1. What is cloud computing? Discuss the recent government efforts in the field of cloud computing.

Approach

The candidate needs to address the question in two parts where the first part should explain what is cloud computing and the second part should discuss the recent government measures in the field of cloud computing as well as some way forward.

Introduction

Cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet ("the cloud") to offer faster innovation, flexible resources, and economies of scale.

Body

- Cloud computing is named as such because the information being accessed is found remotely in the cloud or a virtual space. Companies that provide cloud services enable users to access all their data via the Internet. This means the user is not required to be in a specific place to gain access to it, allowing the user to work remotely.
- Cloud computing takes all the effort involved in crunching and processing data away from the device one carries around or sit and work at. The Internet becomes the cloud, and one's data, work, and applications are available from any device with which one can connect to Internet, anywhere in the world.
- Cloud computing can be both public and private. Public cloud services provide their services over the Internet for a fee. Private cloud services, on the other hand, only provide services to a certain number of people.

Cloud computing offers immense potential and benefits for all types of organizations. In India, government's support in embracing emerging latest technologies and best practices derived from different cloud deployment scenarios and application areas is increasing, which is evident from the following points –

1. To take advantage of cloud computing, the Indian government has launched an ambitious initiative — "GI Cloud", which has been dubbed "MeghRaj". The focus of this initiative is to accelerate the delivery of electronic services in the country and optimize government ICT spending. This will ensure optimal infrastructure utilization and accelerate the development and deployment of eGov applications.
2. E-Gram Panchayat: To improve the quality of governance, the Indian government initiated an e-governance scheme known as ePanchayat to simplify and enhance internal government operations. The cloud model of e-Gram Panchayat depicts a high-level architecture intended to facilitate internal government operations.

3. Indian Railways on Cloud: To avoid losses, the Indian government decided to implement cloud technology for Indian railways. Cloud computing has led to vast advancements in the railway network. The techniques like Tickets with unique QR (Quick Response) – Code and ticket checking with QR Scanner, Wi-Fi enabled GPS devices set up on each train are managed using cloud storage.

4. Kisan Suvidha: The Indian government came up with portal Kisan Suvidha to help farmers with the relevant information instantly. It delivers farmers with detailed knowledge on weather, market prices, seeds, fertilizers, pesticides, agriculture machinery, dealers, agro advisories, plant protection and IPM practices.

5. DigiLocker: DigiLocker is the public cloud-based storage introduced by the Indian government for the citizens of India. It is much more than an online drive where you upload your documents to be accessed depending on your convenience. The documents are digitally verified and signed by the government of India in a few seconds with an authentic seal of DigiLocker verification.

6. eHospital: eHospital is the cloud-based healthcare projected implemented by the government of India to ease the process of healthcare management. The system was designed to speed up services like online registration, payment of fees and appointment, etc. This hospital model assigns a unique identification number to every patient at the time of registration. The medical history of a particular patient can be accessed using the number.

But to realise cloud's potential, a one-size-fits-all approach will not work. Following **Way Forward** can be considered –

- Address data localisation issues: Many a time data localisation or data residency or other regulatory compliances are considered as roadblocks for cloud adoption.
- In addition, re-looking at the existing technology and data protection standards and updating them to include the best practices for cloud is also recommended.
- Explore beyond infrastructure services: Simply migrating application, data, and its associated infrastructure to the cloud may not allow government or public sector entities to leverage its full benefits. Instead, they need to explore platform services and move towards embracing cloud-native architectures.

Conclusion

In this technology-driven era, the government is considered as active if it is agile and can keep up with the growing demands and expectation of its citizens with the help of its services and computing capabilities where cloud computing can help in achieving Digital India mission.

2. What is the mandate of the World Health Organisation (WHO)? Comment upon its performance during the COVID pandemic.

Approach

Since question has asked you to comment, it requires you to express an opinion or reaction. It is important to pick out the main points/core and give Your opinion based on the information or the arguments.

Introduction

World health organization are building a better, healthier future for people all over the world. They are Working with 194 Member States, across six regions, and from more than 150 offices With their staff united in a shared commitment to achieve better health for everyone, everywhere. Together they strive to combat diseases – communicable diseases like influenza and HIV, and non communicable diseases like cancer and heart disease.

Body

Mandate of the World Health Organisation (WHO) –

- Together the worker of WHO strive to combat diseases – communicable diseases like influenza and HIV, and noncommunicable diseases like cancer and heart disease.
- It help mothers and children survive and thrive so they can look forward to a healthy old age. We ensure the safety of the air people breathe, the food they eat, the water they drink – and the medicines and vaccines they need.
- Their primary role is to direct and coordinate international health within the United Nations system.
- Their main areas of work are health systems; health through the life-course; noncommunicable and communicable diseases; preparedness, surveillance and response; and corporate services.

Its performance during the COVID pandemic –

- Much of the criticism of WHO asserts that it failed to exercise global health leadership and instead became a tool of Chinese politics, power, and propaganda.
- This critique holds that WHO had the ability to question China's handling of the outbreak in Wuhan so that the organization could better prepare the world for a dangerous disease—but that WHO failed to act decisively.
- The criticism raises questions about WHO's authority to challenge states during serious outbreaks for the good of global health. In contrast, praise for WHO often highlights how it has its deployed scientific skills, epidemiological

expertise, medical know-how, outbreak-response capacities, and global networks in helping China and other countries.

- These commendations emphasize the imperative for WHO to work with governments in battling outbreaks.

Conclusion

The pandemic and the controversies associated with it have created an immediate crisis for WHO as COVID-19 rages on. But it's also created a prospective crisis because the outbreak and political reactions to it will shape the future of WHO. The present back-and-forth between WHO's critics and defenders previews the coming tussle over how to repair global health governance and reform WHO in light of this disaster. Although the pandemic is not over, the pillory and praise of WHO are worth exploring now so that the coming tsunami of demands for change do not destroy the organization in order to save it.

3. What are the recent initiatives announced by the government for promoting indigenous farming techniques? Discuss.

Approach

A straightforward question where in the candidate needs to discuss the recent initiatives announced by the government for promoting indigenous farming techniques.

Introduction

As per UN, by 2050, the world will have 10 billion people, with India accounting for 1.73 billion. Reclaiming agriculture's spiritual roots through indigenous farming and locally grown food emerges as key, including the need for designing and implementing a more sovereign food system. The COVID-19 pandemic has made revisiting these aspects all the more necessary.

Body

Indigenous farming is in a nascent stage in India. About 2.78 million hectare of farmland was under organic cultivation as of March 2020, according to the Union Ministry of Agriculture and Farmers' Welfare. In this light, the recent initiatives by the government for promoting indigenous farming techniques include –

- National Mission For Sustainable Agriculture (NMSA): National Mission for Sustainable Agriculture (NMSA) has been formulated for enhancing agricultural productivity especially in rain fed areas focusing on integrated farming, water use efficiency, soil health management and synergizing resource conservation with the help of indigenous methodology.
- Paramparagat Krishi Vikas Yojana (PKVY): Paramparagat Krishi Vikas Yojana, launched in 2015 is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). Under PKVY, Organic farming is promoted through adoption of organic villages by cluster approach and Participatory Guarantee System (PGS) certification.
- As per 17th Lok sabha standing committee on agriculture report dated March, 2020, the Ministry of Agriculture and Farmers Welfare (MoAFW) proposed 'Bhartiya Prakritik Krishi Padhati' (BPKP) as a new sub-mission under Paramparagat Krishi Vikas Yojna (PKVY).
- Mission Organic Value Chain Development for North East Region (MOVCD): It is a Central Sector Scheme, a sub-mission under National Mission for Sustainable Agriculture (NMSA) It was launched by the Ministry of Agriculture and Farmers Welfare in 2015 and aims to develop certified organic production in a value chain mode to link growers with consumers and to support the development of the entire value chain.

- Zero Budget Natural Farming: Zero budget natural farming is a method of chemical-free agriculture drawing from traditional Indian practices.
- Participatory Guarantee System (PGS): PGS is a process of certifying organic products, which ensures that their production takes place in accordance with laid-down quality standards. PGS Green is given to chemical free produce under transition to 'organic' which takes 3 years. It is mainly for domestic purpose.
- National Program for Organic Production (NPOP): NPOP grants organic farming certification through a process of third party certification for export purposes. Soil Health Card Scheme has led to a decline of 8-10% in the use of chemical fertilizers and also raised productivity by 5-6%.
- One District - One Product (ODOP): The programme aims to encourage more visibility and sale of indigenous and specialized products/crafts of Uttar Pradesh, generating employment at the district level. The presence of aggregators is imperative to bring about economies of scale for the small and marginal farmers.
- In addition to farming, the government is also emphasizing on livestock, fisheries and development of water bodies. The Rashtriya Gokul Mission, based on the conservation and development of indigenous bovine species, is an integral part of the overall development of agriculture sector. This will benefit a lot of small and marginal farmers including landless agriculture labourers who possess these indigenous species of bovines.

Way Forward –

- The industry and the government are already supporting the shift to sustainable agriculture by popularising the use of science-based good agronomic practices (GAP) that are climate-smart and financially viable.
- Enhanced collaboration will be a critical imperative to transform Indian agriculture. The government could identify specific areas along the agro value chain where public-private partnership (PPP) will benefit farmers. This will encourage the private sector to come forward with higher investments for innovation.

Conclusion

As we move into a new decade, with the right thought leadership and government support and emphasis on the indigenous farming techniques, the agriculture sector can rewrite India's growth story and place our country in the league of the top five global agricultural markets.

4. Analyze the key issues in India's present defense procurement regime?

Approach

Since the question has asked you to analyze, it means to examine (something) methodically and in detail, typically in order to explain and interpret it.

Introduction

Despite the increasing threats from both China and Pakistan and emerging security challenges, India's spending on defense has dropped by four per cent in terms of the government's total expenditure over the last six years.

Body

Key issues in India's present defense procurement regime –

- Public interest has not been defined or elaborated upon, and this could provide the government with far-reaching termination rights.
- The multiplicity of options with no clarity as to which recourse is linked to a specific default, could result in tremendous uncertainty for the vendor.
- No restrictions have been specified on the exploitation of the IP acquired or as to the type of contracts this right applies to (for instance, only jointly-developed IP or only "Make" contracts).
- It will be interesting to see how these agencies coordinate with each other and with the vendor to ensure a seamless transition.
- Both equity and non-equity investment is contemplated. However, the parameters of calculating offset credit for the non-equity route is currently unclear.
- While our soldiers are one of the finest in the world, it is the lack of resources that has been their bane ever since the Chinese war that exposed them to their vulnerability against an army vastly superior in armament and logistics.

Conclusion

Napoleon Bonaparte, military leader and former Emperor of France, said, "The army marches on its stomach." It was metaphoric. Troops can win wars if they are well stocked with not just food but guns, ammunition, clothing and more. Modi's vision 'to make in India', especially defense equipment is laudable but we need urgently a well thought out and a clear defense procurement policy keeping in mind the strategic vision and interests of India and that is well informed and dictated by the needs of the three services, in the next three to six months, that can be reviewed once in three years.

5. What measures have been initiated by the government to make Indian enterprises more competitive in the global market? Discuss.

Approach

Since the question is asking you to discuss, it necessitates a debate where reasoning is backed up with evidence to make a case for and against an argument and finally arriving at a conclusion. In simple terms an examiner expects one to discuss various perspectives and present a logical argument.

Introduction

Manufacturing in India was high-cost and not really competitive. If there is strong competition, you will make all efforts to improve your products, reduce your costs. That has not happened. Only a few sectors such as telecom and auto became competitive, and that has led to products in India being world class, but those are very limited sectors.

Body

The government is taking a series of measures to make India highly competitive in the global economy. These includes –

- The government announced Production-linked incentive (PLI) scheme for 10 key sectors to spur growth in manufacturing in a big way.
- This (PLI scheme) is one of the biggest schemes that the government has come out with to support the private sector in manufacturing with objective to provide a major impetus to manufacturing and exports. It is a $26-billion scheme, which provides production-linked incentives in 10 champion sectors and this five years of support should spur growth in manufacturing in a big way.
- And, the PLI scheme for other sectors is going through the process of approval.
- In the auto industry, there is a lot of push from the government on domestic manufacturing.
- There is effort from the government in creating an assured demand visible to investors in the future.
- Indian government has adopted "Make in India" as a core policy initiative to encourage and accelerate growth in manufacturing sector and make Indian market highly competitive in global economy.
- Indian government is trying to make smart investments in asset productivity in order to increase the manufacturing productivity such as efficient line balancing, lean plant layout, and process de-bottlenecking.
- In order to enable itself to expand economic hubs beyond tier 1 cities, the government is trying to develop localized services and local networks across the country.

Conclusion

Indian manufacturing, for decades, has been operating at a growth rate of 6-8% a year. The government is trying to get back to it by the end of this year. But the real issue is that it is not enough, as the finance minister said in the budget speech. A double-digit growth in manufacturing is required if the $5 trillion economy target is to be met. The Union Budget is an important milestone. It's a forward-looking growth centric, capacity building and debt-funded budget aimed at securing long-term economic growth and global competitiveness.

6. What are the recent debates surrounding the concept and practice of secularism in India? What are your views on the same?

Approach

Candidate is expected to define Indian secularism and give a brief evolution while citing judgements of S.C. Underlining recent debates on secularism answer can be concluded by commenting on future of secularism in India.

Introduction

The concept of secularism is multifaceted as well as flexible. The classical "Western" theories have emphasized on the "Wall of Separation" model of secularism. This model was best summarized by Donald Eugene Smith as encompassing three relationships between the individual and religion (freedom of religion), the state and the individual (citizenship) and the state and religion (separation of church and state).

Body

Indian secularism –

- Indian Constitution guarantees to its citizens six fundamental rights, one of which is the right to freedom of religion. Article 25 of the Indian Constitution gives each citizen: Freedom of Conscience, Right to Profess any religion, Right to Practice any religion and Right to Propagate any religion
- Article 25 covers not only religious beliefs (doctrines) but also religious practices (rituals). Moreover, these rights are available to all persons— citizens as well as non-citizens. However, there are reasonable restrictions on the fundamental rights of the citizens and central government/state government, in time of need, can interfere with the religious affairs of the citizens.
- There has been question mark on the status of India as a secular state. D.E. Smith held that India has a few features of secular state and not all. He held that there are three features of secular state: Freedom of religion, Universal citizenship and right to equality and Separation between religion and state.
- In Indian context third feature is missing. So India is a secular state only in partial sense. In Indian context minorities are natural custodians of secular state, hence nature of Indian state as secular state will depend in large extent on minorities. If they're organised and conscious about their rights, India will remain secular.
- But Indian secularism with western lens is unjustified as every country has its unique model. Indian secularism emerged as a response to Muslim league's demand for separate state for Muslims in the subcontinent. From this lens we can outline some of the prominent features of secularism

1. State is not identified with any particular religion, but it not averts to use of religion.
2. No strict boundary rather porous boundary.
3. No active hostility towards religion, nor indifference
4. Different religions are in the foundation of state
5. There is no overarching idea.
6. Politically negotiated model.

- In S. R. Bommai case, Supreme Court held that India has both positive and negative secularism. Positive secularism means state shall regulate religion by law and negative secularism means state will not patronise any religion.
- S.C. also highlighted that religious tolerance and the idea of fraternity is the basic feature of Indian secularism.

Threats to Indian secularism –

- Misusing for Electoral benefits: Opportunistic distance (engagement or disengagement), mainly opportunistic alliance with religious communities, particularly for the sake of immediate electoral benefit
- Neglecting the Core Idea of Indian Secularism: Political parties have bizarrely interpreted 'respect' to mean cutting deals with aggressive or orthodox sections of religious groups at times igniting communal violence.
- Victimization of Communities: Principled intervention by State in one religion is viewed as discriminatory treatment by fringe sections of society leading to Politicisation of Secularism
- Politicisation of any one religious group leads to the competitive politicisation of other groups, thereby resulting in inter-religious conflict.
- Requires Continuous Civic Participation: India's constitutional secularism cannot be sustained by governments alone but requires collective commitment from an impartial judiciary, a scrupulous media, civil society activists, and an alert citizenry.

Way ahead –

- In Sabrimala case verdict S.C. gave decision in favour of women entering temple, but this has triggered larger issue of what exactly is principled distance means in context of Indian secularism.
- Views of justice Indu Malhotra and constitution of larger bench to decide on the same is indicative of new emerging debate in India on secularism.

Conclusion

Indian secularism is not an end in itself but a means to address religious plurality and sought to achieve peaceful coexistence of different religions. There is need to shift focus from a politically-led Secularism project to a socially-driven movement for justice.

7. What factors can be attributed for the failure in containing the spread of COVID-19? What measures would you suggest to curb the surge?

Approach

Mention the factors attributed for the failure in containing the spread of COVID-19. Also mention measures to curb the surge.

Introduction

Amid the COVID-19, the system that has been developed to provide a global response to epidemics and pandemics failed miserably. Covid-19 spread all over the world, shutting down entire countries. Governments, and even subnational governments competed fiercely for scarce medical stocks and critical supply chains disrupted due to governmental export restrictions.

