

1. What is deepfake? How can it be a security challenge? Examine.

Approach

Candidates are expected to write about basics of deepfake. And then highlight the Security challenges due to deepfake. Also can suggest the possible solution to tackle it.

Introduction

Deep fakes first came into notice in 2017 when a Reddit user posted explicit videos of celebrities. After that several instances have been reported. Deep fakes are computer-generated images and videos. Cybercriminals use AI softwares to superimpose a digital composite (assembling multiple media files to make a final one) onto an existing video, photo or audio.

Body

Deepfake as Security challenge:

- **Undermining Democracy:** A deepfake can also aid in altering the democratic discourse and undermine trust in institutions and impair diplomacy. False information about institutions, public policy, and politicians powered by a deepfake can be exploited to spin the story and manipulate belief.
- **Disrupting Electioneering:** A high-quality deepfake can inject compelling false information that can cast a shadow of illegitimacy over the voting process and election results. Leaders can also use them to increase populism and consolidate power. Deepfakes can become a very effective tool to sow the seeds of polarisation, amplifying division in society, and suppressing dissent.
- **Anti state sentiment:** Nation-state actors with geopolitical aspirations, ideological believers, violent extremists, and economically motivated enterprises can manipulate media narratives using deepfakes. It can be used by insurgent groups and terrorist organisations, to represent their adversaries as making inflammatory speeches or engaging in provocative actions to stir up anti-state sentiments among people.
- **Creation of Echo Chambers in Social Media:** Falsity is profitable, and goes viral more than the truth on social platforms. Combined with distrust, the existing biases and political disagreement can help create echo chambers and filter bubbles, creating discord in society.
- **Liar's dividend:** An undesirable truth is dismissed as deepfake or fake news. It can also help public figures hide their immoral acts in the veil of deepfakes and fake news, calling their actual harmful actions false.
- **Social Harm:** Deepfakes can cause short- and long-term social harm and accelerate the already declining trust in news media. Such an erosion can contribute to a culture of factual relativism.

- Targeting Women: The malicious use of a deepfake can be seen in pornography, inflicting emotional, reputational, and in some cases, violence towards the individual.
- Damage to Personal Reputation: Deepfake can depict a person indulging in antisocial behaviours and saying vile things. These can have severe implications on their reputation, sabotaging their professional and personal life. Further, Deepfakes can be deployed to extract money, confidential information, or exact favours from individuals.

What should be the solution for dealing with Deepfakes?

- Regulation & Collaboration with Civil Society: Meaningful regulations with a collaborative discussion with the technology industry, civil society, and policymakers can facilitate disincentivising the creation and distribution of malicious deepfakes.
- Detect and amplify: We also need easy-to-use and accessible technology solutions to detect deepfakes, authenticate media, and amplify authoritative sources.
- New Technologies: There is also need easy-to-use and accessible technology solutions to detect deepfakes, authenticate media, and amplify authoritative sources.
- Enhancing Media Literacy: Media literacy for consumers and journalists is the most effective tool to combat disinformation and deep fakes. Improving media literacy is a precursor to addressing the challenges presented by deepfakes.
- To counter the menace of deepfakes, we all must take the responsibility to be a critical consumer of media on the Internet, think and pause before we share on social media, and be part of the solution to this infodemic.

Conclusion

Collaborative actions and collective techniques across legislative regulations, platform policies, technology intervention, and media literacy can provide effective and ethical countermeasures to mitigate the threat of malicious deepfakes.

2. How do hybrid vehicles work? Are hybrid vehicles a sustainable alternative to traditional automobile? If yes, then what are the challenges in their wide scale adoption? Discuss.

Approach- Question is straight forward. Candidate is expected to define hybrid vehicles, explain how they function. Challenges in their adoption can be given by given by explaining pros and cons.

Introduction

A hybrid combines at least one electric motor with a gasoline engine to move the car, and its system recaptures energy via regenerative braking. Sometimes the electric motor does all the work, sometimes it's the gas engine, and sometimes they work together. The result is less gasoline burned and, therefore, better fuel economy. Adding electric power can even boost performance in certain instances.

Body

How do hybrid vehicles work?

- The basic principle with hybrid vehicles is that the different motors work better at different speeds; the electric motor is more efficient at producing torque, or turning power, and the combustion engine is better for maintaining high speed (better than a typical electric motor).
- Switching from one to the other at the proper time while speeding up yields a win-win in terms of energy efficiency, as such that translates into greater fuel efficiency.
- Regenerate braking- The drivetrain can be used to convert kinetic energy (from the moving car) into stored electrical energy (batteries). The same electric motor that powers the drivetrain is used to resist the motion of the drivetrain. This applied resistance from the electric motor causes the wheel to slow down and simultaneously recharge the batteries.
- Dual power- Power can come from either the engine, motor, or both depending on driving circumstances. Additional power to assist the engine in accelerating or climbing might be provided by the electric motor. Or more commonly, a smaller electric motor provides all of the power for low-speed driving conditions and is augmented by the engine at higher speeds.

Are they sustainable alternative to traditional automobile?

- Traditional automobile gives better power, low Economic price tag, have Low maintenance cost, have better agility (acceleration and speed).
- On the other hand, hybrid vehicles give higher mileage, they are cleaner, have higher resale value and reduce fuel dependence but they are high on maintenance.

What are the challenges for the wide scale adoption?

- Though hybrid cars consume less fuel than conventional cars, there is still an issue regarding the environmental damage of the hybrid car battery.
- Today most hybrid car batteries are one of two types: 1) nickel metal hydride, or 2) Lithium-ion; both are regarded as more environmentally friendly than lead-based batteries which constitute the bulk of petrol car starter batteries today.
- There is an impending increase in the costs of many rare materials used in the manufacture of hybrid cars. For example, the rare earth element dysprosium is required to fabricate many of the advanced electric motors and battery systems in hybrid propulsion systems.
- Neodymium is another rare earth metal which is a crucial ingredient in high-strength magnets that are found in permanent magnet electric motors. Nearly all the rare earth elements in the world come from China. Overdependence on china is major cause of concern in uncertain times of pandemic.
- In order for the hybrid to run on electrical power, the car must perform the action of braking in order to generate some electricity. The electricity then gets discharged most effectively when the car accelerates or climbs up an incline.
- In 2014, hybrid electric car batteries can run on solely electricity for 70–130 miles (110–210 km) on a single charge. Hybrid battery capacity currently ranges from 4.4 kWh to 85 kWh on a fully electric car. On a hybrid car, the battery packs currently range from 0.6 kWh to 2.4 kWh representing a large difference in use of electricity in hybrid cars making electric vehicles more attractive.

Conclusion

Hybrid vehicles present an optimistic alternative to traditional vehicle, in terms of saving fuel and energy, but adoption rate of hybrid vehicles is low owing to high price and high maintenance cost. Electric vehicles are occupying market at faster pace, to increase mass appeal above challenges can be addressed.

3. What are the key issues with the issuance and regulation of electoral bonds in India? Examine.

Approach:

Question is straight forward in its approach students are expected to write about the issues of electoral bonds and the issues associated with their issuance and regulation also it is important to mention points with proper explanation.

Introduction:

Electoral bonds are interest-free bearer instruments used to donate money anonymously to political parties. A bearer instrument does not carry any information about the buyer or payee and the holder of the instrument (which is the political party) is presumed to be its owner. The bonds are sold in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore, and the State Bank of India (SBI) is the only bank authorised to sell them. Donors can purchase and subsequently donate the bonds to their party of choice, which the party can then cash through its verified account within 15 days. There is no limit on the number of bonds an individual or company can purchase. SBI deposits bonds that a political party hasn't encashed within 15 days into the Prime Minister's Relief Fund.

