this idea:

- **Developing domestic resilience:** It seeks to improve **competitiveness** of Indian industry and **quality** of products so as to **encourage rather than coerce consumption** of indigenous products. It seeks to reduce **trade imbalance** by broadening the **basket of exports**, which has otherwise been facing stiff competition from other countries. For instance, government announced incentives to promote production of bulk drugs and medical devices.
- **Creation of safety nets:** It also seeks to develop **resilience at individual level**, especially for the vulnerable groups. Important steps taken towards this include the health insurance system (Ayushman Bharat), and the direct benefit transfer mechanism based on Jan Dhan-Aadhaar-Mobile.
- **Decentralized Localism:** It is about creating a system that takes pride in local brands, encourages local capacity-building and indigenisation. The citizens are urged to be **vocal about their local products** and help these local products become global.
- **Promoting Indian entrepreneurship:** This mission focuses on reforms and improving **ease of doing business**, so that entrepreneurship is freed from bureaucratic hurdles. It seeks to open the gates for **research, innovation and employment generation**. Recently, various reforms were announced in the agriculture sector pertaining to APMC Act.
- **Push towards privatization:** Under it, the government intends to privatise all **non-strategic public sector entities** and even open up of erstwhile reserved sectors like defence and space to private investment. For instance, the defence ministry recently placed a list of 101 items under import embargo to boost the indigenous manufacturing of military hardware.

Atmanirbhar Bharat is important for faster **economic growth**, absorbing the **shock of global supply chain fragility**, filling up the **developmental gaps**, ensuring health and economic security and to deal with any **adverse geopolitical situation**.

However, to successfully implement the vision of Atmanirbhar Bharat, several large scale and long-term measures like making **subsidies performance dependent** and **strengthening public regulation** will have to be taken in conjunction with aforesaid measures. More importantly, increased investment in **education** and **skill development** is imperative to complement the structural reforms announced in the package.

16. *The increased frequency and intensity of climate extremes in the Indian subcontinent can have grave implications. Comment. Also, suggest some measures that can be taken towards building climate-resilience in India. (250 words) 15*

Approach:

- Substantiate the statement in the first sentence briefly with relevant examples or data.
- Write about implications of increased climate extremes and your observation on the issue.
- Write about steps that need to be taken to build a climate-resilient India.
- Conclude appropriately.

Answer:

As per "**Assessment of Climate Change over the Indian Region**" report, Indian subcontinent has witnessed climate extremes. Average temperature has risen by around 0.7° C during 1901-2018, rainfall in summer monsoon declined by 6% during 1951 to 2015, drought affected area increased

by 1.3% per decade during 1951-2016 and sea surface rise in North Indian Ocean has accelerated to 3.3 mm per year between 1993 and 2007.

Such increased frequency and intensity of climate extremes can have grave implications, such as:

- **Food Security:** These changes can disrupt rainfed agricultural food production which accounts for 60% of agricultural GDP of India.
- **Water Security:**
 - Frequent droughts and floods hinders surface and groundwater recharge.
 - Rising sea level leads to intrusion of saltwater in the coastal aquifers contaminating the groundwater. E.g. in Gujarat, Tamil Nadu, and Lakshadweep etc.
 - Retreat of glaciers in Hindukush Himalayan region may impact the water supply in the major rivers and streams.
- **Energy demand:** Rising temperatures are likely to increase energy demand for cooling.
- **Human Health:** These events could elevate risk of heat strokes, cardiovascular and neurological diseases, stress related disorders and spread of vector-borne diseases such as malaria and dengue fever.
- **Biodiversity:** Many species may face increasing threats, particularly those species which are adapted to narrow environmental conditions. For example – coral reefs.
- **Economy:**
 - According to the International Labour Organization, the loss in productivity by 2030 because of heat stress could be the equivalent of India losing 34 million full-time jobs.
 - According to the Union Government, Desertification, land degradation and drought cost India about 2.5% of gross domestic product in 2014-15.
 - Sea-level rise increases the vulnerability of some large cities located on the coastline.
- **Social issues:**
 - Climatic disasters such as droughts, cyclones and floods induce large scale migration.
 - Repeated crop failures add to the burden of already distressed farmers who then commit suicides.