Body

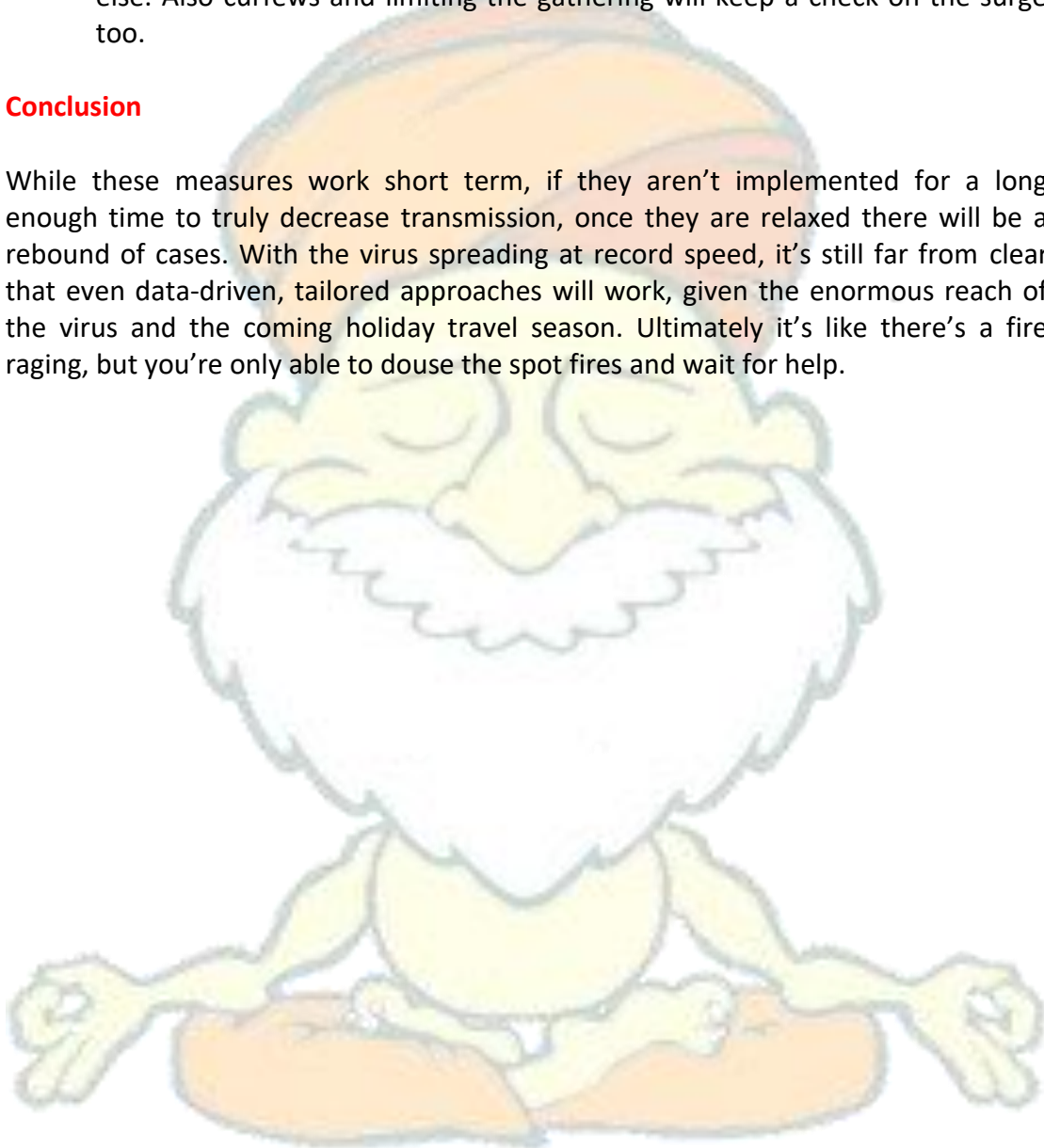**Factors attributing for the failure in containing the spread of COVID-19 –**

- The WHO was simply not fit for this purpose. This stems from its subservience to major funding states, which dates back to the 1970s.
- Today, the WHO's total annual budget is around $5.6 billion. By comparison, the Australian federal health budget for 2019–20 was $120 billion, and even bigger if the states' budget is included.
- Unsurprisingly, this has had the effect of limiting the WHO's capacity, as well as making it highly responsive to its main funding states, thus jeopardizing its independence.
- A second important aspect of global health governance pre-Covid-19 was its operation through domestic state institutions. The underlying assumption was that infectious diseases are likely to emerge in developing countries, due to their poor sanitation and governance capacities, then spread to other parts of the world. Although very limited financial support was available to help developing countries build up their domestic health systems, they were subjected to ongoing surveillance by the WHO and developed countries.
- When disease outbreaks occurred, developed countries provided funding and intervened temporarily to address the immediate problem. This funding would eventually dry out as the outbreak was deemed to have been brought under control. Other than such intermittent interventions, which did little to build up primary health capacity in their recipient states, countries were largely supposed to use their own resources towards pandemic preparedness. Thus, very limited collective capacities had emerged, even within the European Union.
- These factors combined to create a spectacular global health governance failure after the emergence of Covid-19.

Measures to curb the surge –

- Broad lockdown is the simplest, most blunt tool to break the chain of transmission, which reduces the probability of people getting infected and lightens the load on the health care system.
- Mask mandates is another measure to curb the surge of the COVID virus.
- We should certainly shut down restaurants and bars first before anything else. Also curfews and limiting the gathering will keep a check on the surge too.

Conclusion

While these measures work short term, if they aren't implemented for a long enough time to truly decrease transmission, once they are relaxed there will be a rebound of cases. With the virus spreading at record speed, it's still far from clear that even data-driven, tailored approaches will work, given the enormous reach of the virus and the coming holiday travel season. Ultimately it's like there's a fire raging, but you're only able to douse the spot fires and wait for help.

8. What are the emerging issues in corporate governance during the COVID-19 pandemic? Discuss.

Approach

Discuss necessitates a debate where reasoning is backed up with evidence to make a case for and against an argument and finally arriving at a conclusion. So discuss emerging issues in corporate governance during the COVID-19 pandemic.

Introduction

Since the onset of Covid-19, corporate boards have faced a string of difficult decisions. Take as an example the question of dividend payments: Ordinarily, the decision would be a relatively straightforward matter of applying a stated dividend policy, following past practice, or choosing an amount based on shareholder expectations and the company's earnings for the period. But this year, with Covid-19 decimating the economy and looming uncertainty about the depth and duration of the crisis, the decision became a complex matter of weighing and balancing multiple factors — at least for companies flush enough to consider it at all.
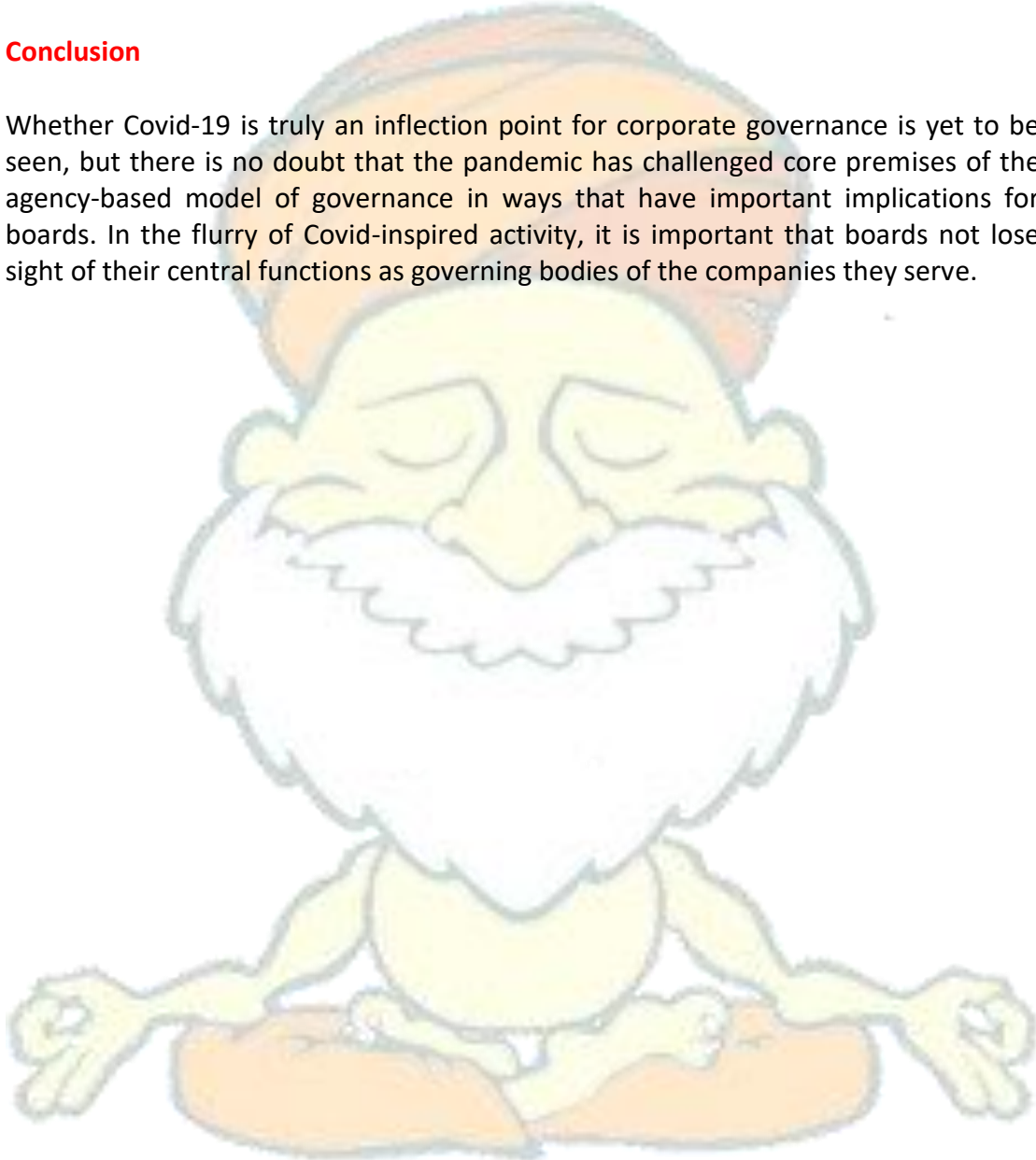
Body

The emerging issues in corporate governance during the COVID-19 pandemic –

- The new environment is characterized by an increasingly complex set of pressures and demands from various stakeholder groups, heightened These factors are complicating board decision-making and challenging the shareholder-centric model of governance that has guided boards and business leaders for the past several decades.
- The pandemic has brought home the tight connection between business and society, and underscored the threat posed by risks stemming from large-scale societal problems that proponents of the shareholder model have traditionally regarded as outside the purview of business. The pandemic has shown that, theory aside, companies cannot so easily disconnect themselves from society-at-large.
- In the face of Covid-19, some companies struggled because their customers disappeared. Others saw their workforce reduced to a skeleton crew of essential employees. Still others grappled with supply chain disruptions, unsustainable debt, or insufficient capital to fund their operations.
- In the wake of Covid-19, boards will likely face increased pressure to incorporate stakeholder perspectives and voices, especially those of employees, into their oversight and decision processes. They will also be challenged to show that the company is performing well for all its stakeholders. External pressure aside, boards that have learned from Covid-19 will want to do this for their own purposes.

- The pandemic has laid bare glaring disparities in pay across society and within companies.
- It also has brought to the surface several problems with the shareholder model's traditional pay-for-performance paradigm, most notably its indifference to issues of equity (in the sense of fairness, including across gender and race) and to externalities such as impacts on third parties and the environment.

Conclusion

Whether Covid-19 is truly an inflection point for corporate governance is yet to be seen, but there is no doubt that the pandemic has challenged core premises of the agency-based model of governance in ways that have important implications for boards. In the flurry of Covid-inspired activity, it is important that boards not lose sight of their central functions as governing bodies of the companies they serve.

9. What are the emerging frontiers in the field of conventional energy resources? Discuss the key issues surrounding those.

Approach

The question has two parts students are expected to address each part equally, also it is important to understand the demand of the question in each part and write answer accordingly.

Introduction

Conventional sources of energy are the natural energy resources which are present in a limited quantity and are being used for a long time. They are called non-renewable sources as once they are depleted; they cannot be generated at the speed which can sustain its consumption rate. They are formed from decaying matter over hundreds of millions of years. These resources have been depleted to a great extent due to their continuous exploitation. It is believed that the deposits of petroleum in our country will be exhausted within few decades and the coal reserves can last for a hundred more years. Some common examples of conventional sources of energy include coal, petroleum, natural gas and electricity.

Body

Emerging frontiers in the field of conventional energy resource –

- The hydrogen industry and the energy industry brushed shoulders at multiple points throughout their history. The first demonstrations of water electrolysis to produce carbon-free hydrogen fuel and fuel cells to convert hydrogen to electricity were engineered in the 1800s. Hydrogen was used to fuel the first internal combustion engines. Green Hydrogen is currently enjoying unprecedented political and corporate interest, at least 24 countries have now drafted policies or are setting up strategies for the hydrogen economy.
- Hydrogen is versatile. Hydrogen can be used as a chemical feedstock, fuel, or energy carrier and storage, and has many possible applications across industries, heavy-duty transport, power, and buildings sectors. Multi-sectoral applications provide a conducive environment towards an exponential rise in demand and subsequent benefits of scale.
- Hydrogen is uniquely clean. The USP of hydrogen is that it can help to decarbonise industrial processes and economic sectors, where reducing carbon emissions is both urgent and hard to achieve. Fertilisers, oil-refining, heavy industry like steel and heavy-duty transport are some examples of hard sectors that likely will need hydrogen to decarbonise.
- Biofuel is the other frontier in the field of conventional energy resource which has been extensively researched over a period of time Biofuels in India are of strategic importance as it augers well with the ongoing initiatives of the Government such as Make in India, Swachh Bharat Abhiyan, Skill

Development and offers great opportunity to integrate with the ambitious targets of doubling of Farmers Income, Import Reduction, Employment Generation, Waste to Wealth Creation.

- The Government approved the National Policy on Biofuels-2018 in June 2018. The policy has the objective of reaching 20% ethanol-blending and 5% biodiesel-blending by the year 2030. Among other things, the policy expands the scope of feedstock for ethanol production and has provided for incentives for production of advanced biofuels.
- Molten salt reactors are the new phenomena in the field of nuclear energy. Nevertheless, advocates say one emerging technology, the molten salt reactor, could provide carbon-free electricity with fewer radiation risks than traditional nuclear.

Issues surrounding these new frontiers –

- Research in these technologies is still in initial phase barring biofuels it is going to take a long time to get these technologies to show their impact at global level.
- Making ethanol from grains is the worst possible solution, not only because of its impact on food production, but mostly because of its poor energy yield. In fact, between fertilizers, seeds, harvesting, transportation, and treatment, the amount of energy contained in a litter of ethanol is barely more than that required to obtain it from cereals. Therefore, from an energy standpoint, it is unreasonable to use this type of raw material.
- Also, the cost of energy through these new systems is quite high which makes these technologies ineffective in the long run.
- Environmental concerns are the other issues that need to be looked into, transition into renewable sources of energy has been in focus from quite a long time now there has been a significant shift from non-renewable to renewable sources of energy throughout the globe.

Conclusion

Coal will continue to be an abundant, though potentially highly contaminating source, and it is necessary to make advances in its use with the capture and storage of CO_2 but at this time, the most important challenge may well be to encourage renewable energies in order to make them a significant percentage of the total supply. Solar energy is more abundant, but has the problem of dispersion. At some point in the near future, it will have to become the dominant and truly massive, sustainable and unlimited renewable energy source. That will call for the solution of technological problems that limit its spread and affect its current high price, and will require decisive public support.

10. What are the major areas of dispute related to water resources between India and its neighbours? Analyse.

Approach

Candidates are expected to first to write about disputes of India over water resources with neighbouring countries. And try to analyse on major areas of disputes related to it.

Introduction

Water dispute is a term describing a conflict between countries, states, or groups over the rights to access water resources. The United Nations recognises that water disputes result from opposing interests of water users, public or private. A wide range of water conflicts appear throughout history, though rarely are traditional wars waged over water alone.

Body

Water dispute in South Asia –

- Water remains a politically contested issue in much of South Asia. The region is facing water shortage it will continue to face increasing demands on energy and water with rapid industrialisation. UN reports that by 2030, water demand in India will grow to almost 1.5 trillion cubic situation is further aggravated by the India's water disputes with its neighbours and inter-state river water disputes in India.
- Combine these factors with the impact of climate change that's reducing the amount of water in the Brahmaputra and many other basin also changing the patterns of water flow.

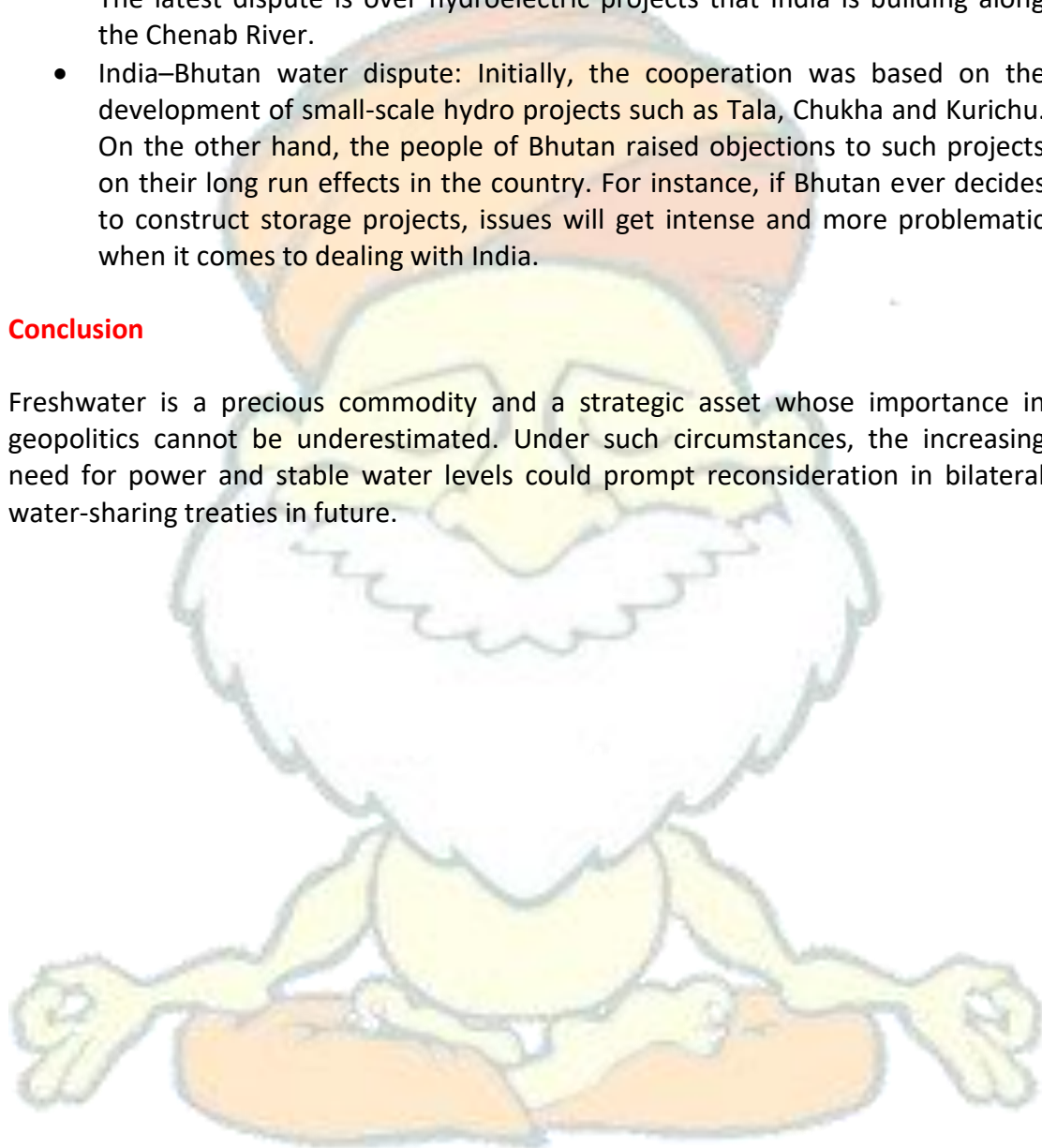Water resources disputes between India and its neighbour –

- India-China Water Dispute: As an upstream riparian region, China maintains an advantageous position and can build infrastructure to intentionally prevent water from flowing downstream. China's dam-building and water division plans along the Brahmaputra (called Yarlung Zangbo in China) is a source of tension between the two neighbours, despite the two having signed several MoUs on strengthening communication and strategic trust.
- India–Bangladesh water issue: Sharing the waters of the Teesta river, which originates in the Himalayas and flows through Sikkim and West Bengal to merge with the Brahmaputra in Assam and (Jamuna in Bangladesh), is perhaps the most contentious issue between two friendly neighbours, India and Bangladesh.
- India–Nepal water issues: Since 1954, when the Kosi Agreement was signed between India and Nepal, talks between the two governments have stalled and water rights issues have not been addressed. The dispute between India

and Nepal might seem minor but it gains strategic importance, because the disputed area lies near the Sino-Indian border. Also delimitation of the boundary along the Maha Kali River is matter of dispute.