Body:

Issues with Issuance and regulation of electoral bonds-

- The anonymity provided to donors donating electoral bonds is the point of contention here. Through an amendment to the Finance Act 2017, the Union government has exempted political parties from disclosing donations received through electoral bonds. In other words, they don't have to disclose details of those contributing by way of electoral bonds in their contribution reports filed mandatorily with the Election Commission every year.
- Moreover, while electoral bonds provide no details to the citizens, the said anonymity does not apply to the government of the day, which can always access the donor details by demanding the data from the State Bank of India (SBI). This implies that the only people in dark about the source of these donations are the taxpayers.
- Compromising Right To Know, The Indian Supreme Court has long held that the "right to know", especially in the context of elections, is an integral part of the right to freedom of expression under the Indian Constitution.
- By keeping this knowledge from citizens and voters, the electoral bonds scheme violates fundamental tenets of our democracy.
- Opposition by Election Commission of India The Election Commission, in May 2017, objected to the amendments in the Representation of the People (RP) Act, which exempt political parties from disclosing donations received through electoral bonds. It described the move as a "retrograde step".

- The electoral bonds scheme removes all pre-existing limits on political donations and effectively allows well-resourced corporations to fund elections and subsequently paving the way for crony capitalism.
- Further, as the electoral bonds scheme allows even foreign donations to political parties (which can often be made through shell companies) the prospects of institutional corruption increase with the electoral bonds scheme, instead of decreasing.
- The essential problem with the electoral bonds is that it obscures the real extent of the rot in political funding. Formally accounted for funds, whether as donations in cash, cheque or electoral bonds, constitute a tiny fraction of the actual expenditure of a political party. The bulk of the money is received and spent completely informally and not reported to any authority.

Way forward:

- Transparency in Elections Funding, In many advanced countries, elections are funded publicly. This ensures principles of parity and there is not too great a resource gap between the ruling party and the opposition.
- One of the most critical functions of an independent judiciary in a functioning democracy is to referee the fundamentals of the democratic process.
- Electoral bonds have raised questions on the electoral legitimacy of the government and thus the whole electoral process has become questionable. In this context, the courts should act as an umpire and enforce the ground rules of democracy.

Conclusion:

India cannot forever fund its democracy with the proceeds of corruption, money taken off the books of companies and funnelled to parties in wholly opaque ways. Such funding corrupts politics and makes the economy non-competitive. If project costs are routinely padded to siphon funds out during project implementation, so as to create the war chest with which to pay off parties. It is essential that if democracy is to thrive, the role of money in influencing politics ought to be limited. Thus, it is imperative that the scheme of the electoral bonds should be revised.

4. Examine the applications of nanotechnology in biomedicine?

Approach:

Question is straight forward in its approach students are expected to write about nanotechnology and its applications in biomedicine.

Introduction:

Nanotechnology is a field of research and innovation concerned with building 'things' - generally, materials and devices - on the scale of atoms and molecules. A nanometre is one-billionth of a metre: ten times the diameter of a hydrogen atom. The diameter of a human hair is, on average, 80,000 nanometres. At such scales, the ordinary rules of physics and chemistry no longer apply. For instance, materials' characteristics, such as their colour, strength, conductivity and reactivity, can differ substantially between the nanoscale and the macro. Carbon 'nanotubes' are 100 times stronger than steel but six times lighter. Nanotechnology is hailed as having the potential to increase the efficiency of energy consumption, help clean the environment, and solve major health problems. It is said to be able to massively increase manufacturing production at significantly reduced costs

Body:

Applications of nanotechnology in biomedicine-

- Nanomaterials have been used in diagnosis mostly as contrast agent in molecular imaging. They are usually in small size and of much higher surface area to volume ratio, thus their surface can be decorated with more therapeutic molecules, imaging agents, targeting ligands, and nucleic acids. When used as contrast agents, they can circulate in the blood for longer time with higher sensitivity and possibly fewer side-effects.
- Magnetic resonance imaging (MRI) provides superior contrast in soft tissue imaging and has no radiation. Compared with gadolinium-based MRI contrast agents, nanoparticle MRI contrast agents circulate longer in the blood, and have higher sensitivity and fewer side-effects.
- Nanomaterials have been introduced to the therapy of multiple diseases, including drug delivery system and nanodrugs. Drug delivery is one of the typical applications of
- nanomaterials in medicine. For example, tumor targeting, imaging and drug delivery can be accomplished by administrated gold nanoparticles and nanorods, iron oxide nanoworms and drug loaded liposomes. Some other nanomaterials can be used to decorate gold nanoparticles to improve the capability. The nanotechnology has also been applied to the intelligent drug-delivery systems and implantable drug-delivery systems, so as to realize the controlled and targeted release of therapeutic drugs. Besides drug delivery, nanomaterials have been adopted in some specific tumor therapies.

- The application of nanotechnology has opened a new realm in the advance of regenerative medicine. The development of nanotechnology offers more opportunities of applying stem cells in the regeneration of tissues and organs.
- The physical and chemical properties of carbon nanotubes (CNTs) have motivated their application in several areas of science. Modification of the surface of these particles and their functionalization with biological molecules at the molecular level has increased their use in nanobiotechnology. These modified particles provide well-dispersed samples that are compatible with physiological condition. In this context, nanotubes might be useful drug delivery vehicles because their nanometer size enables them to move easily inside the body.
- Nanotechnology has also found applications in tissue and implant engineering. The possibility to enhance the surface area of the material and to tune the roughness of its surface at the nanometric scale should yield better biological responses of osteogenic cells and effective mechanical contact between tissue and implant.
- The addition of bioactive minerals inspired by the bone structure has been one of the most commonly used strategies to modify metallic surfaces of the implant. Biomimetics is a desirable strategy because it predefines nanochemical and/or nanophysical structures.

However the Biosafety is mostly concerned in nanotechnological applications. It is important to better understanding the metabolic fate and biological effect in cells or organs as increasing nanomaterials are hopeful materials to be applied in medicine. The toxicity of most nanomaterials applied in biomedicine has been examined in preclinical research in that the low toxicity and optimal biocompatibility are necessary for their clinical applications.

Conclusion:

Products of nanotechnology will be smaller, cheaper, lighter yet more functional and require less energy and fewer raw materials to manufacture, claim nanotech advocates. Establishing the real effect of nanomaterials in biological systems is a challenging task. Nonetheless, in order to take advantage of the potential application of nanomaterials to medicine, a detailed understanding of their potential toxicity is necessary. However, the relationship between toxicity and physicochemical properties should always be interpreted cautiously to minimize false results.

5. How does India's IPR regime balance domestic interests with global trade concerns at forums like the WTO? Examine.

Approach

Candidates are expected to write about India's IPR regime and then examine how India balance its domestic interest with global trade concerns such as on global forum like WTO.

Introduction

Intellectual property rights (IPR) are the rights given to persons over the creations of their minds: inventions, literary and artistic works, and symbols, names and images used in commerce. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

Body

India's IPR regime:

- The National Intellectual Property Rights (IPR) Policy 2016 as a vision document to guide future development of IPRs in the country. It sets in place an institutional mechanism for implementation, monitoring and review. It aims to incorporate and adapt global best practices to the Indian scenario.
- CIPAM, setup under the aegis of DIPP, is to be the single point of reference for implementation of the objectives of the National IPR Policy.

Balancing domestic interest with global trade:

- Rameshwari Photocopy case: International publishers against a photocopy shop on Delhi University's (DU) campus in order to determine whether or not copyrighted material was being used in the course of instruction. Delhi HC upheld the shop's right to photocopy course material for students.
- This is a landmark verdict as photocopies provides for huge part of students course demands in India due to its easy availability and affordability. But Discourages international publishers in Indian market.
- India's first ever compulsory license was granted by the Patent Office on March 9, 2012, to Natco Pharma for the generic production of Bayer Corporation's Nexavar, a life saving medicine used for treating Liver and Kidney Cancer. Bayers sold this drug at exorbitant rates, with one month's worth of dosage costing around Rs 2.8 Lakh. Natco Pharma offered to sell it around for Rs 9000, making it affordable for people belonging to every stratum.
- Moreover TRIPS and Doha Declaration considered compulsory license as an important provision so as to provide health benefits to the people without any discrimination on the basis of color, caste, creed or even country. CL is permitted under the WTO's TRIPS (IPR) Agreement provided conditions such as 'national emergencies, other circumstances of extreme urgency and anti-competitive practices' are fulfilled.