In this regard, India has taken various measures like NAPCC, INDCs, and SDGs among others. Further, following steps can be taken towards building climate-resilience in India:

- **Make vulnerability assessment central to long-term planning** for developing region and sector-specific adaptation and mitigation strategies by inclusion of detailed, regional-scale climate change risk assessments.
- **Greater emphasis on widening observational networks**, sustained monitoring, expanding research on regional changes in climate and their impacts. For instance, networks of tide gauges with GPS along the Indian coastline would help monitor local changes in sea level.
- **Afforestation efforts:** It helps to mitigate climate change through carbon sequestration and will also help in improving resilience against droughts, protecting coastal areas and will support native wildlife and biodiversity.
- **Building community awareness:** Strategies should be formulated to effectively engage citizens by disseminating public messages through media outlets and informational materials on risks associated with climate change and simple steps citizens can take to effectively tackle them.
- **Utilising traditional knowledge:** The in-depth traditional knowledge of land and nature can be used as a reference while formulating the climate-resilient strategy. For example – Kuttanad Below Sea Level Farming System in Kerala.

Apart from these, equity and social justice should be ensured for building climate resilience since the most vulnerable people such as the poor, the disabled, outdoor labourers and farmers will bear the brunt of climate change impacts. Also, India needs to take a leading role in bringing developed as well as developing and underdeveloped nations on common platforms to build climate resilience.

17. **Approach to flood control in India should evolve from piecemeal measures to an integrated basin management. Comment.** (250 words) 15

Approach:

- Briefly write about the current approach to flood control in India.
- Highlight the drawbacks in the current approach to flood control.
- Discuss the significance of integrated basin management.
- Conclude the answer accordingly.

Answer:

Flood management is an essential component of disaster management in India. As per the Central Water Commission (CWC) data, in the last 65 years (1952-2018), there was not a single year when floods did not impact the country.

The current approach to flood control in India is **focused on reactive practices** to reduce exposure to flooding and susceptibility to flood damage. It is done mainly through structural developments like construction of dams, embankments and dredging, which separate the rivers from their floodplains. However, these ad hoc interventions are only partially effective and delay rather than mitigate flood risk.

Drawbacks of the current preventive measures to flood control include:

- **Dams and reservoirs** are built across rivers to mitigate floods by absorbing the peak river flows and regulating the flows downstream into rivers. But, sometimes the release by the dams go beyond the capacity of the river channels downstream leading to floods in low-lying areas.
- **Embankments** are constructed along the river channels only as an ad hoc measure for short-term mitigation. Long-term durability is ignored in their design and construction. Thus, the embankments are weak and are regularly breached.
- Further, not allowing water from areas outside the embankments to come in the river channels leads to flooding in outside areas and seepage from underneath the embankments.
- **Dredging** is done to increase the depth of river channels and enhance the carrying capacity of the rivers by removing silt from river channels. However, rivers like Brahmaputra deposit more sediment every year than is taken out, making this exercise very expensive and futile.

Overall, these measures have been piecemeal and short-term, and the associated problems are not addressed. Thus, focus needs to be on **integrated basin management, which entails the following:**

- It considers the river basin as a **unique dynamic system** and aims at **maximizing the net benefits from flood plains** such as channeling flood water for irrigation, rainwater harvesting and inland navigation, safeguarding wildlife habitats etc. while **minimising loss of life and property**. For instance, the Telugu Ganga project aims to utilise the flood water of Krishna and Pennar rivers to irrigate the drought-prone region of Rayalaseema.
- **It is a multi-pronged strategy** ranging from **modifying floods by means of structural measures** such as construction of reservoirs, levees etc. to learning to adapt to floods by **incorporating other non-structural measures** such as adequate forecasting and warning, land use planning by growing crops that are suitable for water-logged areas like boro paddy etc.
- It emphasises on **cross-disciplinary and inter-state coordination** of water, land and related resources in a river basin, watershed or catchment to achieve long-term sustainability. For example, following the establishment of the Bhakra Beas Management Board (1967), benefits are shared among Himachal Pradesh, Punjab, Rajasthan etc. for purposes such as hydropower and irrigation through an integrated operation policy.
- It is a **holistic approach, which** involves the management of various micro-watersheds in both catchment and flood prone areas, thus ensuring that every single change affects the other components in a positive way.
- It advocates **adequate participation by all relevant stakeholders** in well-informed and transparent planning and decision-making processes. For example, the Brahmaputra River Basin Resilience Building Programme is a community-based preparedness approach to disaster risk reduction in the floodplain of Jorhat, Golaghat and Majuli districts of Assam.

The acknowledgment of the necessity of a wider multi-disciplinary approach requires a paradigm shift from flood control to flood management. Further, recognising that floods can never be fully constrained, but can be adequately managed is pertinent in this context.