- India–Pakistan Water Dispute: Accord called the Indus Waters Treaty in 1960 was carried forward. The Indian Government has more than 40 projects that are either already completed or in the proposal stage on the western rivers. The carrying of such activities within the western rivers has irked Pakistan. The latest dispute is over hydroelectric projects that India is building along the Chenab River.

- India–Bhutan water dispute: Initially, the cooperation was based on the development of small-scale hydro projects such as Tala, Chukha and Kurichu. On the other hand, the people of Bhutan raised objections to such projects on their long run effects in the country. For instance, if Bhutan ever decides to construct storage projects, issues will get intense and more problematic when it comes to dealing with India.

Conclusion

Freshwater is a precious commodity and a strategic asset whose importance in geopolitics cannot be underestimated. Under such circumstances, the increasing need for power and stable water levels could prompt reconsideration in bilateral water-sharing treaties in future.

11. What are the factors responsible for the high fuel cost in India? How can the government address the rising cost? Suggest.

Approach

Mention the factors responsible for the high fuel cost in India and then suggest how the government can address the rising cost.

Introduction

Petrol is now retailing above Rs 90 per litre in all major cities including Delhi and is on the verge of crossing Rs 100 in major cities. It has already hit a century in some circles. Diesel, too, has climbed to levels never seen before in the country. Experts have said the continuous increase in fuel prices will have a widespread impact on citizens and the overall economy.

Body

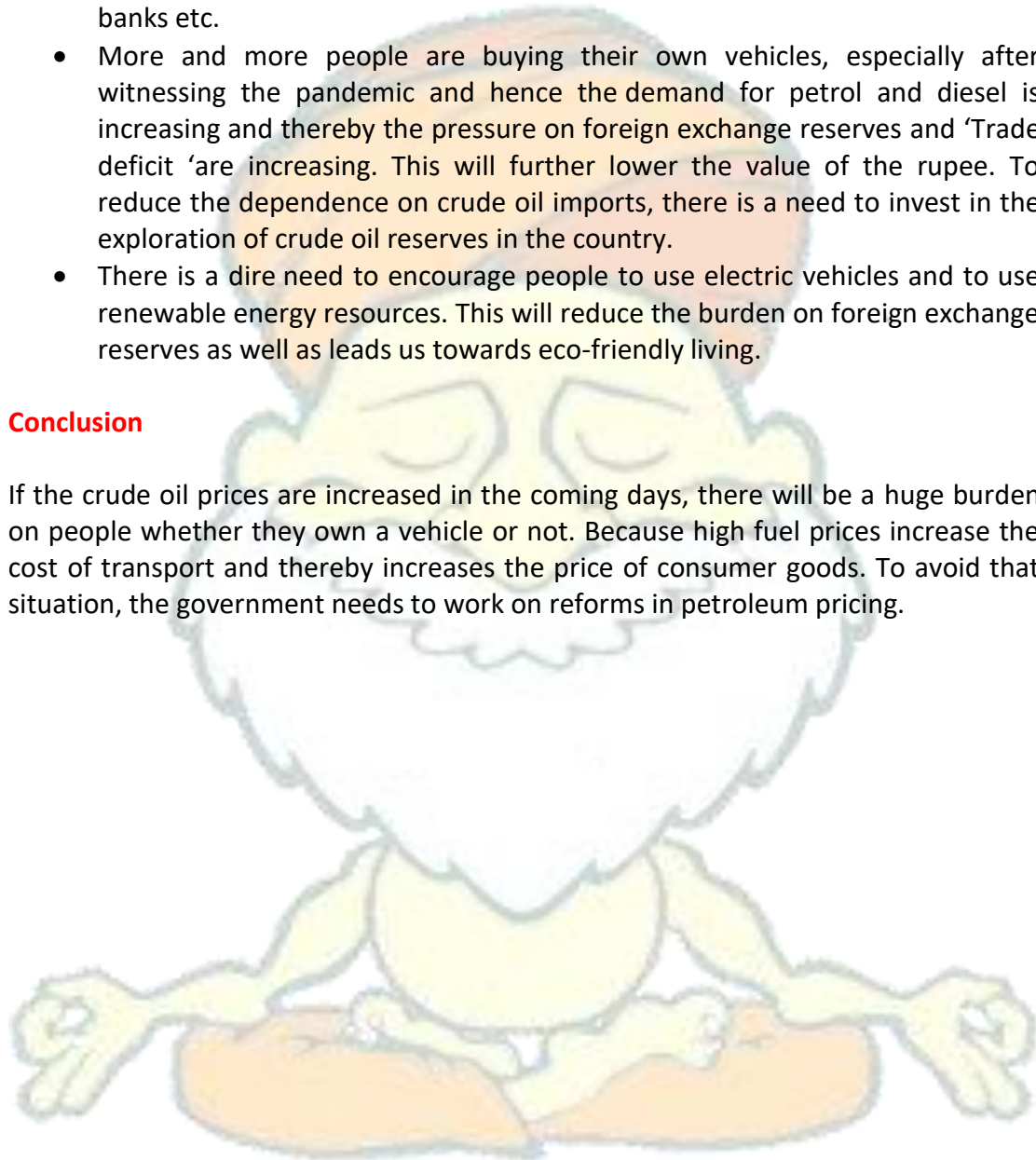**THE FACTORS RESPONSIBLE FOR THE HIGH FUEL COST IN INDIA –**

- Firming of international crude oil rates and extremely high taxes levied on the fuel are the key reasons behind the latest round of petrol and diesel price hike in the country.
- International crude oil price including the Indian basket of crude, which comprises Oman, Dubai and Brent crude. Global crude oil prices have been increasing after organisation of the petroleum exporting countries (OPEC)-plus decided to continue supply curbs.
- Crises in countries like Venezuela and Iran are increasing. There is a pressure on oil prices due to decrease in production.
- Global currencies have weakened against the US dollar. As the rupee value is depreciating, oil refineries have to pay more rupees to import crude oil. This is also one of the reasons why fuel prices are high.
- Being the third-largest importer of oil in the world, the recent firming of international crude oil prices has severely impacted India, where citizens are paying extremely high rates for fuel in comparison to neighboring countries.
- The biggest reason behind higher fuel prices in the country is the high rate of central and state taxes. At the moment, Indians pay one of the highest taxes on fuel in the world.
- Since India follows a dynamic system for altering fuel rates, oil marketing companies are mostly responsible for the recent hikes and the government has no control over it. However, the government does impose a tax on the base price of fuel.

HOW CAN THE GOVERNMENT ADDRESS THE RISING COST?

- Reducing taxes on petroleum products will result in a reduction in costs of transport and thereby reduces the price of many consumer goods. This will result in an increase in markets and economy and also reduces the burden on common people.
- Instead of depending on these taxes on petrol & diesel, the Indian government needs to create more revenue sources such as increasing the number of people that pay income tax, recovering bad loans of public sector banks etc.
- More and more people are buying their own vehicles, especially after witnessing the pandemic and hence the demand for petrol and diesel is increasing and thereby the pressure on foreign exchange reserves and 'Trade deficit 'are increasing. This will further lower the value of the rupee. To reduce the dependence on crude oil imports, there is a need to invest in the exploration of crude oil reserves in the country.
- There is a dire need to encourage people to use electric vehicles and to use renewable energy resources. This will reduce the burden on foreign exchange reserves as well as leads us towards eco-friendly living.

Conclusion

If the crude oil prices are increased in the coming days, there will be a huge burden on people whether they own a vehicle or not. Because high fuel prices increase the cost of transport and thereby increases the price of consumer goods. To avoid that situation, the government needs to work on reforms in petroleum pricing.

12. Good governance is the cornerstone of a successful pandemic mitigation strategy. Comment.

Approach

Candidates are expected first to write about the Good governance and its basic characteristics. Then comment on how good governance is the cornerstone of a successful pandemic mitigation strategy with proper substantiation.

Introduction

In times of crisis such as the current COVID-19 pandemic and its economic and social repercussions, public governance matters more than ever. Governance arrangements have played a critical role in countries' immediate responses, and will continue to be crucial both to the recovery and to building a "new normal" once the crisis has passed.

Body

Good governance and its characteristics –

- In the 1992 report entitled "Governance and Development", the World Bank set out its definition of Good Governance. It defined Good Governance as "the manner in which power is exercised in the management of a country's economic and social resources for development".
- Good governance has 8 major characteristics.'It is participatory, consensus-oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law.

Good governance as a cornerstone of a successful pandemic mitigation strategy –

- During the COVID-19 pandemic the challenges have become extraordinarily difficult due to the speed and scale of COVID-19 response programs, work overload on implementing and accountability institutions, including media and civil society, and workforce safety concerns and lockdowns.
- The public investment, be it for obtaining necessary health products and supplies, or for providing essential public services is channelled mainly through public procurement. Therefore the impacts of chosen procurement strategies have an immediate effect on the effectiveness of policies and efficiency of administration for dealing with the pandemic and its social and economic consequences.
- The trends in policy-making towards a more pro-active approach to building strategies that reduce risk, enhance resilience, and focus on recovery and functionality by Good Governance has been a new Toolkit.
- The crisis has created environments that was ripe for corruption and bribery. Identifying and addressing corruption risks thus was crucial to protect trust in

public institutions and business, and to galvanise public confidence in the governments' ability to mobilise an effective crisis response.

- Issues such as trust in government and trust in expert advice, and the boundary between the experts and the political decision-making interface were brought to the fore by the crisis. Governments faced with the need to synthesise information from multiple sources and actors, and to use it to feed into governments' plans and decision making to tackle crisis.

- Maintaining a trusted connection between decision makers and the scientific suppliers of evidence, is essential for effective decision making in an environment faced with very high uncertainty. For example, by including experts from a variety of backgrounds this ensures that decisions are informed by credible, neutral advice.

- The consultation of civil society organisations, the private sector, citizens, and international organisations can contribute to the quality of the advice given, as well as add credibility and inclusiveness.

- Effective public communication by the central government and Behavioural communication campaigns have played an important role in facilitating the enforcement of regulations, by nudging or instructing wide segments of the population to comply with required measures – from washing their hands, to respecting the provisions of lockdowns and social distancing.

- One of the more visible strategy has been Aarogya Setu mobile app, which was rolled as e governance model and uses a combination of bluetooth, global positioning systems (GPS), artificial intelligence (AI)and data analytics for contact-tracking and contact-tracing.

- The outbreak of the pandemic has seriously disrupted the functioning of both these institutions which have hitherto been in charge of ensuring executive accountability. However, the present crisis has unfolded a situation where ensuring extraordinary governmental accountability, transparency and responsiveness are crucial like never before.

- Unfortunately, however, the lockdowns imposed by governments to contain the virus had also affected the operation of the information regime in many countries, including India. RTI/FOI activities came to a stand-still in these countries in the early phases of the lockdowns, making it impossible for the public to access critical government information.

Conclusion

The effective functioning of governance is the prime concern of every citizen of the country. The citizens are ready to pay the price for good services offered by the state, but what is required is a transparent, accountable and intelligible governance system absolutely free from bias and prejudices

13. Discuss the key challenges being faced by infrastructure financing. How can those be addressed?

Approach

Question is straight forward. Candidate can outline the issues faced by the India in financing infrastructure projects. Way forward can be given citing some examples and data.

Introduction

India's infrastructure at the beginning of the century was in need of a total overhaul. It was a drag on the rapid growth of the country's economy and adversely affected the lives of Indian citizens. Before the market liberalisation of the 1990s, "infrastructure projects were typically financed from the limited resources of the public sector, which was characterised by inadequate capacity addition and poor quality of service". The government looked to public-private partnerships to promote investment and revitalise infrastructure sector.

Body

Key challenges in infrastructure financing –

- In the 1990s, the economy grew rapidly - by 7%-9% a year - and the pressures on infrastructure increased. As a result, infrastructure came to be regarded as a major constraint in sustaining the rapid growth and in attracting investment or doing business in India.
- India has been focussing on infrastructure development across various sectors, which demand huge financial resources. However large social welfare expenditure and low tax-to- GDP ratio limits government capacity to fund them.
- Fiscal Burden: Almost half of the total investment in the infrastructure sector is done by the Government through budget allocations. But Government funds have competing demands, such as, education, health, employment generation, among others.
- Asset-Liability Mismatch of Commercial Banks: Commercial banking sector's ability to extend long-term loans to the infrastructure sector is limited.
- Need for an Efficient and Vibrant Corporate Bond Market: The corporate bond market is still a long way to go in providing adequate financing to the infrastructure sector in India.
- Insufficiency of User Charges: A large part of the infrastructure sector in India especially irrigation, water supply, urban sanitation, and state road transport is not amenable to commercialisation for various reasons. Government cannot levy user charges.
- Legal and Procedural Issues: Issues relating to land acquisition and environmental clearances add uncertainty which affects the risk appetite of

investors as well as banks. With financing in long gestation period it becomes difficult to keep continuous flow of capital.

What can be done?

- The Economic Survey 2017-18 has assessed India's infrastructure financing needs at $4.5 trillion by 2040. The Vijay Kelkar committee had put out a balanced report in 2015 on overhauling the PPP ecosystem, including governance reform, institutional redesign, and capacity-building.
- The government is planning to set up a new Development Finance Institution (DFI) essentially to fill the gap in long-term finance for infrastructure sectors. It will be used to finance both social and economic infrastructure projects identified under the National Infrastructure Pipeline (NIP).
- DFIs provide long-term credit for capital-intensive investments spread over a long period and yielding low rates of return. Soon after independence, the institutional framework for development banking began- IFCI (1948), IDBI (1964), IIBI (1972), NABARD and EXIM Bank (1982), SIDBI (1990), etc.
- Government should avoid trying to minimise risk to themselves by passing on uncertain elements in a project like the land acquisition risk to the private partner.

Government initiatives –

- Under UDAY scheme the government has taken steps to improve operational and financial parameters of discoms.
- National Infrastructure Investment Fund (NIIF) with an initial corpus of Rs 40,000 crore.
- With Initiatives such as 'Housing for All' and 'Smart Cities,' the government is working on reducing the bottlenecks that impede growth in the infrastructure sector.
- The National Highways Authority of India (NHAI) launched Masala Bonds in May 2017, for raising capital for funding the infrastructure projects in India.
- Relaxation in External Commercial Borrowing (ECB) norms.
- National Infrastructure Pipeline: The National Infrastructure Pipeline is a group of social and economic infrastructure projects in India over a period of five years with a sanctioned amount of ₹102 lakh crore.

Conclusion

India is one of the fastest growing large economy in the world. Combined with aspirations of young population, India needs world class infrastructure to emerge as dominant player on global platform. For the rapid development, seamless supply of capital is the basic necessity. If the policies are made to address the bottlenecks, we are not far away from realising our potential.

14. What measures have been taken to improve the employability of graduates in India? Why haven't we achieved much success on this front? Examine.

Approach

The candidate needs to highlight the measures taken in India to improve the employability of graduates in the first part of the answer while the second part should examine the reasons for limited success on this front of employability of graduates.

Introduction

Employability and education have been two of the top issues for the citizens of the country. Here, employability skills are defined as a range of competencies or abilities that are necessary for graduates to gain success in the labour market at all employment levels which benefits themselves, the community and the economy.

Body

How Government is Increasing Employability of Engineers in India –

- AICTE in association with various organisations carries out an employability Skill Test of pre-final and final year graduate students of AICTE approved institutions annually.
- To increase the employability of graduates in the country, Ministry of Human Resource Development is working along with Sector Skill Councils (SSCs) under National Skill Development Corporation (NSDC) to undertake Apprenticeship/Internship embedded degree programmes with the core focus on the development of knowledge, skills, aptitude and on-job training.
- Furthermore, the government has also recommended that courses on nine emerging technologies like AI, data science, IoT, cyber security, robotics, design, quantum computing, AR/VR, Block chain and 3D printing and should be introduced in UG engineering courses.
- In order to revamp the engineering curriculum and to impart the requisite skill set to the students to enhance the employability of engineering students, AICTE has approved an action plan with the following objectives: Induction Training, Revision of Curriculum, Mandatory Internships, Industry Readiness and Mandatory Accreditation.
- Further, AICTE is implementing schemes namely National Employment Enhancement Mission (NEEM) and Employability Enhancement Training Program (EETP) to enhance the employability of the students.
- In addition, AICTE has also partnered with Ministry of Micro, Small and Medium Enterprises (MSME), Govt of India, Internshala, NETiit and LinkedIn to provide internship opportunities and industry exposure to students for aligning their technical knowhow with industry requirements.

- Apart from that, the All India Council for Technical Education (AICTE) is taking the following measures to increase the employability of graduates in the country, particularly engineering graduates:

  o Preparation of outcome-based model curriculum for Diploma, Undergraduate (UG) and Post Graduate (PG) courses in Engineering and PGDM/MBA Courses.
  o Exam reforms and formulation of comprehensive teacher's training. 8 modules are proposed for the incumbent as well as in-service teachers.
  o Mandatory internship, Revision of model curriculum, and Industry readiness accreditation.