- Recognizing the bias in international law, the Indian Protection of Plant Varieties and Farmers' Rights (PPV&FR) entitles not just the breeder but also the farmer.
- IPR policy is driven by the agenda of IP maximalism, where IP owners' rights will be maximised at the cost of public interest. This (policy) will influence courts and judges who might consider rights of patentees above that on common man in certain cases.
- Not understanding the modes of creativity and sharing in "shadow economy", the policy leans towards superimposition of formal IP framework.
- The National IPR Policy insistently makes the case for defensive measures, or measures which are primarily targeted at preventing IPR claims on traditional knowledge being granted to unauthorised entities.
- In its latest Special 301 report released by the United States Trade Representative (USTR), the US termed India as "one of the world's most challenging major economies" with respect to protection and enforcement of IP.
- Foreign investors and MNCs allege that Indian law does not protect against unfair commercial use of test data or other data submitted to the government during the application for market approval of pharmaceutical or agro-chemical products.
- While the National IPR Policy makes the right noises when it refers to the need to engage constructively in the negotiation of international treaties and agreements in consultation with stakeholders such a pronouncement has to be backed by concerted action to defend the interests of the country and its people in a proactive fashion.
- Experts says Indian IPR regime is innovation in itself and it is prototyped by many other developing countries. The recent issues and controversies shows India needs continuous revision and fine tuning of policies to have right balance between interests of common people and investors/technologists.

Conclusion

India has made a number of changes in its IPR regime to increase efficiency and has cut down the time required to issue patents. The culture of innovation is taking centre stage in the country. An efficient and equitable intellectual property system can help all countries to realize intellectual property's potential as a catalyst for economic development and social & cultural well-being.

6. What are India's strategic interests in having a friendly and peaceful Bangladesh?

Approach- Question is straight forward. Candidate can outline strategic importance of Bangladesh in the context of recent bilateral developments and give future roadmap of engagements to bolster the relationship.

Introduction

There is no country integrated more closely with India than Bangladesh in respect of language, ethnicity and culture. Its location is surrounded by India save for its coastline and a small border of 193 kilometre with Myanmar. The only religious difference drives the relationship to unusual degree.

Body

Recently Indian prime minister visited Bangladesh. The visits have been timed with celebrations to mark 50 years of the 1971 liberation war that led to the birth of Bangladesh. The prestigious Gandhi peace prize was awarded to sheikh Mujibur Rehman on his birth anniversary.

India's strategic interests with Bangladesh

- Strategic partnership is defined as anything relating to long term interests and goals; a strategic partnership, by extension, would relate to long term shared interests and ways of achieving them.
- Strategic partnerships are commonly associated with defence or security related issues, a wide range in bilateral relations, from defence to education, health and agriculture, and quite commonly, economic relations, including trade, investment and banking.
- Bangladesh is expected to cross India in terms per capita income. This speaks volumes about the achievements of Bangladesh when contrasted with Pakistan. At the same time, it has several implications for the region.
- Rapid and sustained economic growth in Bangladesh has begun to alter the world's perception of the subcontinent. India and Pakistan dominated the region and other countries were considered small. The economic rise of Bangladesh is changing some of that.
- Bangladesh's economic growth can accelerate regional integration in the eastern subcontinent. Instead of merely praying for the revival of Saarc, Delhi could usefully focus on the BBIN.
- Bilateral trade between India and Bangladesh stood at US\$6.6 billion in 2013–14 with India's exports at US\$6.1 billion and imports from Bangladesh at US\$462 million. The trade is set to go at \$10 billion by 2018 through ports only.
- The economic success of Bangladesh is drawing attention from a range of countries in East Asia, including China, Japan, South Korea, and Singapore.

The US, which traditionally focused on India and Pakistan, has woken up to the possibilities in Bangladesh.

North east and Bangladesh

- Bangladesh's economy is now one-and-a-half times as large as that of West Bengal; better integration between the two would provide a huge boost for eastern India.
- Also, connectivity between India's landlocked Northeast and Bangladesh would provide a boost to the development of north-eastern states. Delhi and Dhaka are eager to promote greater cooperation, but there has been little political enthusiasm in Kolkata.

Blue economy

- Both countries are looking at strengthening economic cooperation through joint investments and cooperation under the 'Blue Economy' programme.
- The programme entails synergized efforts of littoral states in the exploration of hydrocarbons, marine resources, deep-sea fishing, preservation of marine ecology and disaster management.
- The industry in India needs to look for opportunities for collaboration in defence, such as in military hardware, space technology, technical assistance, exchange of experience, and development of sea infrastructure.

Challenges ahead

- Despite the friendship remaining solid, the border has been sensitive. At least 25 Bangladeshis were killed in the first six months of this year along the border by Indian forces, according to a rights watchdog.
- The Teesta water dispute between West Bengal and Bangladesh remains unresolved.
- The Citizenship (Amendment) Act and the proposed National Register of Citizens, which Ms Hasina called "unnecessary", have created a negative impression about India.
- China is making deep inroads into Bangladesh by ramping up infrastructure investments and expanding economic cooperation. Bangladesh is overwhelmingly dependent on China for military hardware.
- Since 2010, India approved three Lines of Credit to Bangladesh of \$7.362 billion to finance development projects. But, just \$442 million have been disbursed until December 2018.

Conclusion

It is imperative for India to bolster ties with this all-weather friend, and there may not be a better time to do so than when Bangladesh is to celebrate the golden jubilee of its independence. Initiatives like maitri setu reaffirms strategic importance of Bangladesh. New Delhi should take a broader view of the changing scenario and growing competition in South Asia, and reach out to Dhaka with an open mind.

7. Examine the issue of marine pollution with special focus on plastics. How does plastic waste threaten the oceans? Discuss.

Approach- Candidate can define the marine pollution and focussing on the role of plastics in causing the same. With the help of data and citing important conventions in this regard, a way forward can be given to tackle this menace.

Introduction

Marine pollution is a combination of chemicals and trash, most of which comes from land sources and is washed or blown into the ocean. This pollution results in damage to the environment, to the health of all organisms, and to economic structures worldwide.

Body

Marine pollution and plastics

- Over 300 million tons of plastic are produced every year for use in a wide variety of applications.
- At least 8 million tons of plastic end up in our oceans every year, and make up 80% of all marine debris from surface waters to deep-sea sediments. Marine species ingest or are entangled by plastic debris, which causes severe injuries and deaths.
- Floating plastic debris are currently the most abundant items of marine litter. Plastic has been detected on shorelines of all the continents, with more plastic materials found near popular tourist destinations and densely populated areas.

How does plastic threaten the oceans?

- The most visible and disturbing impacts of marine plastics are the ingestion, suffocation and entanglement of hundreds of marine species. Marine wildlife such as seabirds, whales, fishes and turtles, mistake plastic waste for prey, and most die of starvation as their stomachs are filled with plastic debris. They also suffer from lacerations, infections, reduced ability to swim, and internal injuries.
- Invisible plastic has been identified in tap water, beer, salt and are present in all samples collected in the world's oceans, including the Arctic. Several chemicals used in the production of plastic materials are known to be carcinogenic and to interfere with the body's endocrine system, causing developmental, reproductive, neurological, and immune disorders in both humans and wildlife.
- Toxic contaminants also accumulate on the surface of plastic materials as a result of prolonged exposure to seawater. When marine organisms ingest plastic debris, these contaminants enter their digestive systems, and overtime accumulate in the food web. The transfer of contaminants between

marine species and humans through consumption of seafood has been identified as a health hazard, but has not yet been adequately researched.

- Plastic, which is a petroleum product, also contributes to global warming. If plastic waste is incinerated, it releases carbon dioxide into the atmosphere, thereby increasing carbon emissions.

What can be done?