18. What do you understand by Convalescent Plasma Therapy? Enumerate the potential uses and concerns in its application. (250 words) 15

Approach:

- Explain the mechanism of Convalescent Plasma Therapy.
- Highlight the potential benefits as well as risks associated with it.
- Conclude accordingly.

Answer:

Convalescent Plasma Therapy aims at using **antibodies** from the blood (plasma) of a **recovered patient** to treat those critically affected by the same infection. The therapy is based on the premise that the recovered patient's antibodies, once administered, will begin targeting and fighting the infection in another patient.

Potential uses of Convalescent Plasma Therapy:

- In the past, plasma therapy has been used against the 1918 flu, polio, measles, rabies, hepatitis B and Ebola, MERS, H1N1, SARS outbreaks.
- During the SARS outbreak (2002), various studies suggested that it resulted in earlier recoveries in patients compared to regular drugs.
- A study conducted to analyse the impact of the plasma therapy on H1N1 outbreak (2009) found that it helped reduce respiratory troubles and lowered the risk of mortality.
- Hence, it is being thought of as a tool to address future disease outbreaks. Many countries including India are currently exploring the feasibility of using convalescent plasma therapy for treating patients with severe symptoms of coronavirus (Covid-19).
- It can be used to immunize those who are at risk of contracting Covid-19 such as health workers and families of patients.

Concerns around Convalescent Plasma Therapy:

- **Transfer of blood substances:** As the blood transfusion takes place, there are risks that an inadvertent infection might get transferred to the patient.
- **Unknown variables:** The duration of plasma protection is unknown. Based on the amount and type of transfused antibody, immunity could last from weeks to months. Another important unknown factor is the timing of plasma therapy infusion.
- **Logistical challenges:** Convalescent plasma therapy involves many logistical challenges, including the donor's availability and willingness; apheresis center capacity; storage and transportation of plasma concentrate; and testing for the adequacy of antibody titers.
- **Antibody-dependent enhancement (ADE):** Antibodies that bind to a virus may be taken up by cells expressing antibody receptors. This could enable the virus to enter cells that are not normally susceptible to infection, which may increase the number of new viral particles made.
- **Effect on immune system:** Antibody administration may suppress a body's natural immune response, leaving a patient vulnerable to subsequent re-infection.
- **High-risk patients:** Elderly population, patients with weak heart or lungs may not tolerate receiving such a large volume of plasma. This can lead to a complication known as 'transfusion associated circulatory overload'.
- **Limited testing numbers:** Until now, sample sizes in Covid-19 plasma therapy trials have been few to arrive at definite conclusions. There are many unknowns regarding duration of treatment, impacts on a wide range of patients, improvement in patients' condition, etc. that need to be addressed.

Though India should explore new methods to tackle the Covid-19 crisis, the decision on implementation of any treatment/ therapy should be based on the efficacy of the method to treat the patients. In this context, WHO's study has shown that the technique was not effective in treating Ebola-virus infected patients.

19. *Given the diverse security challenges as well as external and internal linkages, developing a National Security Strategy for India requires a comprehensive approach. Explain.*

(250 words) 15

Approach:

- Introduce by giving a brief background on the security scenario in India.
- Mention how a comprehensive approach is significant for developing National Security Strategy.
- Conclude appropriately.

Answer:

India faces four primary threats to its national security. Externally, its conflict with Pakistan is driven by competing geopolitical interests and bitter historical legacies. Furthermore, it faces Chinese aggression on the borders. Internally, India faces a number of secessionist and insurrectionist movements, the most prominent of which are the Maoist Naxalites. The diversity across religion, caste, class etc. often takes violent undertones and leads to internal security challenges. The challenges in the maritime domain, transnational and organized crimes etc further exacerbate these challenges.

In this context a comprehensive approach for National Security Strategy (NSS) holds significance as:

- **No clear cut distinction between domestic and external threats:** Various threats, like terrorism, are linked to both domestic and external actors, which require coordination and action on the part of various actors.
- **Understanding the cause of instability:** Threats to domestic peace and stability may arise from economic and social grievances. A unidimensional approach of the state to use coercive power may not only leave these grievances unaddressed but also exacerbate the situation.
- **Cross-domain linkages:** Threat to national security may be rooted across different domains. For instance, the vulnerability of our borders is linked to a large-scale smuggling and contraband trade that permits channels through which terrorists and criminals find easy access. So, the policy interventions need to be multi-dimensional designed to effectively tackle these linkages.
- **Technology complexity:** New technologies such as the Internet and digitization have created new and serious vulnerabilities and security risks. Cyber security demands the identification of critical infrastructure that may be vulnerable to cyber-attacks, and the development of human resources capable of identifying attacks and protecting and restoring critical systems, strongly rooted in policy.
- **Conflict with rights of the citizens:** The state's use of advanced digital technologies for surveillance and intelligence gathering leads to a trade-off between enhanced security and the citizens' rights guaranteed by the Constitution. This must be clearly spelt out for the people of the country and well-considered solutions put forward in the comprehensive strategy.
- **Changing geo-political environment:** Changes in geo-political scenario influences the nuclear security environment and thus affects India's security. In such a scenario, India needs to determine its role in shaping of the new nuclear order.
- **Climate change:** Ecological degradation and climate change have a significant impact on national security. For instance: melting of glaciers may have direct consequences on the deployment of troops at India's high-altitude border locations. Sea-level rise due to global warming may inundate naval bases along the coasts. A comprehensive strategy must anticipate these consequences formulate coping measures.

In this regard, previous exercises to promote national security could serve as useful reference material for NSS like reports of **Kargil Review Committee (2000)**, **Naresh Chandra Task Force on Security (2012)**, and **document prepared by the National Security Advisory Board (2015)**. Also, recently a **Defence Planning Committee** was set up to assist in the creation of the National Security Strategy.

NSS for India needs to take a comprehensive approach highlighting the inter-linkages and feedback loops among them and on that basis formulate a coherent template for multi-disciplinary and multi-sectoral interventions.

20. **What do you understand by Critical Information Infrastructure? Highlight the significance of Critical Information Protection and state the measures taken to ensure the same.**

(250 words) 15

Approach:

- Explain what you understand by Critical Information Infrastructure (CII).
- State the significance of protection of Critical Information Infrastructure.
- List the measures taken by the government to safeguard CII in India.
- Conclude on the basis of the above points.

Answer:

The **Information Technology Act, 2000** defines Critical Information Infrastructure (CII) as 'the computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety'.

Critical Information Infrastructure Protection is acknowledged as a vital component of India's national security policy. It has the following significance:

- **Encompasses crucial sectors:** These include nuclear power, banking, finance, information and communication technology like satellite communication, civil aviation, railways, online payment gateways etc.
- **Increased vulnerability:** Global competitions and geo-political confrontations fuel the desire among governments to develop communication network targeting capabilities since they expand horizons of war beyond kinetic operations. Examples include cyber-attacks by Russia on Georgia in 2008 and use of Stuxnet malware to damage Iran's nuclear facility.
- **Interdependency:** Critical infrastructure components depend on each other for substrate, data, information, energy etc. Any delay or disruption in the functioning of one component can potentially spread across other CIIs, resulting in political, economic, social or national instability. They are also geographically dispersed across the length and breadth of the nation.
- **Involvement of multiple stakeholders:** Protection of critical infrastructure involves different perspectives such as law enforcement perspective, national security perspective etc. They are controlled by multiple actors spread across government or privately owned enterprises, having diverse types of technologies in place.

The increasingly high dependence of critical sectors on CII coupled with a wide variety of threats, necessitate the need for effective policies and institutional frameworks to protect CIIs.

Steps taken by the government in this regard include:

- **Creation of National Critical Information Infrastructure Protection Centre** as the nodal agency under Section 70A(1) of the Information (Amendment) Act, 2008, for taking all measures including associated research and development for the protection of CIIs in India.
- **Implementation of National Cyber Security Policy, 2013** to create a secure cyberspace ecosystem and strengthen the regulatory framework.
- **Enactment of the Information Technology Act, 2000**, which deals with electronic transactions, digital signatures, cyber-crimes, cyber security, etc.
- **Establishment of Computer Emergency Response Team CERT-In**, a national nodal agency to respond to computer security incidents as and when they occur.
- **Establishment of a National Cyber Coordination Centre (NCCC)** to scan internet traffic coming into the country and provide real time situational awareness and alert various security agencies.
- **Setting up a Defence Cyber Agency** to handle cyber security threats faced by the tri-services and to frame a long-term policy for the security of military networks.

With rapidly growing interconnected, interdependent organisations and increasing digitisation, cyber security challenges will only increase with time. To safeguard and secure CII, all stakeholders have to work together and evolve innovative solutions, share best practices, coordinate joint exercises, map vulnerabilities, and conduct countermeasures.