The employability of the fresh graduates has risen as a result of different measures taken by Government. As per the data maintained by All India Council for Technical Education (AICTE), the overall employability has increased from 34% to more than 45% in the last five years. This showcases the success of governmental initiatives, but these have been limited in nature. The reasons for the same include –

- Uncertainty among graduates: Lack of focus and definite career path among graduates. As per a latest report, around 40% of the engineering graduates is preparing for various competitive exams in government sector which his not even relate to engineering.
- Sanction of new institutes: The ease of securing approval from the All India Council for Technical Education (AICTE) to set up engineering colleges and other higher education regulators has led to the mushrooming of institutes. These are understaffed and lack in qualified, competent and suitable faculty members. E.g. the number of approved institutes in Maharashtra alone is around 650.
- Teaching methods: Most of the institutions still follow traditional way of teaching without realizing that the information is available over the internet and the need of the hour is the application level teaching for practical purposes.
- There is no policy framework for participation of foreign universities in higher education. Also, there is no overarching funding body to promote and encourage research and innovation. Public funding in the sector remains inadequate.

Conclusion

In today's era, staying updated with technological advancements and rapid changes in surrounding are of prime importance for both success and growth of Individual and employability where to effectively skill, up-skill and re-skill India's workforce, all stakeholders must coordinate upon improving the larger economic prospects as well as new end employment prospects.

15. Do a critical assessment of India's performance on the sustainable development goals (SDGs).

Approach

Candidates are expected first to write about the sustainable development goals and then do critical assessment of India performance to achieve the SDG.

Introduction

Development which meets the needs of the present without compromising the ability of future generations to meet their own needs'. This most widely accepted definition of Sustainable Development was given by the Brundtland Commission in its report Our Common Future (1987). Sustainable development (SD) calls for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet.

Body

India, got committed to the 17 Sustainable Development Goals India played a significant role in making the declaration and its progress in achieving these goals are crucial such as –

- There is notable progress on SDGs 6, 7, 9 and 11. While, a decline in the Maternal Mortality Ratio has contributed to our improved performance in the area of 'Good Health and Well-Being', ramping up toilet coverage under Swachh Bharat Abhiyaan has raised the country's score on 'Clean Water and Sanitation'.
- The commendable performance on Goal 7 is due to expanded access to clean cooking fuel and the government's massive electrification drive. Similarly, on Goal 9, the progress can be attributed largely to a significant improvement in rural road connectivity and increased mobile phone penetration.
- Our performance on Goal 11 has been boosted by better access to housing through the Pradhan Mantri Aawas Yojana as well as more widespread adoption of door-to-door waste collection and processing.
- NITI Aayog has undertaken a mapping of schemes as they relate to the SDGs and their targets, and has identified lead and supporting ministries for each target. They have adopted a government-wide approach to sustainable development, emphasising the interconnected nature of the SDGs across economic, social and environmental pillars.
- The reforms have included fiscal consolidation, inflation targeting, improved governance all around, accelerated infrastructure development (SDG 9), curbing of corruption (SDG 16), Aadhaar Act for providing unique identity.
- The MGNREGA provides a legal guarantee of a minimum of 100 days of wage employment programme generated over 2 billion person-days of employment (SDG 8) during the last year. Women and disadvantaged groups have been the largest beneficiaries (SDG 5 and SDG 10) of the programme

accounting for 56% and 39% of person-days of work generated during last year.

- There is now compelling evidence that rapid growth India has achieved following the economic reforms initiated in 1991 has led to significant reduction in poverty. The evidence shows that poverty fell across all economic, social and religious groups nationally and in all states in the post-reform era.
- Kerala's top rank is attributed to its superior performance in providing good health, reducing hunger, achieving gender equality and providing quality education. Himachal Pradesh ranks high in providing clean water and sanitation, in reducing inequalities and preserving mountain ecosystem.

Still there is need to strengthen institutional arrangements by identifying support departments and defining roles and responsibilities let us assess conditions –

- As per Sustainable Development Report 2020 India has been ranked 117th in the index with overall score of 61.92. The score can be depicted as the percentage of SDG achievement.
- While this progress is heartening, there are certain indicators where focussed attention is required. For instance, India's tuberculosis notification rate is still high, thus limiting our overall progress on Goal 3.
- The CAG found deficiencies regarding the adaption of the 2030 Agenda and stressed upon the need to develop a roadmap to be aligned with defined milestones to be achieved in year 2020, 2025 and 2030, which it found has not been attempted yet. The auditor was concerned that the vision document was still under preparation and states did not complete the exercise to prepare policy documents.
- The agency squarely blamed the Union Ministry of Statistics and Program Implementation for its failure to finalise the National Indictor Framework (NIF). The delay in approval of NIF held up finalisation of monitoring and reporting framework on implementation of SDG.
- The audit highlighted that three crucial ministries of AYUSH, tribal affairs and home affairs were not involved in the national consultation on transitioning from Millenium Development Goals to SDGs.
- In states, the health spending as a percentage of total expenditure, ranged from 3.29 to 5.32 per cent, which shows that there is a need for considerable augmentation.
- COVID-19 pandemic hit at a time when the SDGs were gaining traction and a significant number of steps have been taken and were making good progress. The COVID-19 pandemic has caused disruptions to plans and timelines.

Conclusion

India will continue to pursue the implementation of the SDG agenda through close collaboration between the national and sub-national governments as well as active participation of all other relevant stakeholders. Localisation of SDGs is crucial to any

strategy, essentially we need better adapting, planning, implementing and monitoring the SDGs from national to local levels by relevant institutions to achieve goals.

16. What are the components of social security? Discuss. How is India performing on the key indicators of social security? Examine.

Approach

Question is straight forward, candidate can define social security and give account of India's performance with the help of suitable government schemes.

Introduction

According to International Labour Organisation," Social security is the protection that a society provides to individuals and households to ensure access to health care and to guarantee income security, particularly in cases of old age, unemployment, sickness, invalidity, work injury, maternity or loss of a breadwinner".

Body

What constitutes social security?

- The principle of Universality of social security is enshrined in various goals related to the 2030 Agenda for Sustainable Development.
- Right to a Standard of Living- adequate for the health and well-being, including food, clothing, housing and medical care and necessary social services.
- Right to Income Security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond any person's control.
- In the ILO conventions and UN instruments, it is considered to be a basic human right. The Universal Declaration of Human Rights (UDHR) recognises the right to social security for all. It helps the recipients to ensure their rights to family protection and assistance, an adequate standard of living and adequate access to healthcare.
- Social security acts as an umbrella for people during adverse situations. Social welfare is not possible without social security. It acts as a buffer against all odds in the time of need. It helps in lifting millions of people out of poverty and thus, raises people's standard of living.

Types of social security in India
- Gratuity, Old-age pension
- Health and medical insurance
- Maternity benefits
- Disability benefits, Minimum Wages Act

Need of social security in India –

- Majority of Work Force is in Unorganised Sector: The organised sector workers constitute less than 10% of all workers in India.
- The lockdown necessitated by the Covid-19 pandemic has caused misery to almost all sections of society, but the vulnerable section viz. people below the poverty line, migrant workers have been affected the most.
- Too Expensive Private Healthcare Expense: Out-of-pocket health expenses, which create barriers to seeking healthcare and can push marginal households into poverty, form as much as nearly 90% of private expenditure on health.
- Covid-19 has highlighted the urgency for providing universal free health care. It has demonstrated that private health care can be afforded only by the wealthy.

Performance of India in social security –
- India has a broad aim of social protection programs, but the overall public expenditure on social protection (excluding public healthcare) is only approx. 1.5% of the GDP, lower than many middle-income countries across the world.
- However, in spite of great attention given to skills development in the last 15 years, the results are not very encouraging.

What can be done?

- Skill Development via 'Learning while Earning' Model-The principle of "learning while earning" should be more vigorously applied to improve India's skill development systems.
- MGNREGA has proved its utility by providing employment to millions of workers who have reverse migrated. Thus, there is a case for extending this programme to urban areas with municipal bodies
- Providing Universal Health Coverage-There is a need to establish the Ayushman Bharat-National Health Agency at all levels of governance for management of the Pradhan Mantri Jan Aarogya Yojana (PM-JAY).
- Atal pension yojana- The APY will be focussed on all natives in the unorganized sector, who join the National Pension System (NPS) managed by the Pension Fund Regulatory and Development Authority (PFRDA)
- Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) would give protection cover in the terrible occasion of death by any reason/demise or inability because of a mishap.
- The target of raising the share of expenditure on health care to 2.5% of the GDP, as envisaged by the National health policy 2017, in the next two years would be a good beginning.

Conclusion

Covid-19 pandemic exposed our vulnerabilities of social securities. The poor healthcare and social infrastructure needs immediate revamping to provide BASIC right to life to the marginalised and vulnerable.

17. Should the civil servants be made accountable for the recent surge in COVID cases? Critically comment.

Approach

The candidate needs to comment on the aspect of whether civil servants should be held accountable for the recent surge in COVID cases in India and also critically comment on the aspect with proper substantiation.

Introduction

Almost overnight, the Coronavirus (Covid-19) pandemic has transformed the work and workplaces of the civil servants. Civil servants are playing a leading role in the response to the pandemic. Civil Servants are finding novel ways to design and channel unprecedented economic stimulus spending and manage severe spikes in unemployment.

Body

Recently, India's COVID tally climbed to 1,32,05,926 with a record spike of 1,45,384, according to the Union Health Ministry. There is no clarity on why the numbers are rising so sharply, with a section of people blaming the civil servants for the recent rise. Their arguments can be seen from the following points –

- Civil servants are important actors at the forefront of framing, implementing and evaluating the state's response to the pandemic, and uniquely positioned between the political executive and India's massive frontline state, which necessitates them towards being pro-active in controlling a pandemic.
- There was a lowering of guard and complacency in the approach of executive under civil servants, after the first wave of pandemic subsided. Poor implementation of mask and social distancing norms are a case in point. Allowing of Kumbh Mela in the middle of a pandemic can also point to failure of civil servants as well as executive, where the event risks turning into a super spreader event.
- Civil servants have control over the testing capacity and proactive testing approach would've helped in avoiding this massive surge. Consistently high TPR (Test Positivity Rate) in some states is a clear example of the same.
- Information dissemination by the authorities diminished as compared to last year, when there used to daily/weekly briefings, which helped in creating scientific awareness in media and public. Information regarding vaccines and newer variants, as well as COVID appropriate behavior was not effectively communicated to the larger public.
- Control over vaccine production and distribution is another factor where civil servants played a major role, which saw poor performance. Centralizing tendencies and red tapism led to slow roll out of essential vaccination drive, which would've curtailed the second wave.

At the same time, it is important to remember that the abrupt and brutal disruption by the COVID-19 pandemic has thrown the public service and civil servants into a frenzy, forcing them to not only deal with fighting its spread but trying to manage its accompanying socioeconomic fallout. Here, the second wave's rapid spread has many other factors, some of which include –

- People not following COVID-19 protocol, including people not continuing with precautions even after being vaccinated, and a sluggish vaccination drive are responsible.
- A new factor is emerging mutants -- both imported and home-grown. Here, the UK strain is considered more virulent and is one of the reason for rapid spread.
- Flaunting of rules and protocols by the political executive, especially in election rallies and religious congregation, which involve huge crowds as well as capacity to spread virus far and wide.
- Population which escaped the first wave of pandemic is one of the reason for present rapid growth as earlier unaffected population provides a fertile ground for the virus and the spread in second wave shows similar pattern.

During the Covid-19 pandemic, the civil service's role in India's governance and administration increased further. With most people including politicians staying home for their safety, the health, economic and social crises were handled by collectors/magistrates at the district level, chief secretaries at the states and union territories' level, and empowered groups of secretaries at the national level.

- Further, the Indian state and bureaucracy rose to the occasion and responded well in time of crisis, demonstrating capabilities to mobilise, motivate, innovate and communicate that are unfortunately missing in action in its routine functioning.
- The civil servants felt the autonomy given to them due to lack of political interference in administrative actions, and the consequent ability to deploy all resources to a single cause, enhanced their performance.
- Associations representing officers of central civil services, including the Indian Administrative Service (IAS) and the Indian Police Service (IPS), have formed an initiative called 'Caruna' to support and supplement the governments efforts in fighting coronavirus.

Conclusion

In the ongoing COVID-19 pandemic, civil servants are working under life-threatening circumstances where they are both expected to deliver services despite the pandemic while at the same time suffering its impact, either by being directly infected or having family members who are. Recognising this fact becomes important as also the fact that civil servants are also the frontline warriors or COVID warriors and people to collaborate and co-ordinate to fight this virus menace to emerge victorious.

18. What are the recent steps announced by the government for improving digital literacy? Discuss.

Approach

The question demands to explain the current measures of transparency in the policy making in the country. The answer should mention about the CBI, CVC, Lokpal and RTI as main parts and also include social audit and CAG as other accountability and transparency measures.

Introduction

Digital India is a campaign launched by the Government of India in order to ensure the Government's services are made available to citizens electronically by improved online infrastructure and by increasing Internet connectivity or making the country digitally empowered in the field of technology. The initiative includes plans to connect rural areas with high-speed internet networks. It consists of three core components: the development of secure and stable digital infrastructure, delivering government services digitally, and universal digital literacy.

Body

Digital India was launched by the Prime Minister of India Narendra Modi on 1 July 2015, with an objective of connecting rural areas with high-speed Internet networks and improving digital literacy. The vision of Digital India programme is inclusive growth in areas of electronic services, products, manufacturing and job opportunities. It is centred on three key areas – digital infrastructure as a utility to every citizen, governance and services on demand, and digital empowerment of citizens.

- Aadhaar identity platform is one of the key pillars of 'Digital India', wherein every resident of the country is provided with a unique identity or Aadhaar number. The largest biometrics based identification system in the world, Aadhaar is a strategic policy tool for social and financial inclusion, public sector delivery reforms, managing fiscal budgets, increase convenience and promote hassle-free people-centric governance.
- Bharat Broadband Network Limited is a special purpose vehicle set-up under Companies Act by the Government of India with an authorized capital of Rs. 1000 cr. It has been mandated to create the National Optical Fiber Network (NOFN) in India. A total of around 2,50,000 Gram Panchayats spread over 6,600 Blocks and 641 Districts are to be covered by laying incremental fiber.
- The Digital Saksharta Abhiyan or National Digital Literacy Mission (NDLM) Scheme has been formulated to impart IT training to 52.5 lakh persons, including Anganwadi, ASHA workers and authorised ration dealers in all the States/UTs across the country. The initiative aims at training non-IT literate citizens to

become IT literate to enable their active and effective participation in the democratic, developmental process, and enhance their livelihood too.

- DBT was initiated with the aim to reform government delivery system by re-engineering the existing process in welfare schemes for simpler and faster flow of information/funds and to ensure accurate targeting of the beneficiaries, de-duplication and reduction of fraud. DBT will bring efficiency, effectiveness, transparency and accountability in the Government system and infuse confidence of citizen in the governance. Use of modern technology and IT tools will realize the dream of MAXIMUM GOVERNANCE MINIMUM GOVERNMENT.

- Crime and Criminal Tracking Network & Systems (CCTNS) is a plan scheme conceived in the light of experience of a non-plan scheme namely - Common Integrated Police Application (CIPA). CCTNS aims at creating a comprehensive and integrated system for enhancing the efficiency and effectiveness of policing through adopting of principle of e-Governance and creation of a nationwide networking infrastructure for evolution of IT-enabled-state-of-the-art tracking system around 'Investigation of crime and detection of criminals'.

- e-Granthalaya is an Integrated Library Management Software developed by National Informatics Centre, (NIC), Department of Electronics & Information Technology. The application is useful for automation of in-house activities of libraries and to provide various online member services.

- eBiz is being implemented by Infosys Technologies Limited (Infosys) under the guidance and aegis of Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce & Industry, Government of India. The focus of eBiz is to improve the business environment in the country by enabling fast and efficient access to Government-to-Business (G2B) services through an online portal.

- National Agriculture Market (NAM) is a pan-India electronic trading portal which networks the existing APMC (Agriculture Produce Marketing Committee) mandis to create a unified national market for agricultural commodities. The NAM Portal provides a single window service for all APMC related information and services. This includes commodity arrivals and prices, buy and sell trade offers and provision to respond to trade offers, among other services.

Conclusion

Several academic scholars have critiqued ICTs in development. Some take issue with technological determinism, the notion that ICTs are a sure-fire antidote to the world's problems. Instead, governments must adjust solutions to the specific political and social context of their nation. Others note that technology amplifies underlying institutional forces, so technology must be accompanied by significant changes in policy and institutions in order to have meaningful impact.

19. What are the current institutional measures for ensuring transparency in policy making? Discuss.

Approach

The question demands to explain the current measures of transparency in the policy making in the country. The answer should mention about the CBI, CVC, Lokpal and RTI as main parts and also include social audit and CAG as other accountability and transparency measures.