- Recycling and reuse of plastic materials are the most effective actions available to reduce the environmental impacts of open landfills and open-air burning that are often practiced to manage domestic waste.
- Governments, research institutions and industries also need to work collaboratively redesigning products, and rethink their usage and disposal, in order to reduce microplastics waste from pellets, synthetic textiles and tyres. This will require solutions which go beyond waste management, to consider the whole lifecycle of plastic products, from product design to infrastructure and household use.
- Legal efforts like 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (or the London Convention), the 1996 Protocol to the London Convention (the London Protocol), and the 1978 Protocol to the International Convention for the Prevention of Pollution from Ships (MARPOL) have been made but there is little compliance due to limited financial resources to enforce them.
- The United Nations Environment Program (UNEP) considers plastic marine debris and its ability to transport harmful substances as one of the main emerging issues affecting the environment. At the 2015 G7 summit in Bavaria, Germany, the risks of microplastics were acknowledged in the Leaders' Declaration.

Conclusion

The world's oceans – their temperature, chemistry, currents and life - drive global systems that make the Earth habitable for humankind. Over three billion people depend on marine and coastal biodiversity for their livelihoods. We must treat plastic pollution as serious threat to humanity, ocean health must be treated as a global issue and all nations should act in concert to implement Sustainable Development Goal: 14 i.e. To conserve and sustainably use the oceans, seas and marine resources for sustainable development.

8. How does mining affect the local ecology? Illustrate. Discuss various sustainable methods of mining.

Approach

The candidate needs to illustrate upon how mining affects the local ecology in the first part of the answer while in the second part, discussing various sustainable methods of mining is the demand.

Introduction

Mining is considered as one of the necessary evils of the modern world, which provides the materials required to sustain quality of life. While improving the quality of life and giving an impetus to economic development, it has also brought in its wake, a notable impact on the environment as well as socio-economic conditions of local people.

Body

Mining is the extraction of valuable minerals or other geological materials from the earth, from an ore body, vein or seam. Developing regions with large mineral deposits confront a challenge in striking the right balance between exploiting the mineral resources for economic prosperity and safeguarding environmental stability. In this regard, effects of mining on the local ecology include –

- By nature, mining involves the production of large quantities of waste, in some cases contributing significantly to a nation's total waste output. The amount of waste produced depends on the type of mineral extracted, as well as the size of the mine.
- Erosion from waste rock piles or runoff after heavy rainfall often increases the sediment load of nearby water bodies. In addition, mining may modify stream morphology by disrupting a channel, diverting stream flows, and changing the slope or bank stability of a stream channel which can reduce water quality.
- Acid drainage is one of the most serious environmental impacts associated with mining. Acidic water may subsequently leach other metals in the rock, resulting in the contamination of surface and groundwater.
- The release of metals into the environment due to mining has its ill effects. While small amounts of heavy metals are considered essential for the survival of many organisms, large quantities are toxic.
- Habitat fragmentation occurs when large areas of land are broken up into smaller and smaller patches, making dispersal by native species from one patch to another difficult or impossible, and cutting off migratory routes.
- The most obvious impact to biodiversity from mining is the removal of vegetation, which in turn alters the availability of food and shelter for

wildlife. At a broader scale, mining may impact biodiversity by changing species composition and structure.

India had a vision to incorporate sustainability in this sector at least almost a decade ago, even before the 2015 United Nations Sustainable Development Goals (SDGs). Sustainable mining activities are integral to many of the SDGs. Here, various sustainable methods of mining are –

- **Reduce resources inputs for effective mining practices:** Becoming more environmentally sustainable is to reduce the input of the mine. By diverting surface water and pumping groundwater, mines can reduce both the quantity and quality of water available downstream.
- **Improving the efficiency of mining processes:** Companies can improve its efficiency where its lacking in terms of sustainability and green mining initiatives, improving the efficiency of this process can help trim down environmental impact.
- **Reusing Mining Waste:** Mining naturally produces significant amounts of waste — such as tailings, rocks and wastewater. In many cases, businesses leave waste behind when mining operations cease. But for almost every category of mining waste, there are at least one or two ways to reuse that waste on- or off-site.
- **Eco-friendly Equipment:** Battery-driven mining equipment is often powerful enough to replace diesel-driven options. Replacing diesel engines with electric engines where possible can significantly reduce the amount of CO₂ produced by mining operations.
- **Rehabilitating Mining Sites:** Many former mine sites are left unproductive, unusable by landowners and, in some cases, almost entirely inhospitable to plant and animal life. However, this damage isn't guaranteed to be permanent. Companies can use many land rehabilitation techniques to make mined land productive again or speed up the land's natural recovery process.

The National Mineral Policy 2019 emphasised that environmental, economic and social considerations must be taken into account as early as possible in the decision-making process so that mining is financially viable, socially responsible, environmentally, technically and scientifically sound, uses mineral resources optimally and ensures sustainable post-closure land uses.

Conclusion

Despite recent strides and new technology, the mining industry remains unsustainable in many areas. Not all of the technologies are economical yet. However, the mining industry as a whole does seem to be moving in the direction of sustainability where future seems promising.

9. Discuss the key principles of environmental impact assessment (EIA)? Is it impractical to adhere to these principles in real life? Critically examine.

Approach:

Candidates are expected to write about Environment impact assessment, also critically examine whether it is impractical to adhere to these principles in real life.

Introduction

UNEP defines Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

Body

Importance of principles of the EIA:

- EIA links environment with development for environmentally safe and sustainable development. EIA provides a cost effective method to eliminate or minimize the adverse impact of developmental projects.
- EIA enables the decision makers to analyse the effect of developmental activities on the environment well before the developmental project is implemented. EIA encourages the adaptation of mitigation strategies in the developmental plan.
- EIA makes sure that the developmental plan is environmentally sound and within the limits of the capacity of assimilation and regeneration of the ecosystem.
- Positive and negative, reversible and irreversible and temporary and permanent impacts are predicted which presupposes a good understanding of the project by the assessment agency.
- Environment Impact Assessment Notification of 2006 has decentralized the environmental clearance projects by categorizing the developmental projects in two categories, i.e., Category A (national level appraisal) and Category B (state level appraisal).

Difficulty and shortcomings in adherence to the principles in reality:

- Lack of awareness among the local people about the process of EIA, its significance for them, their own rights and responsibilities. Most of the time EIA reports are unavailable in local languages, thus local people are unable to decipher the reports, and are misled by the proponents.
- It has been found that the team formed for conducting EIA studies is lacking the expertise in various fields such as environmentalists, wildlife experts, Anthropologists and Social Scientists.

- The Draft Environmental Impact Assessment Notification 2020 has inverted the logic of 'precautionary principle' which forms the bedrock of India's environmental outlook. It seeks to create a permanent setup to regularise industrial processes that have evaded environmental clearance and curtail public hearings for many industries.
- The new notification comes in the wake of recent attempts to dilute environmental safeguards and follows from a tradition to widen the escape route for violators or environmental regulations.
- Lack of Credibility: There are so many cases of fraudulent EIA studies where erroneous data has been used, same facts used for two totally different places etc. Often, and more so for strategic industries such as nuclear energy projects, the EMPs are kept confidential for political and administrative reasons.
- Public hearing: Public comments are not considered at an early stage, which often leads to conflict at a later stage of project clearance. A number of projects with significant environmental and social impacts have been excluded from the mandatory public hearing process. The data collectors do not pay respect to the indigenous knowledge of local people.
- Non transparency: Details regarding the effectiveness and implementation of mitigation measures are often not provided. Emergency preparedness plans are not discussed in sufficient details and the information not disseminated to the communities.
- Applicability: There are several projects with significant environmental impacts that are exempted from the notification either because they are not listed in schedule I, or their investments are less than what is provided for in the notification.

Wayforward:

- Independent EIA Authority, Sector wide EIAs needed and Creation of a centralized baseline data bank.
- Dissemination of all information related to projects from notification to clearance to local communities and the general public.
- The present executive committees should be replaced by expert people from various stakeholder groups, who are reputed in environmental and other relevant fields.

Conclusion

An EIA should not be used just as a means for obtaining an environmental clearance; rather, project proponents should use it as a management tool to assess the soundness of a project plan. The focus of EIA needs to shift from utilisation and exploitation of natural resources to conservation of natural resources.

10. Share your views on the suitability and sustainability of river interlinking project for addressing the issue of water scarcity and floods.

Approach:

The student is expected to write about the inter-linking river project of the country, give a brief account of it. Then the student should write about the need of it and the sustainability of the projects over the course of time.

Introduction:

Inter Linking of Rivers refers to inter-basin water transfers between 2 or more rivers through human interventions on natural systems.

India's National Water Development Agency (NWDA) has suggested the interlinking of rivers of the country. The interlinking of rivers has two components: the Himalayan and the Peninsular. All interlinking schemes are aimed at transferring of water from one river system to another or by lifting across natural basins. The project will build 30 links and close to 3000 storages to connect 37 Himalayan and Peninsular rivers to form a gigantic South Asian water grid.

Body:

Large variation in rainfall and subsequent availability of water resources in space and time. Because of this variability of available water, floods and drought coexist in our country in same time and space. (Kerala, T.N and South Karnataka is facing drought while Rajasthan, Gujarat, Assam reeling under floods)

- It will most likely lead to Improved and expanded irrigation i.e., the project claims to provide additional irrigation to 35 million hectares in the water-scarce western and peninsular regions.
- The river interlinking project claims to generate total power of 34,000 MW (34 GW). It will lead to Ground water Recharging.
- The inter-link would create a path for aquatic ecosystems to migrate from one river to another, which in turn may support the livelihoods of people who rely on fishery as their income. It will contribute to flood and drought hazard mitigation for India Any multipurpose storage reservoirs in upstream countries, such as Nepal and Bhutan, would facilitate energy generation and other benefits.
- It also appears to promote national integration and a fair sharing of the country's natural water wealth.
- It will unify the country by involving every Panchayat as a share holder and implementing agency.
- Provide for enhancing the security of the country by an additional waterline of defense.
- Provide employment avenues for more than 10 lakh people for the next decade. It will most likely eradicate the flooding problems which recur in the northeast and the north every year.

- Solve the water crisis situation by providing alternative, perennial water resources.
- The large canals linking the rivers are also expected to facilitate inland navigation too.
- It aims at increasing food production from about 200mn tones a year to 500mn tones.
- It will most likely boost the annual average income of farmers, from the present \$40 per acre of land to over \$500

River Linking Project involves multifaceted issues and challenges related to environmental, economic, ecological, legal, political and social costs. It has potential for disastrous and irreversible adverse after-effects which has been comprehensively discussed below:

- **Ecological Costs:** Water scientists and Environmentalists have remarked that the water flowing into the sea is not waste. It is a crucial link in the water cycle. With the link broken, the ecological balance of land and oceans, freshwater and sea water, also gets disrupted. It is feared that diversion of water from the Brahmaputra and the Ganges, which provide 85% of the country's fresh water flow in the dry season, would result into an ecological disaster.
- **Economic Costs:** As this project is of massive estimated cost, a long term planning and a sound financial simulation are required to meet the standard for such proposals. The huge expenditure of the project and the maintenance costs associated with the dams, canals, tunnels, and captive electric power generation will involve huge financial burdens. This may generate fiscal problems that are difficult to handle. This certainly requires financial assistance from the private sector as well as global capital agencies. Mobilization of global capital may ultimately entail the risk of destroying social welfare measures.
- **Environmental costs:** It will result in massive diversion of forest areas and submergence of land leading to deforestation and soil- erosion. (For example The Ken-Betwa link project puts in danger over 4,100 hectares of forest land or 8% of the Panna National Park). There will be destruction of rivers, aquatic and terrestrial biodiversity, fisheries and groundwater recharge. Possible downstream impacts, salinity ingress, pollution concentration, and increased methane emission from reservoirs are other adverse repercussions. Scientists are also of the view that river diversion may bring significant changes in the physical and chemical compositions of the sediment load, river morphology and the shape of the delta formed at the river basin. It could most likely create trigger points of natural disasters like landslides, earthquakes etc. as seen in case of Koyna dam and Tehri dam.
- **Legal costs:** Domestic and regional geo-politics play a pivotal role on the discussions on ILR. As of now, there is no mechanism as of now to deal with matters concerning inter-basin transfers. There are also important institutional and legal issues to be sorted out. Each of the 30 schemes of the ILR is supposed to get through several statutory, legal and procedural steps.
- **Social Costs:** Reconstruction and rehabilitation due to displacement is not an easy task as seen before. The construction of reservoirs and river linking canals in the peninsular component alone expect to displace more than 5, 83,000 people

and submerge large areas of forest, agriculture and non-agriculture land. It is likely to create social unrest/psychological damage and cultural alienation due to forced resettlement of local indigenous tribal community.

- Political Implications: Water being a state subject, the ILR plan further complicates existing water sharing and management problems between the riparian states. Some of the ILR schemes have international implications, which may create strained relationship with neighbouring countries like Bhutan, Nepal and Bangladesh.

Conclusion:

NRLP has its fair share of positives and negatives. Though there are enough apprehensions over the project but they are not backed by any comprehensive scientific evidence to it. Inter basin water transfer is not a new concept.

Large direct benefits of irrigation, water supply and hydropower and indirect benefits navigation, tourism, employment generation etc can be accrued in ILR program.

Formation of River Basin Authority for coordinated action and subsequent building up of consensus among concerned States is prima facie needed. Legal provisions for implementation of ILR related to rehabilitation and appropriate afforestation through CAMPA is to be concurrently addressed.

It is essential that needed environmental safeguards such as comprehensive EIA and SIA are properly implemented in a coordinated manner by various agencies. Therefore, strengthening and expansion of cooperative efforts among the co-basin states and countries will foster co-riparian relationships.

India's river linking project shows and promises a great concern for water conservation and optimum use of available water resources. Undoubtedly, it is the need of the hour to have a water mission like as IRL, which will enable availability of water to the fields, villages, towns and industries throughout the year post a comprehensive scientific assessment.

11. What are the regions in India that suffer from the challenge of desertification. Explain the causative factors that lead to desertification.

Approach:

Candidates are expected to write about desertification and also highlight the regions that suffers the challenge of desertification in India. Also explain the causative factors that lead to the desertification.

Introduction

As per UNCCD Desertification is not the natural expansion of existing deserts but the degradation of land in arid, semi-arid, and dry sub-humid areas. It is a gradual process of soil productivity loss and the thinning out of the vegetative cover because of human activities and climatic variations such as prolonged droughts and floods.

Body

Regions suffering from desertification in India:

- According to Desertification and Land Degradation of Selected Districts of India, an atlas published by the ISRO SAC, some 96.40 million ha, or about 30 per cent of the country's total area, is undergoing degradation.
- In terms of India's total geographical area, the states of Rajasthan, Gujarat, Maharashtra, Jammu and Kashmir, and Karnataka have the highest area of lands undergoing degradation/desertification, amounting to 18.4% (out of India's total 29.3%) while all the other states each had less than 2% of degraded lands.
- But when considering the area within the states, Jharkhand followed by Rajasthan, Delhi, Gujarat, and Goa, had the highest area of degraded lands, representing more than 50% of their area. In comparison, the land area undergoing degradation/desertification in Kerala, Assam, Mizoram, Haryana, Bihar, Uttar Pradesh, Punjab, and Arunachal Pradesh was less than 10%.

Causative factors for desertification:

- **Soil Erosion:** It is responsible for 10.98 percentage of desertification. Soil Erosion is the loss of soil cover mainly due to rainfall and surface runoff water. Water erosion is observed in both hot and cold desert areas, across various land covers and with varying severity levels.
- **Vegetation Degradation:** It is responsible for 8.91 percentage. Vegetation degradation is observed mainly as deforestation / forest-blanks / shifting cultivation and degradation in grazing/grassland as well as in scrubland. Destruction of vegetation, most often by humans, accelerates desertification.
- **Salinity:** It occurs mostly in cultivated lands, especially in the irrigated areas. Soil salinity refers to the water dissolvable salt present in the soil. Salinity can develop naturally, or human-induced.
- **Cultivation of sugarcane:** Sugarcane, which is only grown in 4% of the total cultivable land, guzzles 80% of the water resources. As a result, a slight

change in the meteorological cycle is enough to cause a full-blown water crisis.