Introduction

Transparency and accountability in administration are sine qua non of participatory democracy. Government secrecy fosters disbelief of government on the part of the citizenry and transparency eliminates the wall of secrecy built against the common people by those holding power. Accountability goes beyond the mere responsibility of delivery of a task or service. It also means answerability if a service is not delivered in a timely and efficient manner such that it becomes a burden.
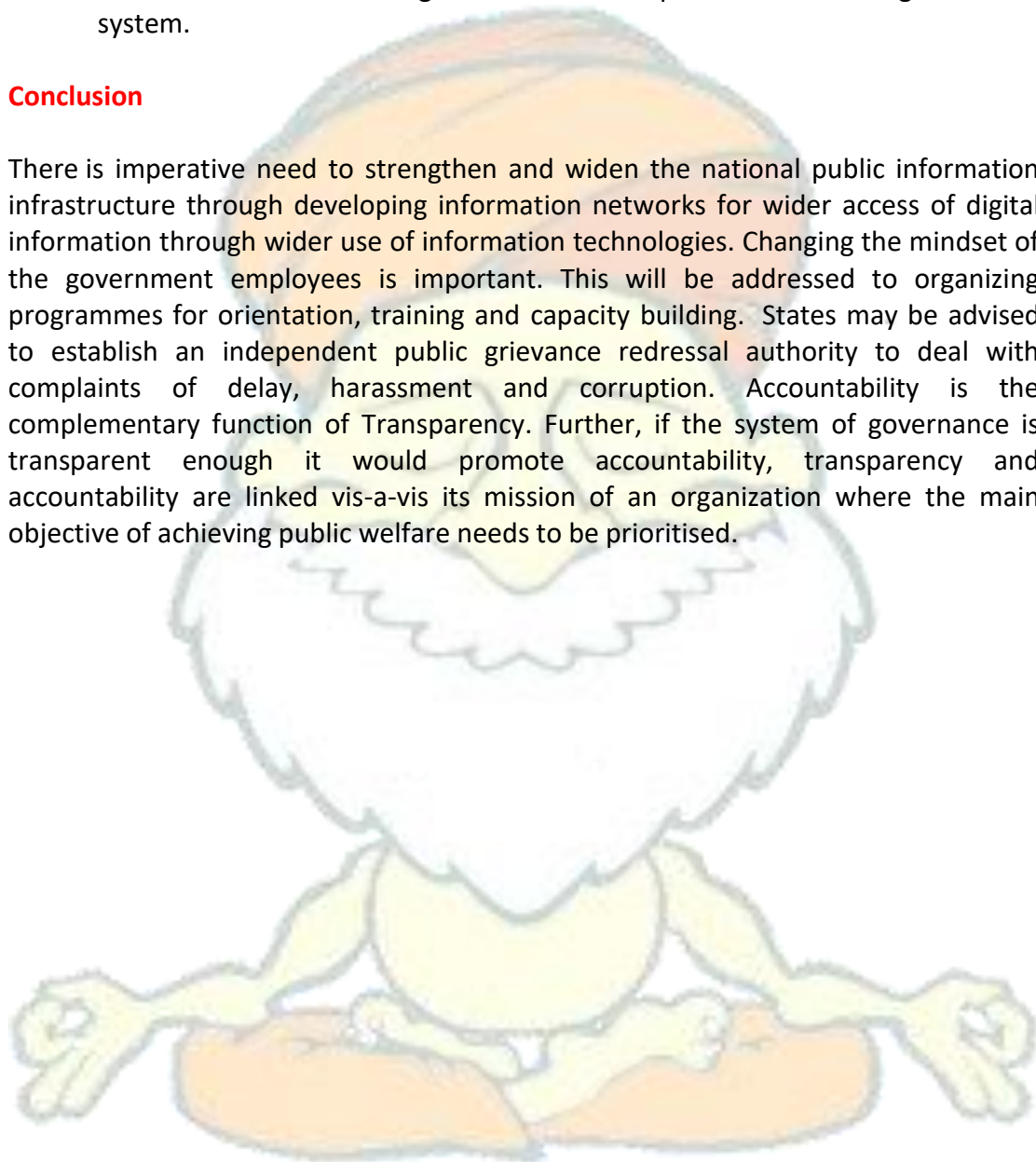
Body

- UNDP describes governance as "a system of values, policies and institutions by which a society manages its economic, political and social affairs through interactions within and among the state, civil society and the private sector."
- Transparency is broadly accepted as a major principle of good governance. Transparency allows stakeholders to collect information that may be critical to uncovering abuses and defending their interests. Likewise, transparency increases accountability of the Government officials.
- Transparency means that the criteria, process and systems of decision-making are openly known to all in a public manner. Citizen's charter becomes an important measure for transparency in institutional setup.
- The declaration of Right To Information Act (2015) set the stage for transparency in the functioning of the government and its various agencies. Under this Act, access to information from a public agency has become a statutory right of every citizen.
- Major Initiatives to Enhance Transparency in India include – Right to Information Act, Public Services Bill, Citizens Charters, e-Governance, e-Bhoomi, e-Choupal, e-procurement.
- Transparency is required to make the system of public service delivery effective. However, sheer knowledge of what entitlements are, and who is responsible for fulfilling them, is not sufficient to ensure that public services are passably and effectively delivered to the 'intended' recipients
- The RTI has been seen as a landmark evolvement to empower public on information relating to public authority [under section 2[h]). Its recent expansion by including CJI under its ambit shows its relevance.

- Citizen charters have ensured a way for transparent and citizen centric administration. For instance, on measures of grievance redressal, etc.
- The e – governance have ensured it by- Transparency through online public procurement.
- Delivery of welfare schemes through JDY and thus avoiding leakages and corruption.
- Models like PRAGATI for good and efficient public service and governance system.

Conclusion

There is imperative need to strengthen and widen the national public information infrastructure through developing information networks for wider access of digital information through wider use of information technologies. Changing the mindset of the government employees is important. This will be addressed to organizing programmes for orientation, training and capacity building. States may be advised to establish an independent public grievance redressal authority to deal with complaints of delay, harassment and corruption. Accountability is the complementary function of Transparency. Further, if the system of governance is transparent enough it would promote accountability, transparency and accountability are linked vis-a-vis its mission of an organization where the main objective of achieving public welfare needs to be prioritised.

20. What are the major anthropogenic threats to the Western Ghats? What measures have been taken to protect the ecology of Western Ghats? Discuss.

Approach

Since the question is asking you to discuss so it necessitates a debate where reasoning is backed up with evidence to make a case for and against an argument and finally arriving at a conclusion.

Introduction

Running parallel to the West coast of India from the river Tapi in the north to Kanyakumari in the south and covering a total area of 160,000 square kms and traverses through six States viz. Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu, The Western Ghats, also known as 'Sahyadri', constitute a 1600 km long mountain chain along the west coast of India.

Body

MAJOR ANTHROPOGENIC THREATS TO THE WESTERN GHATS –

The Western Ghats of India is facing severe threats to its ecosystem. In the period between 1920 to 1990, 40 percent of its natural vegetation was depleted. This is coupled with dangers arising from encroachments. The major anthropogenic threats include:

- Large dam projects in Western Ghats have resulted in environmental and social disruption despite cost benefit analyses and environmental impact assessments being done by the government and companies.
- The rise in human settlements has led to the over-exploitation of forest products through activities such as livestock grazing.
- Livestock grazing within and bordering protected areas by high densities of livestock (cattle and goats) is a serious problem causing habitat degradation across the Western Ghats.
- The mining establishments, especially iron-ore mining, have greatly contributed to damaging the ecological balance, by destroying farms, polluting rivers and damaging the top soil.
- Diversion of forests for agriculture, mining and industrial projects, road construction etc over the past few decades have resulted in the state of Kerala losing 9064 sq kms between 1973 and 2016 and Karnataka losing 200 sq km of forest land in the Western Ghats between 2001 and 2017.
- Given that the Western Ghats exists within an intensely human-dominated landscape, human-wildlife conflicts are a common phenomenon.
- Pollution is also playing its part, with high mercury levels in the water, and agrochemicals from tea and coffee plantations going unchecked.

- Plantations owned by private individuals and corporate sector continue to grow in the Western Ghats and constitute an important source of fragmentation of natural habitat.
- The other culprit for loss of native flora in the Western Ghats is the plantation of alien species such as Eucalyptus, Pinus by the British which can be seen across the upper slopes of the Nilgiris interspersed with Lantana Camara. They create a mat-like structure leading to degradation of the land and destruction of the native biodiversity.

MEASURES TO PROTECT THE ECOLOGY OF WESTERN GHATS –

- The government has taken initiative to demarcate Ecologically Sensitive Areas (ESA.) These areas are not just about regulation of development but are also intimately linked to positive promotion of environment-friendly and socially inclusive development.
- Gadgil committee report recommended declaring the entire WG landscape as Ecologically Sensitive Area (ESA), divided under three sub-zones, with ban on mining, thermal power plants, polluting industries and large dams, and inclusion of local communities in biodiversity conservation and promoting eco-friendly activities.
- Kasturirangan committee recommended to incentivize green growth that promotes sustainable and equitable development bringing only around 37 per cent Ghats area under the ESA out of the entire 1,64,000 sq km.
- The Central Government tried to bring in three draft notifications for declaring this as Western Ghats Ecologically Sensitive Area (WGESA). However, none of the six state governments have shown any support for this notification.
- Government has taken measures to conserve the fast-declining biological diversity with the establishment of Protected Area network, tiger reserves and biosphere reserves. Nearly 10 per cent of the total area of Western Ghats is currently covered under protected areas.

Conclusion

The Western Ghats, a UNESCO World Heritage Site, which is one of the eight hot-spots of biological diversity in world, hosts a large proportion of the country's flora and fauna and largely impacts climatic conditions and rainfall patterns in the peninsula. It's our responsibility to protect them from destruction. If we could not do anything for the conservation of Western Ghats right now, then it will be too late to save amazing flora and fauna from the old mountain range.

21. Why is India home to cities having dangerous air pollution levels? What urgent measures would you recommend to address this problem?

Approach

Question is very straight forward in its approach students are expected to write about role of social media platforms in changing societal norms and values and explanation with appropriate use of examples as demanded by the question explicitly.

Introduction

Twenty-one of the world's 30 cities with the worst levels of air pollution are in India, according to data compiled in IQAir AirVisual's 2019 World Air Quality Report; six Indian cities are in the top ten. Indeed, air pollution is pervasive in many parts of India, causing massive public health and environmental crises. The economic cost of fossil fuel air pollution alone is estimated at INR 10,700 billion, or 5.4 percent of the country's annual GDP. An estimated one million deaths each year, and 980,000 pre-term births, are attributed to air pollution from fossil fuel in India.

Body

India has been particularly vulnerable to air pollution over the last two decades, owing to population growth, increasing numbers of vehicles, use of fuels, inefficient transportation systems, poor land use patterns, industrialisation, and ineffective environmental regulations. Among Indian cities, the capital, New Delhi, is one of the worst-affected. New Delhi has the highest ambient particulate matter pollution exposure in the country. As of 2019, the average annual PM 2.5 concentration across India was 58.1 micrograms per cubic meter; Delhi's average PM 2.5 concentration for the year 2019 was 98.6 micrograms per cubic meter. The startling aspect of that statistic is that the recorded level is not just the highest for any capital city in India, but for any capital city in the world.

Reasons for Air Pollution –

- Crop Burning: The national capital territory of Delhi is landlocked between the states of Haryana, Rajasthan and Uttar Pradesh, and the Himalayas in the north. Much of the air pollution in Delhi is blamed on crop-burning—especially in the states of Punjab and Haryana, where rice and wheat are widely grown. Burning typically peaks during the first week of November, a time when many farmers set fire to leftover rice stalks and straw after harvest, a practice known as stubble or paddy burning, a cost-effective measure for clearing out fields.
- Industrial Pollution: Delhi has the highest cluster of small-scale industries in India. Assessments made by the Central Pollution Control Board (CPCB) show that the national capital is home to and surrounded by highly pollutive

industrial clusters that do not meet limits on air, water or soil emissions. Even the other major cities especially in the Northern India suffer from high Industrial Pollution.

- Vehicular Emissions: The transport sector is the main source of PM2.5 emissions in North Indian cities (28 percent of all PM2.5 emissions). Vehicular contribution also makes up 80 percent of nitrogen oxides and carbon monoxide in Indian cities' air. Data on vehicular pollution in these cities shows the following: trucks and tractors generate 9 percent of emissions; 7 percent from two-wheelers; 5 percent from three-wheelers; 3 percent each from cars and buses; and 1 percent from light commercial vehicles. In all, these vehicles are responsible for 41 percent of the total pollution load in these major metropolitan cities.
- Also, a lot of the smaller cities have poor waste management, there is a lot of burning, solid fuel use, they are moving from non-motorised to motorised transport. Chulhas [cookstoves], we know, contribute to 25 percent outdoor pollution in India." These stoves also cause pollution indoors, which is especially dangerous for children, according to the WHO.

Steps to Address the Pollution –

- Control of ambient particulate matter pollution requires action in several sectors and the linkage of these actions for greatest impact. Various studies have estimated the contribution of different sources to PM pollution in Delhi, which can be useful in informing the efforts that are needed to address these sources. Various government initiatives have been launched in the past few years to reduce air pollution.
- Capacity Building: Public and media discussions on air pollution largely focus on the high ambient PM levels in north India in the winter season and the impacts on people's health. Similar discussions are needed for the longer-term adverse health effects of chronically high pollution levels throughout the year.
- More awareness needs to be created among policymakers and the general public about the slow but substantial impact of ambient particulate matter and household air pollution. Government initiatives to reduce solid fuel use for tackling household air pollution include a scheme initiated by the prime minister in May 2016—the Pradhan Mantri Ujjwala Yojana, which aims to provide clean and safe cooking fuel (liquefied petroleum gas) to 50 million low-income households by March 2019. It targeted the addition of 10,000 distributors, increasing access, and covering nearly all the upfront costs of switching for low-income households.
- Another imperative is a viable public transport system strategy. While the Metro has provided massive relief to Delhi's commuters, it is not viable for all economic classes. Therefore, Delhi needs an active bus service that runs on electricity.Regardless of the high initial cost, such vehicles offer other advantages like low maintenance cost, longer service life and lower
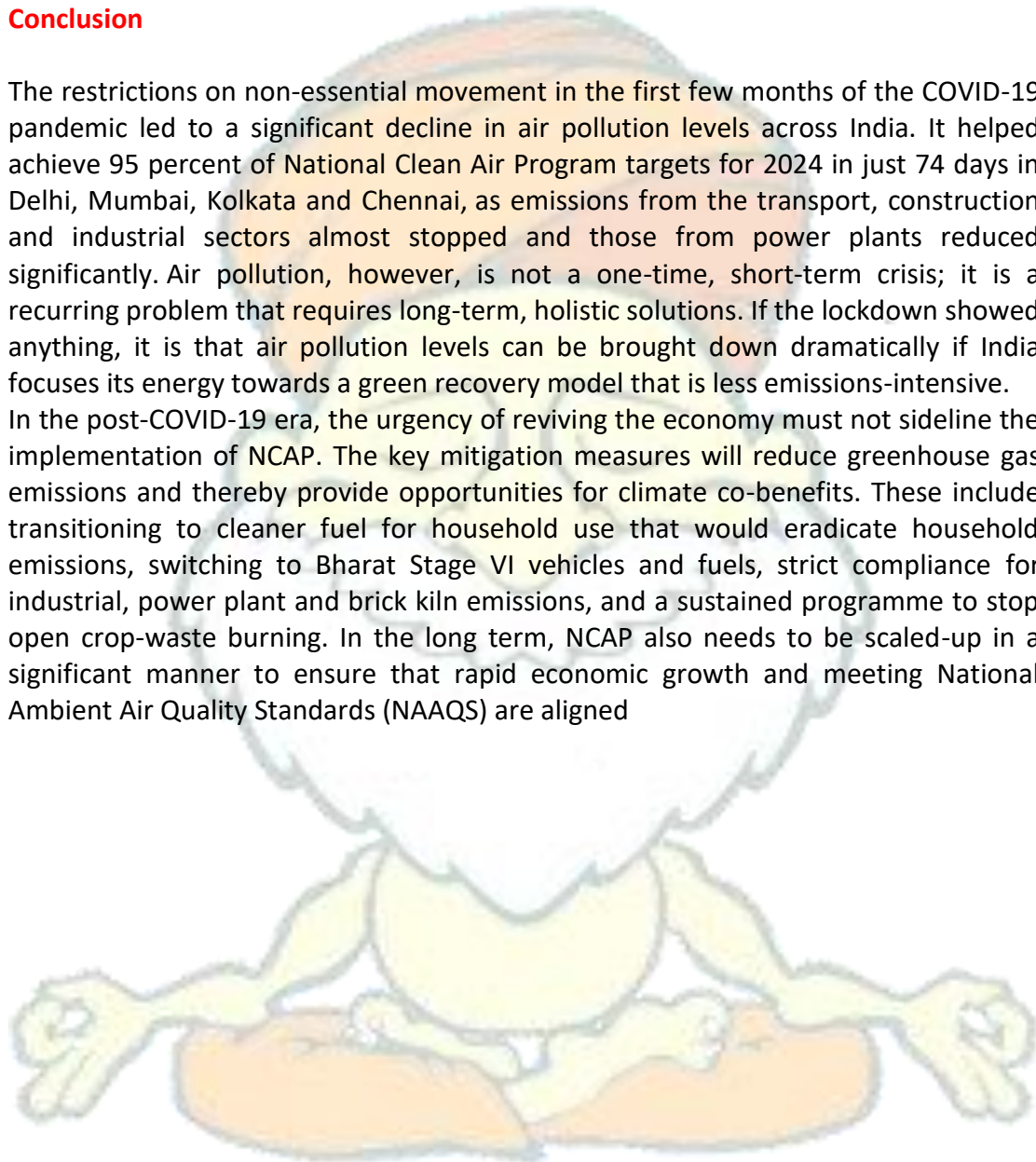
operational costs per kilometre. More importantly, they reduce pollution levels.

- Electric mobility is a definitive way towards cleaner air, without compromising functionality. Continuing with the ICE (internal combustion engine) vehicles in the same way as in the past would make it difficult to see a satisfactory AQI in Delhi. A shift to electric mobility is long-overdue in Delhi.

Conclusion

The restrictions on non-essential movement in the first few months of the COVID-19 pandemic led to a significant decline in air pollution levels across India. It helped achieve 95 percent of National Clean Air Program targets for 2024 in just 74 days in Delhi, Mumbai, Kolkata and Chennai, as emissions from the transport, construction and industrial sectors almost stopped and those from power plants reduced significantly. Air pollution, however, is not a one-time, short-term crisis; it is a recurring problem that requires long-term, holistic solutions. If the lockdown showed anything, it is that air pollution levels can be brought down dramatically if India focuses its energy towards a green recovery model that is less emissions-intensive.

In the post-COVID-19 era, the urgency of reviving the economy must not sideline the implementation of NCAP. The key mitigation measures will reduce greenhouse gas emissions and thereby provide opportunities for climate co-benefits. These include transitioning to cleaner fuel for household use that would eradicate household emissions, switching to Bharat Stage VI vehicles and fuels, strict compliance for industrial, power plant and brick kiln emissions, and a sustained programme to stop open crop-waste burning. In the long term, NCAP also needs to be scaled-up in a significant manner to ensure that rapid economic growth and meeting National Ambient Air Quality Standards (NAAQS) are aligned

22. What are the most potent threats to India's marine biodiversity? Discuss. What measures have been taken to protect marine biodiversity? Examine.

Approach

Candidate can explain the threats to marine diversity of India and discuss the various international treaties signed for the same along with the domestic laws and rules.

Introduction

The marine ecosystem is home to the richest and most diverse faunal and floral communities. India has a coastline of 8,118 km, with an exclusive economic zone (EEZ) of 2.02 million sq km and a continental shelf area of 468,000 sq km, spread across 10 coastal States and seven Union Territories, including the islands of Andaman and Nicobar and Lakshadweep Indian coastal waters are extremely diverse attributing to the geomorphologic and climatic variations along the coast.