- Government neglect: For example Under Maharashtra Irrigation Act of 1976, the government can notify people in the command area not to go in for water-intensive crops like sugarcane in the case of acute water scarcity. But there have been no efforts from the government side especially in Marathwada region.
- Unplanned urbanisation: Economic development has led to expansion of urban and industrial land. Much of the present urban and industrial development has taken place on agricultural land. The expansion of cities has resulted in the encroachment of forest areas and wetlands. For example, rapid urbanisation triggered by a population increase in coastal areas has caused coastal land degradation.
- Climate Change: Climate change plays a huge role in desertification. As the days get warmer and periods of drought become more frequent, desertification becomes more and more eminent. Further rise in incidents like forest fires are destroying forests and leading to rise in desertification.

Way forward:

- Afforestation: Forest degradation accounts for the major share of land degradation costs of India highlighting the need to prevent forest degradation. Further, strategy to reduce forest dependence for fuelwood, fodder and non-timber forest products should be made. Efforts must be made for afforestation.
- Preventing overgrazing: Farmers should be discouraged from overgrazing activities. They must be made aware of the harm of overgrazing to land productivity.
- Sustainable agriculture: Climate resistant crops need to be developed and used. Efforts must be made to make farmers aware of overuse of chemical fertilisers. Subsidy may be removed for the same and replaced by Cash transfer.

Conclusion

Ending desertification is the best chance the world has to stabilize the effects of climate change, save wildlife species and protect our well-being. Protecting the forest is our mutual responsibility, which should be carried out by people and governments worldwide.

12. Comment upon the philosophical basis and objectives of left wing extremism?

Approach

Candidates are expected to write about Left wing extremism and comment on their objectives and philosophical basis.

Introduction

In the review meeting on LWE, the Union Home Minister has termed Left-Wing Extremism (LWE) as one of the major internal security threats faced by the nation. However, events of Left Wing Extremism (LWE) violence came down from 2258 in 2009 to 833 in 2018.

Body

LWE Origins –

- Tebhaga movement it was the first communist movement which started in West Bengal in 1946. Telangana movement which was led by the people of Telangana in the period of 1946-51 against the atrocities of the Nizam rule also acquired radical dimensions as it progressed.
- The origins of the LWE can be traced back to 1967 in the three areas of Naxalbari (from which the term Naxal originates), Phansidewa and Khoribari in West Bengal's Darjeeling District.
- The initial uprising was led by Charu Majumdar, Kanu Sanyal and Jangal Santhal, who were members of the Communist Party of India (Marxist). The initial uprising was in the form of a peasant revolt. Two years later in 1969, the Communist Party of India (Marxist–Leninist) was formed.
- Although originated in West Bengal, the movement spread to the less-developed rural regions of southern and eastern India, in Telangana, Andhra Pradesh, Odisha and Chhattisgarh.
- The Maoist Communist Centre (MCC) was formed in 1975. This group merged with the People's War Group in 2004, to form the CPI (Maoist).

Philosophical basis of Left wing extremism –

- Naxalism in India, like any other leftist movement around the globe draws its ideological basis from the Russian revolution wherein Lenin successfully fought against the Czar through a combination of peasant movement and an armed struggle. The prime intent was to bestow power in the hands of the exploited and marginalized and enforce societal control over governance and nation building.
- After the success of the Lenin-led revolution in Russia, the intellectual class in many countries started thinking of ushering in a change in their respective nations. Prominent amongst them were Fidel Castro and Mao Zedong. In

China, Mao Zedong used this philosophy successfully which led to the origin of 'Maoism'. Maoism is a doctrine that teaches to capture State power through a combination of armed insurgency, mass mobilisation and strategic alliances. Mao called this process, the 'Protracted People's War'. 'Political power grows out of the barrel of a gun' is the key slogan of the Maoists.

- Naxalites are far-left radical communists who derive their political ideology from the teachings of Mao Zedong.

Objectives of the LWE –

- The objective of the Naxalites is to wage an armed revolution, modeled on the lines of the Chinese Revolution, which they call New Democratic Revolution (NDR), and usher in their own form of government.
- The Naxalites state their main political purpose as establishing an alternative state structure in India by creating a "red corridor" in Naxalite-affected states, stretching from the border of Nepal to central India to Karnataka in the south through violent struggle.
- The LWE organisations, in pursuit of their stated goal of overthrowing the government, resort to armed violence against anyone they perceive to be their enemy, and this includes innocent civilians also.
- In many instances, they carry out high-profile murders and kidnappings to instil fear in their opponents and civilians.
- In many cases, they get the support of the tribal population in an area since they are seen as deliverers, in a situation where the authorities have failed to provide the basic amenities.

Way forward –

- The D Bandopadhyay Committee (2006) highlighted the lack of governance, economic, socio-political and cultural discrimination against the tribals as the chief reason for the spread of Naxalism. The Committee recommended tribal-friendly land acquisition and rehabilitation as a means to counter this issue.
- Operation SAMADHAN The policy was initiated in 2015 as a multidimensional approach to tackle LWE.
- States also need to adopt a focused time-bound approach to completely eliminate LWE groups and ensure all-round development of the affected regions.

Conclusion

Naxalism is an internal security matter and is not just a law and order problem also – it has grown into a big headache for both people and government. But its roots lie in deep discontent that apathy of government bred towards poor tribes of these regions. Only through addressing those problems it is possible to stop the further spread of left wing extremism. Whenever naxals indulge in violence, and obstruct development works being implemented, government must deal with sternly but as home ministry warned officials, without violating standard operation methods.

13. Discuss the strategy adopted by the government to address the security threats emanating from external state and non-state actors.

Approach

Since the question is asking you to discuss hence 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

External vulnerabilities that pose challenges to India's national security can be by either by state or non-state actors. 'State actor' is used in the context where one government supports an actor in the performance of an act or acts of terrorism against the other often deemed as a state sponsor. Organizations and individuals not connected with, directed by, or funded through the government are non-state actors.

Body

THE STRATEGY ADOPTED BY THE GOVERNMENT TO ADDRESS THE SECURITY THREATS EMANATING FROM EXTERNAL STATE AND NON-STATE ACTORS –

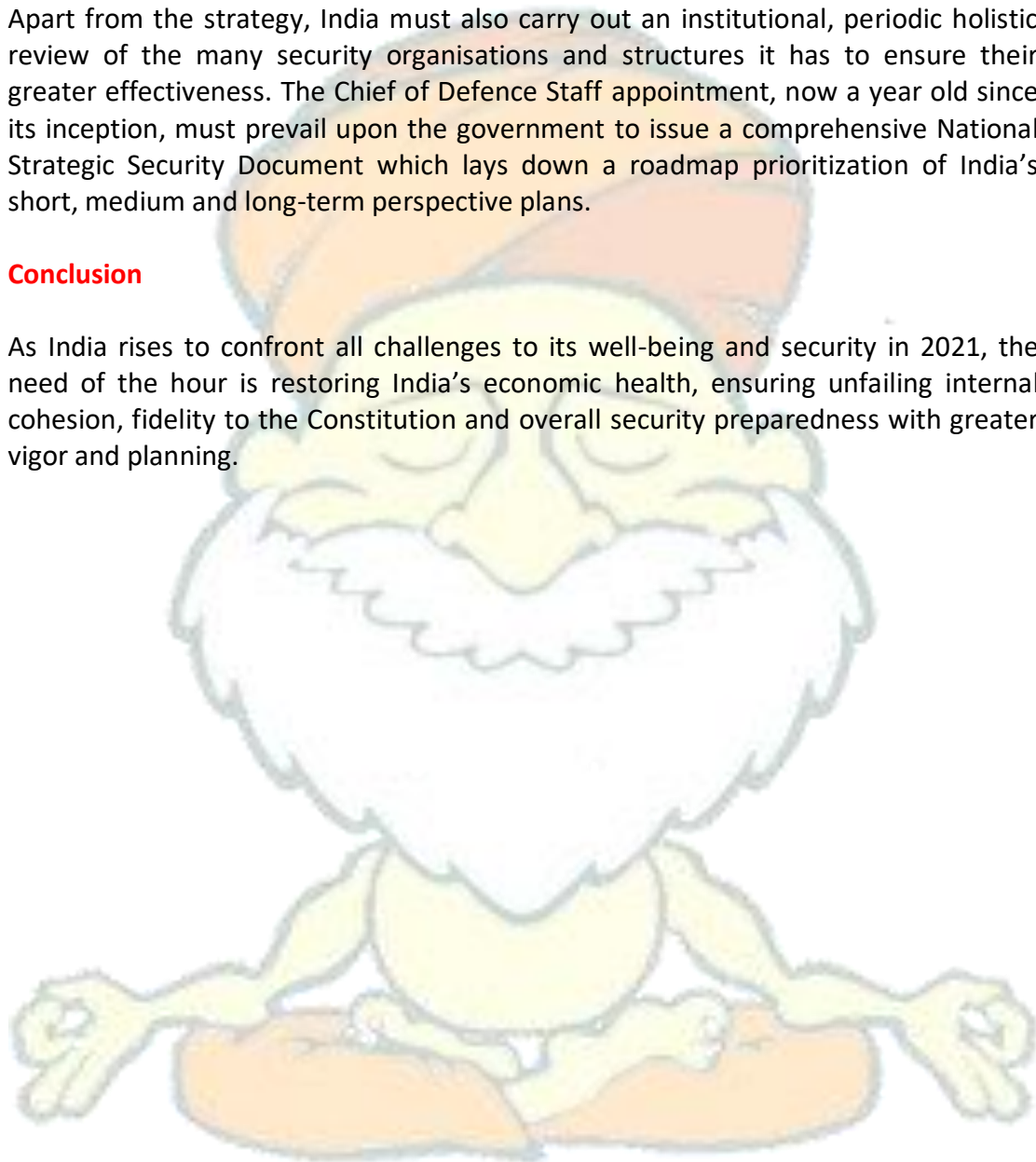
- A lesson from our ancient history, oft-forgotten, is the imperative of internal unity in the country. The government believe that external challenges can be handled adequately when the nation retains internal cohesiveness and that remain the part of strategy.
- That most of India's internal security challenges have an external dimension to it is well known, government is trying to factor in the linkages between the two to shape our response.
- In dealing with the situation in J&K, in Naxalism affected areas and the Northeast, the government is using the correct amalgam between sound security measures and exhibiting compassion cum sensitivity to the local populace.
- In a democracy, legitimate protests are normal and thus governments at the Centre and states are trying not to get unduly perturbed over these and deal with dissent sympathetically and not treat those who differ from the establishment's views as anti-nationals.
- The government is trying to make the DRDO and the many ordnance factories it has under its ambit far more accountable and effective.
- India has a vibrant private sector too with some having a reasonably good record in defence production. The government is giving the private sector a level playing field and an assurance of purchasing their output to give a fillip to indigenous defence production.

- In addition, the government is trying to ensure that as it pays huge amounts to foreign military entrepreneurs while importing state-of-the-art equipment, it insists upon transfer of critical technologies, and ultimately production of the same platforms, weapons, ammunition, spares etc., within the country. With many security challenges confronting the nation, there is no alternative to indigenous defence production.

Apart from the strategy, India must also carry out an institutional, periodic holistic review of the many security organisations and structures it has to ensure their greater effectiveness. The Chief of Defence Staff appointment, now a year old since its inception, must prevail upon the government to issue a comprehensive National Strategic Security Document which lays down a roadmap prioritization of India's short, medium and long-term perspective plans.

Conclusion

As India rises to confront all challenges to its well-being and security in 2021, the need of the hour is restoring India's economic health, ensuring unfailing internal cohesion, fidelity to the Constitution and overall security preparedness with greater vigor and planning.



14. Can lack of development be attributed as the most significant contributor towards the spread of left wing extremism in India? Critically comment.

Approach

As the directive is critically comment students are expected to write both the aspects of the lack of development as the significant factor towards the spread of left wing extremism in India.

Introduction

Left-wing extremism, also known by various other names such as Naxalism and Maoism, is a form of armed insurgency against the State motivated by leftist ideologies. Left-wing extremists are also known as Maoists globally and as Naxalites in India. There are several left-wing extremist organizations in the country operating in many areas. They reject parliamentary democracy and are aiming at waging an armed revolution against the government. They follow extreme violence and also harm innocent civilians in many cases. Some groups also engage in parliamentary politics while at the same time, maintain underground cadres. Examples of such groups: Communist Party of India (Marxist-Leninist) Liberation and the Communist Party of India (Marxist-Leninist) Janashakti.

Body

Lack of development and spread of left wing extremism in India –

- Naxalbari, a village near Siliguri North West Bengal, became infamous in 1967 as it revived left wing extremism in India. Charu Mazumdar was active leader of the area and was mobilizing peasants against state for an armed conflict. On the other hand there were repetitive incidences of Class conflicts between peasants and zamindars. One such conflict escalated and zamindar was expelled from his land. After this police came to his rescue and was surrounded by about thousand peasants armed with bows, arrows, lathis etc. this became the tipping point for the rise of naxalite movement in India.
- Heavy state response kept violent incidents under control in 1970's but it got push in 1980's. This time it was from Andhra Pradesh. Actually, in 1967 itself movement also started in Srikakulam, Andhra Pradesh. Here revolutionaries tried to mobilize tribals into armed militias called 'dalams', by inciting them against landlords, money lenders and government.
- They resorted to 'annihilation of class enemy' under which people those represented state i.e. government servants, Forest officials and other oppressive characters such as money lenders and landlords, were to be identified and killed.
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tried to mobilize tribals into armed militias called 'dalams', by inciting them against landlords, money lenders and government. They resorted to 'annihilation of class enemy' under which people those represented state i.e. government servants, Forest officials and other oppressive characters such as money lenders and landlords, were to be identified and killed.

- Naxalism is spread in the most backward areas of the country this backwardness becomes breeding ground to motivate and recruit the people into their own folds exploitation by money lenders and faulty land reforms amplified the backwardness and hence became the significant reasons for the spread of naxalism in India.

However lack of development is not the only reason for the spread of Naxalism in India, there are other reasons which lead to the spread which are as follows –

- Forest mismanagement was one of the main causes of the spread of Naxalism. It originated during the time of British administration when new laws were passed to ensure the monopolization of the forest resources. Following the globalization in the 1990s, the situation worsened when the government increased the exploitation of the forest resources. This led the traditional forest dwellers to fight for their aspirations against the government through violence.
- Haphazard tribal policy implementation, marginalization, and displacement of the tribal communities worsened the situation of Naxalism.
- The increase in the interregional and intraregional differences and inequalities led to people choosing Naxalism. Naxal-groups mostly consist of the poor and the deprived like the anglers, small farmers, daily labourers, etc. The government policies have failed to address this issue.
- The poor implementation of the land reforms has not yielded the necessary results. India's agrarian set up is characterised by the absence of proper surveys and other details. Due to this reason, it has greatly damaged the rural economy and anti-government sentiments were high among those who were deprived and exploited by the local landowners.
- Forest cover in India is the main area of operation for these groups. The government is facing difficulties while dealing with the insurgents due to the lack of accessibility to these areas.
- The unemployed youth in India is one of the major supporters of the Naxalism movement. This group mostly consists of medical and engineering graduates. The universities have become one of the major breeding grounds for radical ideology.

Conclusion

The concerted effort from both the Centre and Naxal-affected states is a rare example of cooperative federalism. Comprehensive COIN strategy, encompassing both the population-centric and enemy-centric approaches has significantly reduced the Naxal footprint in many of the militant groups in the region. Yet, the Naxalites

still remain a formidable force that can nevertheless be considered a threat to India's national security. However, unlike in the 2000s, the Indian government is well prepared in addressing this issue through a comprehensive strategy that is already in place



15. 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 back 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 region.

16. Why is fake news considered a serious internal security threat? Analyse.

Approach

Since the question is asking you to analyse, you are expected to break an issue into constituent parts and explain how these relate to one other and present as one summary.