Body

Marine biodiversity of India –

- The coastal and marine habitat includes near shore gulf waters creeks tidal flats mud flats coastal dunes mangroves marshes wetlands seaweed and seagrass beds deltaic plains estuaries, lagoons and coral reefs.
- There are four major coral reef areas n India-along the coasts of the Andaman and Nicobar group of islands the Lakshadweep group of islands the Gulf of Mannar and the Gulf of Kachchh The Andaman and Nicobar group is the richest in terms of diversity.
- Mangrove ecosystems are found along both the east and west coasts of India covering an estimated area of 4 120 sq km Important mangrove areas are in the Sundarbans, Bhitarkanika Krishna and Godavari delta of Andhra Pradesh, Andaman and Nicobar Islands, Gulf of Kachchh, and the Pichavaram-Vedaranyam area of Tamil Nadu coast.

What are threats to marine biodiversity?

- Sewage: Sewage or polluting substances flow through sewage, rivers, or drainages directly into the ocean.
- Toxic Chemicals From Industries: Industrial waste which is directly discharged into the oceans, results in ocean pollution. Also, they raise the temperature of the ocean and cause thermal pollution. Aquatic animals and plants have difficulty surviving at higher temperatures.
- Land Runoff: Land-based sources (such as agricultural run-off, discharge of nutrients and pesticides and untreated sewage including plastics) account for approximately 80% of marine pollution. The runoff picks up man-made,

harmful contaminants that pollute the ocean, including fertilizers, petroleum, pesticides and other forms of soil contaminants.

- Large Scale Oil Spills: Pollution caused by ships, is a huge source of ocean pollution, the most devastating effect of which is oil spills.
- Ocean Mining: Ocean mining sites drilling for silver, gold, copper, cobalt, and zinc create sulfide deposits up to three and a half thousand meters down into the ocean.
- Plastic Pollution: In 2006, the United Nations Environment Programme estimated that every square mile of ocean contains 46,000 pieces of floating plastic.

What measures have been taken to protect biodiversity?

- The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The MARPOL Convention was adopted on 2 November 1973 at IMO. It came into force in 1983 after much deliberation.
- Prevention of Marine Pollution is also dealt with by Merchant Shipping Rules, 2009 framed under the Merchant Shipping Act, 1958.
- Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircarft (1972) The Oslo Convention Convention for the Prevention of Marine Pollution from Land-based Sources (1974)The Paris Convention.
- Global Programme of Action for the Protection of the Marine Environment from LandBased Activities is another initiative and the only global intergovernmental mechanism directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems.
- Also in 2015, India ratified the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunker Convention) which ensures adequate, prompt, and effective compensation for damage caused by oil spills.
- Wetland (Conservation and Management) Rules 2010 have been framed for the protection of wetlands, in the States. The Centrally Sponsored Scheme of National Plan for Conservation of Aquatic Eco-System also provides assistance to the States for the management of wetlands including Ramsar sites in the country.

Conclusion

India is gifted with huge marine biodiversity, global threats like climate change adversely affects the marine ecology along with that many types of pollutants present threat to resources. With international efforts, coordinated efforts within states and at national level has to be taken to protect the environment and the livelihood of millions dependent on it.

23. Examine the problem of pollution of water bodies in North India. What measures would you suggest to address this problem?

Approach

Since the question is asking you to examine, you have to probe deeper into the topic and understand the topic in detail. Here you are expected to investigate and establish the key facts and issues related to the question.

Introduction

Water pollution is a major environmental issue in India. The largest source of water pollution in India is untreated sewage. The other sources include agricultural runoff and unregulated small-scale industries. Most rivers, lakes and surface water sources in India are polluted but the problem of pollution of water bodies in North India is way more than that of south India.

Body

THE PROBLEM OF POLLUTION OF WATER BODIES IN NORTH INDIA –

- There is a huge gap between the generation and treatment of domestic waste water in North India.
- The problem is not only that North India lacks sufficient water treatment capacity but also that the sewage treatment plants that exist are either not maintained properly or are not in operation.
- The majority of the government-owned sewage treatment plants remain closed most of the time due to improper design or poor maintenance or lack of reliable electricity supply to operate the plant, together with absentee employees and poor management.
- The waste water generated in these areas normally percolates into the soil and evaporates.
- The uncollected waste accumulates in urban areas causing unhygienic conditions and releasing pollutants that leach into surface and ground water basins.
- Rapid growth of population and urbanization in North India during the recent decades has given rise to a number of environmental problems such as water scarcity, wastewater generation and its collection, treatment and disposal.
- Many industries in North India are located on river banks and use the rivers as open sewers for their effluents. The rivers are greatly polluted by such industrial wastes or effluents. All these industrial wastes are toxic to life that consumes this water.

MEASURES TO ADDRESS THIS PROBLEM –

India is taking several steps to rebalance the quality of its water source, from flocculation and reuse of industrial water to the contributions that local Indian start-ups are making. But there are lessons we need to learn and we have to take similar measures like other states have taken. Examples include –

- In Chennai, a city in Eastern India, industrial water reuse rose from 36000 to 80000 cubic meters in 3 years, from 2016 to 2019.
- VA Tech Wabag, a water company quartered in Chennai, also built numerous water reuse plants all across India.
- n Gujarat, a state of more than 70 million citizens, the government launched its Reuse of Treated Waste Water Policy, which aims to drastically decrease the use of Narmada river, It will install 161 sewage treatment plants all across Gujarat in order for industrial and construction sectors to use the treated water.
- Evaluations offer that in 2015, the Indian government installed almost 16000 reverse osmosis plants in Karnataka and 281 solar electrolytic defluorination plants in Madhya Pradesh.

Conclusion

Around 80% of India's water is severely polluted because people dump raw sewage, silt and garbage into the country's rivers and lakes. This has led to water being undrinkable and the population having to rely on illegal and expensive sources. Water pollution in India has taken away people's lives, especially the lives of children who are particularly vulnerable to waterborne infections. The accomplishments North India has made should not be a stop in its battle with the water crisis, but only the beginning because many still cannot access clean water.

24. How do vaccines create immunity against viral infections? Explain with the help of suitable examples.

Approach

A simple and straightforward question where in the candidate needs to explain how vaccines create immunity against viral infections with the help of suitable examples.

Introduction

Many viruses infect humans and most are controlled satisfactorily by the immune system with limited damage to host tissues. Some viruses, however, do cause overt damage to the host, either in isolated cases or as a reaction that commonly occurs after infection. Vaccines help in combating such viral infections.

Body

- The immune system is a network of cells, tissues and organs that work together to help fight off infection from harmful viruses. When a disease-causing agent, such as virus, invades body, immune system recognises it as harmful and will trigger a response to destroy it.
- One of the ways immune system fights off infection is by creating large proteins known as antibodies. These antibodies act as scouts, hunting down the infectious agent, and marking it for destruction by the immune system.
- Each antibody is specific to the virus that it has detected and will trigger a specific immune response. These specific antibodies will remain in the immune system after the infection has gone. This means that if the same disease is encountered again, immune system has a 'memory' of the disease and is ready to quickly destroy it before a person gets sick.
- Sometimes, however, the immune system doesn't always win this initial battle against the harmful bacteria or virus and people can become very ill or – in extreme cases – die.
- Vaccination is the safest and most common way to gain immunity against a virus that one's body has yet to encounter. Vaccines contain a harmless form of the virus that causes the disease one is being immunised against.
- Vaccines help develop immunity by imitating an infection. This type of infection, however, almost never causes illness, but it does cause the immune system to produce T-lymphocytes and antibodies.
- Sometimes, after getting a vaccine, the imitation infection can cause minor symptoms, such as fever. Such minor symptoms are normal and should be expected as the body builds immunity.
- Once the imitation infection goes away, the body is left with a supply of "memory" T-lymphocytes, as well as B-lymphocytes that will remember how to fight that disease in the future. However, it typically takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination.
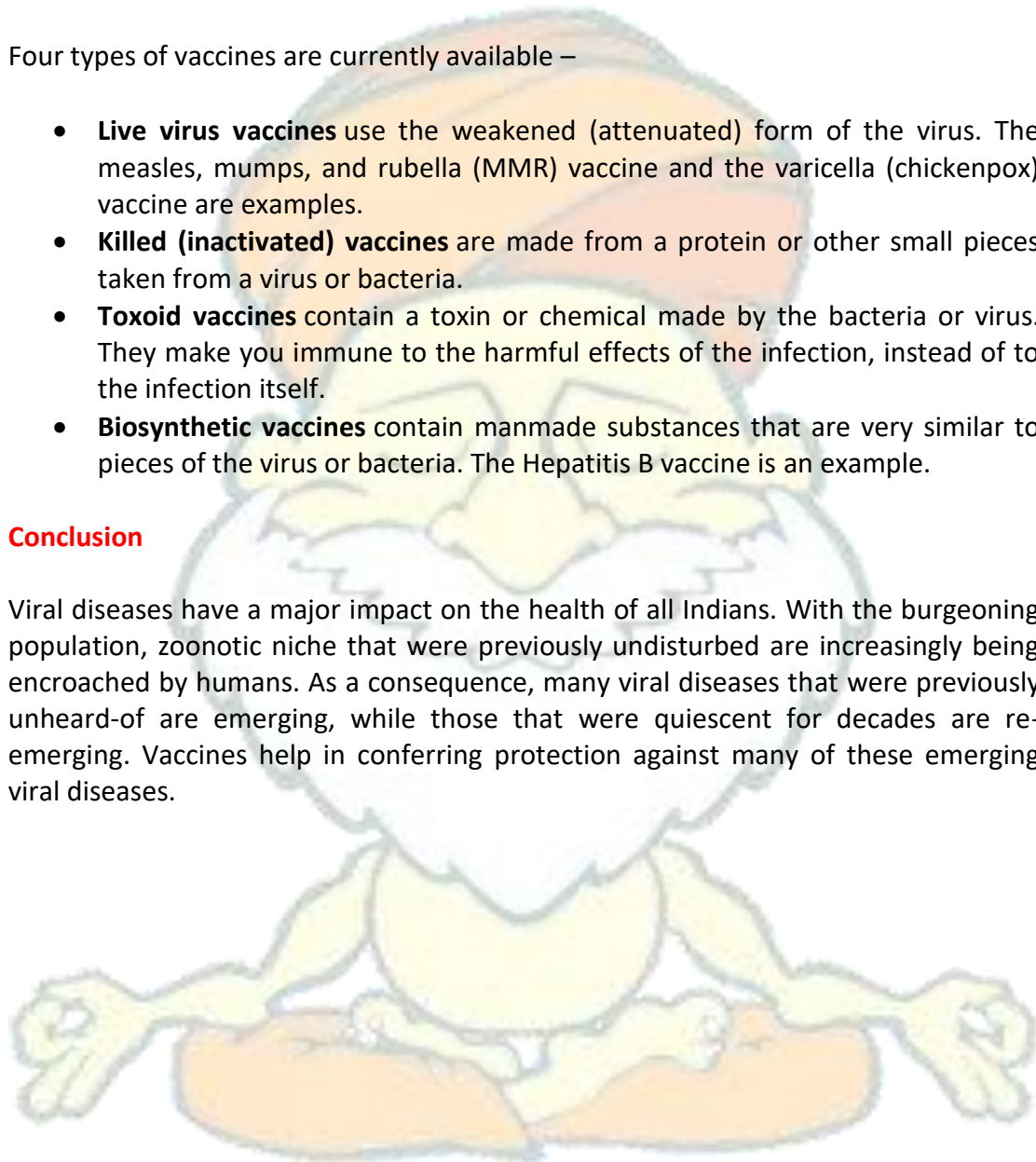
- Therefore, it is possible that a person infected with a disease just before or just after vaccination could develop symptoms and get a disease, because the vaccine has not had enough time to provide protection.
- Scientists take many approaches to developing vaccines. These approaches are based on information about the infections (caused by viruses) the vaccine will prevent, such as how germs infect cells and how the immune system responds to it.

Four types of vaccines are currently available –

- **Live virus vaccines** use the weakened (attenuated) form of the virus. The measles, mumps, and rubella (MMR) vaccine and the varicella (chickenpox) vaccine are examples.
- **Killed (inactivated) vaccines** are made from a protein or other small pieces taken from a virus or bacteria.
- **Toxoid vaccines** contain a toxin or chemical made by the bacteria or virus. They make you immune to the harmful effects of the infection, instead of to the infection itself.
- **Biosynthetic vaccines** contain manmade substances that are very similar to pieces of the virus or bacteria. The Hepatitis B vaccine is an example.

Conclusion

Viral diseases have a major impact on the health of all Indians. With the burgeoning population, zoonotic niche that were previously undisturbed are increasingly being encroached by humans. As a consequence, many viral diseases that were previously unheard-of are emerging, while those that were quiescent for decades are re-emerging. Vaccines help in conferring protection against many of these emerging viral diseases.

25. What are the challenges in enforcing model code of conduct during elections? Discuss.

Approach

The student is expected to define MCC shortly and then write down the challenges in enforcing the model code of conduct. He should briefly conclude with a way forward.

Introduction

The Model Code of Conduct (MCC) is a document from the Election Commission of India that lays down the minimum standards of behaviour for political parties and their candidates contesting elections, by defining their dos and don'ts in the electoral battle. It ensures that the party in power doesn't gain an unfair advantage and free and fair elections can be conducted. However, the emergence of social media and other online platforms has posed challenges for the effective implementation of the Model Code of Conduct.

Body

The MCC is not enforceable by law. However, certain provisions of the MCC may be enforced through invoking corresponding provisions in other statutes such as the Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Representation of the People Act, 1951. The Election Commission has argued against making the MCC legally binding; stating that elections must be completed within a relatively short time (close to 45 days), and judicial proceedings typically take longer, therefore it is not feasible to make it enforceable by law.

On the other hand, in 2013, the Standing Committee on Personnel, Public Grievances, Law and Justice, recommended making the MCC legally binding. In a report on electoral reforms, the Standing Committee observed that most provisions of the MCC are already enforceable through corresponding provisions in other statutes, mentioned above. It recommended that the MCC be made a part of the Representation of the People Act, 1951.

According to the EC, the code states that the party in power — whether at the Centre or in the States — should ensure that it does not use its official position for campaigning. Ministers and other government authorities cannot announce financial grants in any form. No project or scheme which may have the effect of influencing the voter in favour of the party in power can be announced, and Ministers cannot use official machinery for campaign purposes.

- Jurisdiction issues: Digital companies like Facebook are run by companies located overseas. Holding them accountable has been difficult for Indian agencies. EC will face a similar challenge in preventing MCC violations.

- Fake News: Digital media is a potent source of unverified and deliberate fake news. EC lacks resources as well as surveillance capacity to implement and punish the violation of MCC.
- Difficult to Identify Perpetrator: Most of the information during elections is targeted through the algorithm of [online] platforms to push in much more subtle marketing messaging blended with political canvassing,
- Unregulated Nature of Digital Media: All the current measures in place to regulate elections online are being implemented based on voluntary commitments made by online platforms. So, there are no legally binding obligations on, for instance, Facebook or Twitter to take certain actions and there are no penalties prescribed for failing to do so.

Conclusion

In 2015, the Law Commission in its report on Electoral Reforms, noted that the MCC prohibits the issue of advertisement at the cost of public exchequer in newspapers/media during the election period. However, it observed that since the MCC comes into operation only from the date on which the Commission announces elections, the government can release advertisements prior to the announcement of elections. It noted that this gives an advantage to the ruling party to issue government sponsored advertisements that highlights its achievements, which gives it an undue advantage over other parties and candidates. Therefore, the Commission recommended that a restriction should be imposed on government-sponsored advertisements for up to six months prior to the date of expiry of the House/Assembly. However, it stated that an exception may be carved out for advertisements highlighting the government's poverty alleviation programmes or any health related schemes.

26. Discuss the recent strategies adopted by the government to address the challenge of naxalism.

Approach

A simple and straightforward question where in the candidate needs to discuss the recent strategies adopted by the government to address the challenge of naxalism.

Introduction

Naxalism can be traced backed to its origin in Naxalbari village of West Bengal state. It started as a movement to voice its concerns by landless labourers and tribals and gradually has become an internal security threat to the country. Also, Left Wing Extremism or Naxal Movement has become a source of extreme violence in many parts of the country.

Body

LWE/Naxalism is considered to be the most important internal security concern. These extremists attack the symbols of the country's power such as the police, schools and other government institutions. In this regard, strategies to deal with Naxalism, including the recent one's are –

- Left Wing Extremism (LWE) Division: It was created in the Home Ministry to effectively address the Left Wing Extremist insurgency in a holistic manner. It implements security related schemes aimed at capacity building in the LWE affected States.
- SAMADHAN strategy of government to frame short term and long term policies to tackle LWE. The acronym SAMADHAN stands for Smart leadership, Aggressive strategy, Motivation and training, Actionable intelligence, Dashboard Based KPIs (key performance indicators) and KRAs (key result areas), Harnessing technology, Action plan for each theatre, and No access to financing.
- Government has formulated National Policy and Action Plan adopting multipronged strategy in the areas of security, development, ensuring rights & entitlement of local communities etc. This has several sub-schemes like Security related expenditure scheme(2017-20), Special Central Assistance scheme which involves modernisation of police force, Civic action program which aims at bridging the gap between Police and locals through personal interaction.
- Media Plan: The Maoists have been misguiding and luring the innocent tribals/ local population in LWE affected areas. To deal with their false propaganda, activities like Tribal Youth Exchange programmes organised by NYKS, radio jingles, documentaries, pamphlets etc. are being conducted.
- Aspirational District: The Ministry of Home Affairs has been monitoring Aspirational districts programme in 35 LWE affected districts.

- Modernisation and upgradation of the State Police and their Intelligence apparatus and fortification of Police stations. Further, Improvement in governance and public perception management, Better equipment of CRPF, Setting up of Counter Insurgency and Anti-Terrorism (CIAT) schools, Facilitating inter-State coordination and Assistance in community policing and civic action programmes can help.
- Institutional measures like Blank Panther Combat Force (in line with the Greyhounds of Andhra and Telangana region), Bastariya battalion (locals joining as police, who are well informed of the terrain), multidisciplinary groups under MHA to check funding to the Naxalites.
- Government is aiming for capacity building and skill development of the locals, schemes like ROSHNI that aims at providing jobs to the locals, the Ekalavya model residency schools for better educational facility to tribal children.
- Government is also working on Economic Inclusion, like providing support prices for Minor forest produce (MFP), establishing Van Dhan Kendras to aid tribal income. The Surrender and Rehabilitation policy too, has seen success to some extent

2nd ARC recommendations to overcome red corridor challenges –

- For effective implementation of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Rights) Act, 2006, multidisciplinary Oversight Committees may be constituted to ensure that the implementation does not adversely affect the local ecosystems.
- Special efforts are needed to monitor the implementation of constitutional and statutory safeguards, development schemes and land reforms initiatives for containing discontent among sections vulnerable to violent left extremism.
- Performance of the States in amending their Panchayati Raj Acts (PESA) and implementing these provisions may be monitored and incentivised by the Union Ministry of Panchayati Raj.
- Special anti-extortion and anti-money laundering cell should be established by the State police/State Government. To break the nexus between illegal mining/forest contractors and transporters and extremists which provides the financial support for the extremist movement.

Conclusion

For the holistic last-mile development of "New India", it is necessary to get rid of the menace of such radicalized groups & the synergized efforts of the Centre and the States are crucial in achieving the same where both should continue to follow the two pronged strategy i.e. ensuring safety of the people in the naxal-affected regions as well as taking initiatives for the development of such regions.

27. With the internal security threats emanating from communication networks, what steps can be taken to regulate their misuse without violating the right to privacy and freedom of expression? Discuss.

Approach

Candidates are expected to write about internal security threats emanating from the communications networks. And then suggests steps to regulate misuse.

Introduction

In cutthroat competition and rapidly changing technical environment, there is more economic uncertainty and complexities that afflicting the nation. Security is described by experts as ensuring protected communication among computing/communication systems and user applications across public and private networks, is essential for guaranteeing confidentiality, privacy and data/information protection.

Body

Recent issues threats emanating from the communication network –

- Various communication networks are the mainstay of much of the critical infrastructure in many sectors today such as civil aviation, shipping, railways, power, nuclear, oil and gas, finance, banking, IT, law enforcement, intelligence agencies, space, defence, and government networks.
- The Ministry of Home Affairs notification through its Cyber Coordination Center on ZOOM Application after Computer Emergency Response Team's (CERT-IN) raised concerns on video conferencing through the app in lockdown situation once again exposed the threats to the internal security through communication networks.
- The recent digital security breach by a spyware called Pegasus compromised phones of multiple activists, journalists and lawyers in India. The spyware was able to track multiple user applications like messages, emails, audio calls, browser history, contacts including end-to-end encrypted data. The whole incident brought forward the issue of digital security and the ways to achieve it with minimum loopholes.
- With the help of social media, people have started attacking each other's religion on this platform. Sensitive tweets regarding religion are becoming a common phenomenon. Circulation of certain pictures through communication networks also creates a panic among the masses. This is a threat to the internal security of the nation as it disturbs the communal harmony.
- Popular communication networks websites are another means of attracting potential members and followers. These types of virtual communities are growing increasingly popular all over the world, especially among younger

demographics. This can build Anti-national Sentiments among Society. Hackers write or use ready-made computer programs to attack the target computer. By using communication networks hackers breach the national security and steal important data of defence or other strategic sectors. This can kneel the whole country without using Arms and Ammunition.

Steps to regulate misuse without violating the fundamental rights –

- The National Informatics Centre (NIC) has launched an instant messaging platform called Sandes on the lines of WhatsApp. The National Informatics Centre (NIC) has launched an instant messaging platform called Sandes on the lines of WhatsApp.
- Governments across the world should strengthen their Cybersecurity Framework to deal with the threats posed by dark net. They must cooperate with each other regarding securing the Cyberspaces worldwide through intelligence, information, technology and expertise sharing.
- Real-time intelligence is required for preventing and containing cyber attacks. To achieve that, India needs to secure its computing environment and Internet of Things (IoT) with current tools, patches, updates and best-known methods in a timely manner.
- The need of the hour is to develop core skills in cyber-security, data integrity, and data security fields and setting up of stringent cyber-security standards to protect the institutional infrastructure of the country.
- The Ministry of Home Affairs has already taken effective measures to strengthen the national security apparatus and communication and information management systems. All internal security activities should be underpinned by vigorous information management to safeguard the effective use of resources and data assets.
- Nevertheless, security agencies face challenges at every stage of information management such as creation, collection, storage, and communication. To deal with such as challenges, security agencies must develop robust and automated information management and install various protective measures to protect from cyber threats.
- Development of Public Private Partnerships is an important strategy under the National Cyber Security Policy 2013. Pursuant to this aim, under the aforementioned Cyber Swachhta Kendra initiative, antivirus company Quick Heal is providing a free bot removal Tool.

Conclusion

To summarize, internal security organisations in India and around the globe has to undergo unparalleled challenges such as the need to tackle crime, address the increasing challenge of Transnational criminal networks and the ongoing threat of international and domestic terrorism, cybercrime, money laundering, narcoterrorism and human trafficking.

28. Comment on the role played by media and social networking sites during the COVID pandemic.

Approach

Candidate with the help of examples and anecdotes from the current happenings can give the picture of role played by traditional media and social media sites during the pandemic outlining positives and negatives of the platforms.

Introduction

Human beings, from the history of their existence are connected like never before. Globalisation and communication revolution has drastically changed the way information is processed, received and spread. Covid-19 pandemic brought out some of the unique characteristics of this infodemic. Consistent information, misinformation and fake news have permanently changed the way we receive news.

Body

The Covid-19 pandemic has caused social and economic disruptions all around the globe. Moreover, the worrisome situation is not just because of the pandemic but the ease at which fake news has been spreading around it. The World Health Organization (WHO) admitted that humanity is fighting two foes — a pandemic and an "infodemic".

What is infodemic? Infodemic is an overabundance of information that makes it difficult for people to identify truthful and trustworthy sources from false or misleading ones. In the present state of emergency, a barrage of information on the virus has deluged the traditional and social media space.

Role of media and social networking sites during pandemic –

- As the cases of covid-19 is increasing day by day, the load of media to entertain people is also increasing. Here the role of Television and radio is very crucial, as most of the medium is not accessible. They are loaded with dual responsibility is not only entertaining the audience but also providing with relevant and genuine data.
- The initial role of media in this time or anytime is to educate, inform and entertain. And here the credibility arrives, things should be told with facts to avoid further conflict or confusion. It works as breeze between government and general public. Television has robust power to make how we see the world, as it so flexible that could influence the people in a large extent.
- The issues like tablighi jamaat were blown out of proportion by television media by calling it virus jihad. During the pandemic, sense of helplessness and polarisation was created among the sections of society. The role of

television media is to convey the information, with large graphics and loud announcements, media houses declared a kind of apocalypse is here.

- Even today we see glamorisation of poverty and sufferings of common man, media should be sensitive enough to understand the sufferings of patients and their relatives and choose not to go after sensationalization.

Social networking sites –

- Social Media, with its ability to amplify a message through endorsements and forwards, gives one the tool to reach a potential audience without needing substantial resources or access to expensive media technology.
- Social media provides the tools for an information cascade. It enables individuals to distribute large volumes of disinformation or fake news. Today's decision-making is not based on individual rationality but from shared group-level narratives. Social media helps in making the false and misleading narratives of some social miscreants.
- There are rising dangerous conspiracy theories of Covid-19 of being a Bioweapon. A rumour of a lockdown of essential commodities resulted in people hoarding the essential supplies.
- Social media did played positive role as a crucial conduit between families, friends, office, and a medium of entertainment. A reliable way for the victims of this virus to communicate with the outside world.
- In response to Covid-19 pandemic, it gave birth to a fair share of online fundraisers. For example, donations in the PM-CARES fund got encouraged by people sharing this on social media.
- People are also giving money to financially struggling hospitals, as well as individuals at risk of dying from the disease. From plasma to oxygen cylinders, information is disseminated through social media.
- Social media displays and strengthens solidarity against this virus. For example, Indian Prime Minister called for lighting lamps to reinforce the public commitment to fight Covid-19.
- WHO and other public health organizations also use social media to inform the public about the outbreak, and control the panic. It is being used to spread preventive steps that one can take to fight Covid-19. These small changes in behaviours can have enormous consequences.

Conclusion

Traditional media and in particular social media is a two edged sword. Fake information spreads faster than the virus and it mutates with an enormous speed. To immune ourselves from this virus of misinformation we have to take vaccine of optimum use of social media platforms and be informed from the authentic media platforms and not to run after the sensationalization.

29. What are the security challenges posed by emerging technologies like artificial Intelligence and block chain? Discuss.

Approach

Question is straight forward in its approach students are expected to write about the security challenges posed by emerging technologies like artificial intelligence and blockchain technology also it is important to substantiate with examples as well.

Introduction

Artificial intelligence and block chain are the new disruptive technologies emerging across sectors worldwide Artificial Intelligence (AI) is fast evolving as the go-to technology for companies across the world to personalise experience for individuals. The technology itself is getting better and smarter day by day, allowing more and newer industries to adopt the AI and blockchain for various applications. The rudimentary applications AI include bring smarter chat-bots for customer service, personalising services for individuals, and even placing an AI robot for self-service at banks. Beyond these basic applications, banks can implement the technology for bringing in more efficiency to their back-office and even reduce fraud and security risks.

Body

Security challenges posed by Artificial Intelligence and block chain are as follows –

- Hackers are embracing the machine learning algorithms behind the technology's success to create nuanced attacks personalized for specific individuals. Because AI can be "taught" with data sets, hackers can either create their own programs or manipulate existing systems for malicious purposes. Attacks executed with AI tend to be more successful, perhaps because the technology makes it easier to develop malware with the ability to evade even sophisticated threat detection. For example, pairing polymorphic malware with AI allows these programs to change their code rapidly, making them almost invulnerable to existing cybersecurity systems.
- Massive Data Centres Needed – Achieving the abovementioned objectives, AI requires massive computational capacity, which means more power-hungry data centres and a big carbon footprint.
- Jurisdictional Issues of Data Pooling – Countries are passing stricter legislations on data security (E.g. EUGDPR) that require citizen data to be stored on servers located domestically, picking colder climates beyond their borders is becoming a difficult option.
- The increasing accessibility of facial-recognition technology has also increased concerns with respect to privacy, security, and civil liberties.
- Data immutability has always been one of the biggest disadvantages of the blockchain. It is clear that multiple systems benefit from it including supply

chain, financial systems, and so on. However, if you take how networks work, you should understand that this immutability can only be present if the network nodes are distributed fairly.

- Another problem that it suffers from is the data once written cannot be removed. Every person on the earth has the right to privacy. However, if the same person utilizes a digital platform that runs on blockchain technology, then he will be unable to remove its trace from the system when he doesn't want it there. In simple words, there is no way he can remove his trace, leaving privacy rights into pieces.

- 51% attack is sometimes so critical that the intruders can gain control over the system for sure. Such a network will be affected by double-spending too. The security threat is aggravated by the anonymous nature of this bitcoin system. Anonymity is appreciated, but identifying culprits attempting illicit transactions is difficult here. Less Transparency is a downside of blockchain technology so far.

- In blockchain technology, it is hard to add or modify data once after it is recorded. It is considered as the major disadvantages and advantages of blockchain technology. Considering its downside, the process of data modification needs rewriting codes and indulges in an extensive process. Too much stability can sometimes adversely affect systems. The major disadvantage of blockchain technology here is irreversible records and its demanding modification process.

Conclusion

Blockchain technology and Artificial intelligence has proven itself robust and secure. It ensures integrity of the data and reduces incidents of fraud. The decentralised nature of the blockchain technology applications makes it a perfect fit for many industries to carry out secure business transactions. The proper use of blockchain technology allows us to avoid the use of middlemen or partner platforms in a peer-to-peer network, reduce reception time, fraudulent proof. Similarly Artificial Intelligence has a promising future and has everything for the benefit of humankind if concerns regarding security are alleviated fully.

30. How has organised crime evolved in recent years? How does organised crime manifest itself? Analyse.

Approach

Candidate can define organised crime and with the help of examples and data, outline the recent trends by stating way forward to contain this threat.

Introduction

Organised crime is defined as "those involved, normally working with others, in continuing serious criminal activities for substantial profit, elsewhere". Organised criminals that work together for the duration of a particular criminal activity or activities are what we call an organised crime group.

Body

Organized crime has always existed in India in some form or another. It has, however, assumed its virulent form in modern times due to several socio-economic and political factors and advances in science and technology. Even though rural India is not immune from it, it is essentially an urban phenomenon.

Evolution of organised crime –

- Organized crime networks can be as small as within a locality conducting extortion and could become as large as involving transnational crime syndicates and conducting all kinds of activities ranging to drug trafficking, arms smuggling, terrorism, money laundering, etc.
- The Mumbai underworld, formerly known as the Bombay underworld, refers to the organised crime network in the city of Mumbai (formerly Bombay), in the state of Maharashtra in India. Mumbai is the largest city of India and its financial capital. Over a period of time, the Mumbai underworld has been dominated by several different groups and mobsters.
- Banditry is criminal activity involving robbery by groups of armed bandits. The East India Company established the Thuggee and Dacoity Department in 1830, and the Thuggee and Dacoity Suppression Acts, 1836–1848 were enacted in British India under East India Company rule. Areas with ravines or forests, such as Chambal and Chilapata Forests, were once known for dacoits.
- Several local Indian, Russian, Israeli and Nigerian mafia groups are heavily involved in the organised drug trade in Goa, India's smallest state. Sources reveal that there are also individual players who are British, French, Italian, Portuguese and from other European countries. Some have been visiting the state for over two decades and have their fixed international and local clientele.
- Punjabi mafia refers to the organised criminal gangs in the state of Punjab in India. There has been a spurt in the formation and activities of such criminal

gangs in Punjab over the last decade even though some gangs, associated with those based in Uttar Pradesh, have been operational in the state since the end of militancy in Punjab. Post militancy, they took to contract killings. The real estate and industrial sector boom of the early 2000s saw several criminals surfacing with the primary objective of controlling unions.

Recent trends in organised crime –

- India is a major transit point for heroin from the Golden Triangle and Golden Crescent en route to Europe. India is also the world's largest legal grower of opium; experts estimate that 5–10% of the legal opium is converted into illegal heroin, and 8–10% is consumed in high quantities as concentrated liquid.
- The pharmaceutical industry is also responsible for much illegal production of mandrax, much of which is smuggled into South Africa. Diamond smuggling via South Africa is also a major criminal activity, and diamonds are sometimes used to disguise shipments of heroin.
- In the cinema of India, particularly Bollywood, crime films and gangster films inspired by organised crime in India have been produced since 1940. Indian cinema has several genres of such crime films.
- Terrorism is a serious problem which India is facing. Conceptually, terrorism does not fall in the category of organized crime, as the dominant motive behind terrorism is political and/or ideological and not the acquisition of money-power. However, the Indian experience, shows that there is very little difference between criminals and terrorists. There is evidence to suggest that, be it terrorists of J&K, insurgents of the North East or for that matter the Left wing extremists, all are using the methods and tactics of organized crime to raise funds for their organizations.
- The terrorist groups share relations with organized crime at several levels which includes conducting operations for the sole purpose of raising money, seeking assistance from the organized crime networks.
- To summarize, Union of organized crime and terrorism is major menace for international safety and peace. These crimes are growing at rapid rate. It can be concluded from reviewing major facts of these crimes that Organized crime is a rising as international phenomenon and, as it intersects with terrorism, an increasingly dangerous force.

Conclusion

Just as terrorists pool their abilities and resources to achieve synergistic outcomes. Its abolition can be possible only if collaboration is attained at global scale and counter-terrorism programs along with development schemes. To eliminate organised crimes, local level policing needs to be strengthened along with intelligence capacities. Organised crimes are a potential threat to internal security and needs to be dealt with iron fist.

31. Discuss the security challenges posed by insurgent groups. What has been the strategy of the government to tackle them? Examine.

Approach

Since the question is asking you to discuss (you have to use your skill at reasoning, backed up by deliberately selected evidence to make a case for and against an argument) the security challenges posed by insurgent groups. After that you have to examine (strategy of the government to tackle them) strategy of the government to tackle them.

Introduction

The Northeast and the Maoist insurgencies have posed major security threats to the Indian state since the 1950s and late 1960s. As per the reports, the 80% reduction in insurgency-related incidents and rise in the number of insurgents giving up arms by over 1600% from 2019 is improvement and a great achievement for the government and security forces because of which, the Armed Forces (Special Powers) Act, 1958, has been removed completely from Meghalaya and Tripura and its application has been reduced in Arunachal Pradesh.

Body

THE SECURITY CHALLENGES POSED BY INSURGENT GROUPS –

- That the Indian insurgents can cross the international border and hide in the neighbouring country is not new.
- Since the inception of insurgency in the Northeast in the 1950s, the Naga, Mizo, Meitei, and Assamese insurgents have been crossing over into Myanmar to set up bases, especially in the Chin state and Sagaing Region, where they rest, recoup, train, plan and launch future offensives, and take shelter when pursued by the Indian security forces.
- Besides cross border movement of insurgents, rampant gun running and drug trafficking are other significant security challenges emanating across the India-Myanmar border.
- The Indian insurgent groups have been procuring arms from the black markets of Southeast Asia as well as from Myanmar based rebel group such as the United Wa State Army (UWSA).
- These weapons are often brought in as headloads by the insurgents as well as the local villagers because these headloads are seldom checked by the border guarding forces.
- The narcotics are trafficked into India through the states of Mizoram, Manipur, and Nagaland from Bhamo, Lashio and Mandalay. For example: Proximity to Myanmar in the 'Golden Triangle' makes the India-Myanmar border vulnerable to trafficking of heroin and amphetamine-type stimulants (ATS) produced in Myanmar.

- While the bigger insurgent groups are not directly involved in drug trafficking to generate funds, they do so indirectly by demanding protection money from drug mafia for allowing safe passage to the drug consignments through their area.

THE STRATEGY OF THE GOVERNMENT TO TACKLE THEM –

- The Indian government's counterinsurgency campaign in Kashmir is effective largely due to the government's use of a massive military response.
- The military has defeated the insurgents' attempts to transition to guerrilla warfare and has forced the insurgency to use terrorism as its main means to gain support among the Kashmiris and the international world,
- The relentless operations by the security forces and proactive government policies have laid the foundation for tackling insurgency issues.
- Favourable external environment with Myanmar and Bangladesh has struck at the roots of the insurgent organizations in north east as well.

Conclusion

The internal security problems should not be treated as merely law and order problems. They have to be dealt with comprehensively in all their dimensions and at all levels — political, economic and social. They are all interlinked. At times, the required measures will conflict with each other. Going too far in one direction could be counter-productive. The security requirements have to be met, but that does not mean giving the security agencies a free hand. Striking the right balance is the key to success in meeting these challenges effectively. We need a comprehensive security policy that will be implemented effectively at all levels.

32. Discuss the recent efforts undertaken by the government to address the security
Challenges in border regions?

Approach

Question is very straight forwarded in its approach students are expected to discuss about the recent efforts taken by the government to address the security challenges in the border regions also it is important to mention the programs in this direction as well.

Introduction

The border security scenario in India is marked by many threats, with different sectors of the border posing different challenges and complexities. The threats to India are arguably increasing, with principal threats coming from Pakistan, Bangladesh and China, and noteworthy threats from Myanmar, Nepal and Bhutan. The Pakistan border sees cross-border terrorism and movement of armed militants and smuggling of goods and narcotics, while along the Bangladesh border, illegal immigration and smuggling have been the main concern. The China border sees fairly regular armed intrusions, and has recently been in the news due to the Doklam crisis that raised suspicions that China may have some concealed their goals in the border region.

Body

Efforts to address the security challenges in the border regions –

- The pace of border security projects in India has accelerated over the past two years. A prime example of this has been the implementation of a Comprehensive Integrated Border Management System (CIBMS) pilot project along two 5.5 km and 5.3 km stretches of the International Boundary (IB) in Jammu and Kashmir (J&K). Theoretically, CIBMS a robust system that works by integrating human resources, weapons, and high-tech surveillance equipment. Following Pathankot terrorist attack, MHA sanctioned implementation Comprehensive Management System (CIBMS) to establish an integrated security system at borders providing all round security even in adverse climatic conditions.
- Border Security Forces (BSF) obtained hi-tech systems such as Hand Held Thermal Imagery (HHTI) systems, Long Range Reconnaissance Observation Systems (LORROS), and Battle Field Surveillance Radars (BFSR) that greatly enhanced the detection ability of BSF personnel.
- Creating infrastructure: India is also constructing some critical bridges to cut down time for troop movement such as Dhola – Sadiya Bridge.
- India has joined hands with Japan to aggressively develop infrastructure projects in North east to contain China.

- To expedite border road construction, Ministry of Defence has decided to delegate administrative and financial powers to the Border Roads Organisation (BRO).
- A crime-free stretch has been established between the BSF border posts at Gunarmath and Kalyani and the BGB (Border Guards Bangladesh) border posts at Putkhali and Daulatpur.
- Coordinated Border Management Plan (CBMP) – aims to synergize the efforts of both the Border Guarding Forces for checking cross border illegal activities and crimes as well as for maintenance of peace and tranquillity along the India-Bangladesh border.
- 13 new Integrated Check Posts (ICPs) to encourage India's engagement with SAARC countries along with Thailand and Myanmar. ICP is able to interdict such elements while facilitating legitimate trade and commerce.
- Development of border areas has been a matter of concern for the country. The Border Area Development Programme (BADP) was initiated in western region, which at that point of time was the most volatile border, during the Seventh Five Year Plan period forpromotion of wellbeing and a sense of security among the border population. The development of border areas is now viewed as a part of the comprehensive approach to the Border Management, which focuses on socio-economic development of the people and promotion of wellbeing and a security environment in the border areas.
- Our navy has interdicted Chinese maritime research and survey vessels that entered our Exclusive Economic Zone (EEZ) and Continental Shelf (CS) without our prior consent in 2018 and 2019. India has legislation that requires foreign marine scientific vessels to seek licence prior to undertaking activities. This will need coordination between our national security agencies, the navy, and the government departments responsible for the marine environment and disaster management, but also collaboration with like-minded countries who share our concerns. Such cooperation includes, inter alia, deepening of real-time information exchange, co-development and deployment of UDA monitoring devices and joint processing of acoustic signatures, and closer coordination in the patrolling of sea lanes to ensure a free and open Indo-Pacific.

Conclusion

India has a land border of over 15,000 kms, which it shares with seven countries (Pakistan, China, Bangladesh, Nepal, Myanmar, Bhutan, and Afghanistan). In the Indian case, borders are quite complex and almost every type of extreme geography is present at different borders viz. deserts, fertile lands, swampy marshes or tropical evergreen jungles. There is cross border smuggling, the problem of drugs, cattle, humans, artefacts, fake Indian currency note (FICN), etc. The stability of country brings the full utilization of Human resource potential of the country and brings the economic development and peace and prosperity in the country so, border management is a key issue for whole round development of country. In order to ensure that strict vigil and infrastructure development is needed in the border areas.

33. Discuss the locational factors for the pharmaceutical industry. Examine the challenges posed to the pharmaceutical sector during the COVID pandemic.

Approach

Candidates are expected to write about location factors related to pharmaceutical industry explain with Indian examples. Also examine the challenges posed to the pharmaceutical sector during COVID pandemic.

Introduction

India is the largest provider of generic drugs globally. Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all medicine in the UK. India enjoys an important position in the global pharmaceuticals sector.

Body

Pharmaceutical industry: The pharmaceutical industry discovers, develops, produces, and markets drugs or pharmaceutical drugs for use as medications to be administered (or self-administered) to patients, with the aim to cure them, vaccinate them, or alleviate the symptoms. Location factors for the pharmaceutical industry –

- Supply of labour: Labour is one of the most important inputs in any industrial enterprise. India has a regular and cheap supply of labour, specifically the skilled labour. Also, as there is adequate supply of local labour/unskilled labour, then naturally it will be available at cheaper rates.
- Suitability of land and climate: Climatic conditions viz humidity, temperature and other atmospheric conditions are favourable for the pharma industry. For example, humid atmosphere is not suitable for the formation of pharmaceuticals.
- Stable growth in domestic market consumption: Despite recent headwinds, the Pharmaceutical industry in India has grown rapidly. India is likely to become one of the top 3 Pharmaceutical industries by 2030.
- Large pool of scientists and engineers with a potential to steer the industry ahead to greater heights. Presently, over 80% of the antiretroviral drugs used globally to combat AIDS (Acquired Immune Deficiency Syndrome) are supplied by Indian pharmaceutical firms.
- And within India, if there is one destination that all of them are making a beeline for it is Hyderabad. The city has the capacity to churn out well over a third of the global vaccine supply. Be it India's first indigenous Covid-19 vaccine candidate Covaxin or Russia's Sputnik V, Johnson & Johnson's Ad26. Cov2.S, FluGen's CoroFlu or even Sanofi's under development vaccine candidates, all have a Hyderabad connect.

- Whether a successful Covid-19 vaccine is developed in India or not, a vaccine developed anywhere in the world will be churned out of Hyderabad and Pune.
- The city-based pharma companies are actively involved in manufacturing lifesaving Covid-19 drugs including Remdesivir, Hydroxychloroquine, Favipiravir, etc Three more pharma companies from Hyderabad are actively engaged in the efforts to develop and manufacture Covid-19 vaccine.
- One of the first ICMR approved RT-PCR kits in India was from Hyderabad and Pune since then, a number of companies have developed PCR kits, rapid test kits, viral transport mediums, reagents, tech-based diagnostics solutions etc.
- There is no doubt that Hyderabad and Pune has played a critical role in the Indian pharmaceutical revolution which made the country not only self-sufficient in the medicine manufacture but also made it as the pharmacy capital of the world.

Challenges to the pharmaceutical industry in COVID pandemic –

- Disrupted Supply Chain: Over the globe, supply chains have been broken, disrupted, and some have even come to a grinding halt because of the nation-wide lockdowns, closed borders, and halted air travel.
- Need for Agility and Transparency: With the Covid-19 pandemic, there has been immense interest in the Pharma sector's workings by almost all social hierarchies. There is an increased need for faster, accurate, and transparent operations across the board.
- Workforce optimisation and Controls: During COVID-19, Pharma manufacturing companies made many adjustments to modus operandi. That includes accommodating remote workforce, social distancing when in person, wearing masks and gloves, and avoiding any possibility of spreading the coronavirus.
- Humongous Data Collation and Analysis: The research and clinical trials for potential drug treatments and vaccines for coronavirus worldwide generate unprecedented amounts of data and information. Paramedical experts and scientists in the Pharma industry look at agile tools to collate and manage data while generating insights.

Conclusion

While these changes and concerns are bound to affect the pharmaceutical industry's workings, proper management, technology, and software to navigate these challenging times will enable the pharmaceutical sector to rise to the occasion. The Covid-19 pandemic has brought forward existing and new challenges for the Pharma sector. However, it has given a chance to create opportunities and get transformations that can have a positive impact on the pharmaceutical industry.

34. Discuss the challenges being faced by India's civil aviation sector. What measures have been taken recently to address those? Discuss.

Approach

Candidate can give brief facts about aviation industry and its potential in the introduction and state challenges faced by the sector. With the help of new government schemes and initiatives, way ahead can be given.

Introduction

The civil aviation industry in India has emerged as one of the fastest growing industries in the country during the last three years. India has become the third largest domestic aviation market in the world and is expected to overtake UK to become the third largest air passenger market by 2024.

Body

Size of Indian aviation industry –

- India had the world's third-largest civil aviation market in 2017, with the number of passengers growing at an average annual rate of 16.3% between 2000 and 2015. It recorded an air traffic of 131 million passengers in 2016. Despite this growth, much of the country's aviation potential remains untapped.
- The Ministry of Civil Aviation is responsible for civilian aviation, through regulatory oversight by the Directorate General of Civil Aviation (DGCA).

Challenges faced by the sector –

- Paramount amongst all issues is the one of air safety. In the past few years, there have been a number of fatal accidents snuffing out hundreds of innocent lives. Many of these accidents could have been avoided if as the planners, managers and regulators had a better understanding of the dynamics of the man-machine interface.
- The airspace in India is going to see an increase in the number of aircraft flying. Hence, flying operations, air space management, arrivals and departures at airports, must be made more efficient for safe operations.
- The next most important issue is one of finance. We at times are hesitant to acknowledge that financial viability is essential for all concerned. Once this is accepted, optimisation of resources will become the normal way of life, as would competence and efficiency.
- Aviation turbine fuel (ATF) is one of the important sections of the industry. Indian government didn't not reduce the jet fuel prices in proportion to the fall in international crude oil prices. But, when there is a rise in crude prices,

it increases in the fuel cost would eventually increase the operation of the airline.

- Frequent government intervention is proving to a great obstacle for the growth of Aviation industry. Several aviation experts have pointed out that India government should follows aviation industry free from policy hurdles like regulating airfares and slash taxes, including jet fuel.
- High Airport (aeronautical) Charges levied by Airport Authority of India are higher. These charges payable at the International airports are higher than those payable at the airports designated as Domestic airports. As a result, the domestic airlines in India are incurring additional costs at the international designated airports without deriving any extra facilities.
- There is a cut throat competition faced by the top airline due to ticket pricing. Established Airlines are threatened by low cost carriers, which are eating up their market share.

Measures taken to address these issues –

- There is a need to complete the ongoing projects under the UDAN initiative in a time-bound manner. In addition, the existing capacity of international airports should be augmented under the International UDAN initiative.
- Government intention to make India a global hub for Aircraft Maintenance, Repair and Overhaul (MRO) services will result in saving costs and creating liquidity for airline companies.
- National Civil Aviation Policy 2016 and National Civil Aviation programme 2018 can help India to become a major civil aviation market in the world.
- The development of more airports under the PPP model with a view to improving the aviation infrastructure without the government having to pump in additional funds.
- With 100% FDI allowed under automatic route, aviation sector is likely to witness US$15 billion worth of investment in the next five years.
- New airports like Jewar Airport in Uttar Pradesh are being built under the NABH Nirman initiative based on (1) fair and equitable land acquisition, (2) long-term master plan for airport and regional development and (3) balanced economics for all stakeholders. This leads to growth in housing and real estate sector, construction, building materials, tourism, etc.
- With a new terms and conditions to divest Air India, government is trying to give positive signal making level playing field for small players.

Conclusion

Pandemic brought the aviation sector worldwide to a standstill. Industry witnessed many big players filing for bankruptcy after hitting a blow. Indian aviation sector is still booming and is expected to be third largest in the world by 2024. India needs relaxation in some harsh regulatory measures and liberalisation policy for exit of an airline. With more private sector investment, tier II and tier III cities will also see new infrastructure development as envisaged in civil aviation policy of 2016.

35. With the help of suitable examples, discuss the evolving global trends for the location of tertiary sector?

Approach

Question is straight forward in its approach students are expected to write about evolving global trends for the location of tertiary sector with suitable examples.

Introduction

Industrial locations are complex in nature. These are influenced by the availability of many factors. Some of them are: raw material, land, water, labour, capital, power, transport, and market. Tertiary sector refers to the commercial services that support the production and distribution process, e.g. insurance, transport, advertising, warehousing and other services such as teaching and health care. The chain of production shows interdependence: firms rely on other businesses in different sectors for raw materials, components or distribution.

Body

Evolving trends for the location of tertiary sector –

- Tertiary sector was mainly focussed on Information technology and other services industries like transportation etc. location of the same industries was mainly based on availability of cheap and skilled labour through business process outsourcing e.g. in India Information Technology reached to its peak through the process of business outsourcing.
- Outsourcing has witnessed a massive boom over the past few decades, with the number of service providing companies increasing every year. The year 2018 is going to be no different when it comes to keeping up with this exponential growth in the outsourcing trend. IT outsourcing trends, this year, have seen a constant growth and this trend will continue to grow in the coming years.
- Technological advancement will become a main factor in the location of tertiary sector in coming times. Robotic process automation and intelligent automation will continue to flourish in the coming years. This is expected to disrupt the existing commercial outsourcing model and drive down costs considerably, resulting in supplier margin expansion. Furthermore, enterprise buyers will also have opportunities to save more, as the supplier margins expand.
- With the use of self-service tools and automated chat-bots becoming highly prevalent among many companies, the demand for call centers is expected to decrease drastically. As virtual agents can work on numerous clients at the same time, these automated contact centers will be able to handle higher volumes with less number of agents. Therefore, we will see various tech-

enabled contact centers replacing the traditional call centers, few years down the line.

- Companies are expected to look out for service providers who add value to their business rather than those who just provide services at lower costs. Therefore, outsourcing companies will partner with service providers who offer innovative services, equipped with best infrastructure and thorough industry knowledge. This will become a disrupting factor in the already existing pattern of location of tertiary sector.
- With covid-19 pandemic making a broad based change Telecommuting is one trend which has changed the way outsourcing companies operate over the years and this trend is here to stay. Companies find it very easy to interact with other team members and integrate seamlessly through remote meetings and use different types of real-time monitoring tools to deliver quality services.
- Analysts are predicting that the industry will continue to fight short-term cost pressures, and that there will be pressure on service providers for more flexible pricing contracts. Many small alliances, focused on increased operational efficiencies, better quality control and reduced back office costs, are being set up. This trend is going to continue.
- Brazil and Russia will make their presence felt in the global outsourcing market and China will continue to move ahead.

Conclusion

India continues to be the major destination for outsourcing because it has been able to evolve with changing needs. NASSCOM, (National Association of Software & Service Companies) the apex body of India's premier IT software and service (IT & BPO) companies, reported that India's share in the global outsourcing market rose from 51% in 2009 to 55% in 2010. India still stands out for its customer service and efficiency, so its future is bright. Today, customers are not only looking at cost-effective solutions for their outsourced business but also for skilled staff, enhanced productivity, service quality and business process excellence. India, with its large population and multiple-skilled people, would continue to be preferred for both back-end and front-end outsourcing.

36. Is it the duty of the state to provide free vaccination to the population? Comment in the light of the ongoing debate over COVID vaccines.

Approach

Candidates are expected to write about vaccination, analyse whether state must provide free vaccinations. Also comment on ongoing debate over COVID vaccine.

Introduction

The Prime Minister of India said that India is entering a decisive phase of vaccination in the fight against COVID-19, with the approval of two made-in-India COVID-19 vaccines. The PM has also said that two vaccines are more cost-effective than any other in the world and that India's vaccine production & delivery capacity will be used to help all humanity in fighting this crisis.

Body

Duty of state to provide free vaccination –

- In the United States, the United Kingdom and Europe, vaccines are likely to be entirely free and administered publicly. However, given the tight fiscal situation, the Indian government faces the dilemma of whether to finance vaccinations publicly or privately.
- The government provided free vaccines to most prioritised beneficiaries including 1 crore healthcare and 2 crore frontline workers, in the first phase of covid-19 vaccination.
- Vaccinating everyone above 18 in the phase III of the inoculation drive will cost only about 0.36 per cent of the GDP, ratings agency India Ratings and Research said.
- In a move to boost the ongoing COVID-19 vaccination programme in the country, Finance Minister announced that Rs 35,000 crore (4.7 billion USD) will be provided towards the vaccines. However, it is unclear whether the vaccines will be provided free of cost to all citizens.
- The vaccine is being offered for free in order to encourage the community to take the vaccine and remove any financial impediment. Given the vaccine's huge impact on public health, it is reasonable to expect that the government makes it available free for all.
- While a free vaccine sounds appealing and should indeed be a government's prerogative in a pandemic, there are other responsibilities that also need to be taken care of India is staring at a zero or even negative growth rate through 2020.
- Lockdowns and slew of social distancing measures have also accelerated job losses, with CMIE reporting a loss of over 6 million jobs. Another fiscal stimulus is warranted and even recommended by IMF, with a focus on support for vulnerable groups, and support for businesses.

- While the option of doling out a free vaccine remains with the government, this promise cannot be made in a silo. Enough doses of any vaccine will not be immediately available and vaccination would require prioritisation of recipients.
- Last mile delivery of vaccines has to be assured and will require investment. Post-market monitoring of vaccine performance has to be designed to quickly respond to any adverse events.

Current scenario –

- The Centre during the first three phases procured the entire quantity of vaccines from the manufacturers Covishield and Covaxin and distributed it to states. During the initial three phases, healthcare workers, frontline workers, and those above the age of 45 were vaccinated.
- Now India is all set to begin its third phase of vaccination drive from May 1, including everyone aged 18 and older. The fourth phase, however, will incorporate several changes in vaccine policy. The many state government has decided to give Covid-19 vaccine free of cost to all those aged 18 and above in government centres.

Conclusion

Vaccine manufacturers have to be incentivised to ramp up vaccine supply to stay apace with vaccine demand. A free vaccine promise by itself is futile, unless accompanied by a transparent and evidence-based vaccine deployment plan. Therefore, instead of playing on people's fears, we need a transparent vaccination strategy, continued insistence on social distancing measures and monetary support for those vulnerable.