Introduction

The word 'Fake News'- Word of the Year, 2017 by Collins Dictionary got popularised in the 2016 US Presidential election and Brexit. It is much debated in communication fields and social sciences as it has the potential to polarise public opinion, to incite violence and extremism.

Body

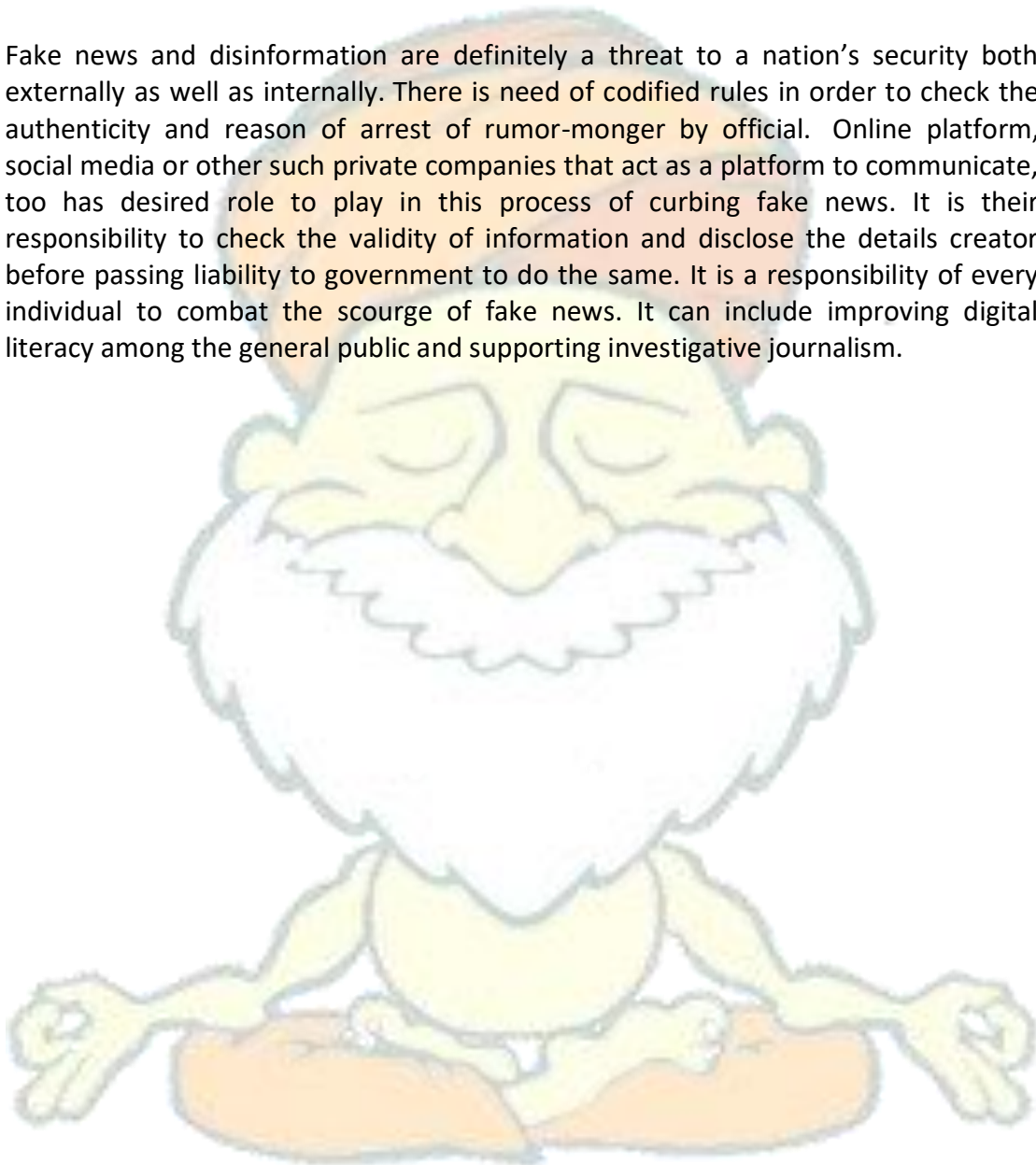
WHY FAKE NEWS IS CONSIDERED A SERIOUS INTERNAL SECURITY THREAT?

- Fake news has the potential to polarise public opinion, to promote violent extremism and hate speech and, ultimately, to undermine democracies and reduce trust in the democratic processes.
- The countries which are already suffering from ethnic tensions, misinformation can exasperate a lot of tensions and can also generate violence.
- Rumours spread through fake news can create a lot of social turmoil in a country or among the countries.
- In perhaps, the well-known case, Myanmar during the Rohingya crises Facebook was used as a tool or weapon by the people to incite violence against the Rohingya Muslims.
- Buddhists were influenced by the rumors which led them to target Muslims. To retaliate the harm caused on Muslim in Myanmar, Indian Muslim attack Bodh Gaya temple of India.
- In India, rumors spread by Whatsapp led to many communal riots. Riot in Muzaffarnagar in 2013 where around 50 people were killed is the example of one such case out of many which takes place every year.
- Jammu & Kashmir witnessed internet shutdowns quite in high frequency after any military operation takes place or after any act related to the state, which is of sensitive nature, is passed by the legislature in order to restrict the circulation of fake news and misinformation which can make situation worst.
- Across the country, there is a rise in numbers of mob attacks fueled by rumors spread by using social media handles like Whatsapp, Facebook, twitter etc.

- Fake news, state-funded disinformation and propaganda directly challenge the question of national security and the democratic set-up of any nation. The whole system and set-up have turned into more complicated and complex state, and the challenges that it present cannot be met by mere simple solutions; they require open, deep and critical analysis.

Conclusion

Fake news and disinformation are definitely a threat to a nation's security both externally as well as internally. There is need of codified rules in order to check the authenticity and reason of arrest of rumor-monger by official. Online platform, social media or other such private companies that act as a platform to communicate, too has desired role to play in this process of curbing fake news. It is their responsibility to check the validity of information and disclose the details creator before passing liability to government to do the same. It is a responsibility of every individual to combat the scourge of fake news. It can include improving digital literacy among the general public and supporting investigative journalism.



17. What are the most common international destinations used for money laundering? What measures have been taken to control it?

Approach

The candidate needs to elaborate upon the most common international destinations used for money laundering in the first part of the answer while in the second part, one needs to show some measures taken to control it.

Introduction

Money laundering is the processing of criminal proceeds to disguise their illegal origin. It is the concealing or disguising identity of illegally obtained proceeds so that they appear to have originated from legitimate sources. It is frequently a component of other, much more serious, crimes such as drug trafficking, robbery or extortion. According to the IMF, global Money Laundering is estimated between 2 to 5% of World GDP.

Body

- As money laundering is a consequence of almost all profit generating crime, it can occur practically anywhere in the world. Generally, money launderers tend to seek out countries or sectors in which there is a low risk of detection due to weak or ineffective anti-money laundering programmes.
- Money laundering activity may also be concentrated geographically according to the stage the laundered funds have reached. At the placement stage, for example, the funds are usually processed relatively close to the under-lying activity.
- With the layering phase, the launderer might choose an offshore financial centre, a large regional business centre, or a world banking centre – any location that provides an adequate financial or business infrastructure.
- Finally, at the integration phase, launderers might choose to invest laundered funds in still other locations if they were generated in unstable economies or locations offering limited investment opportunities.
- Currently, The Financial Action Task Force (FATF) has ‘call for actions’ in Iran and Dem. Rep Korea. These countries are considered very high risk and are not members of any anti-money laundering (AML) organisations, meaning no laws are in place to help combat money laundering.
- According to the Basel anti-money laundering index, the top 10 countries currently facing the greatest risk of money laundering are – Afghanistan (8.16), Haiti (8.15), Myanmar (7.86), Laos (7.82), Mozambique (7.82), Cayman Islands (7.64), Sierra Leone (7.51), Senegal (7.30), Kenya (7.18), and Yemen (7.12).

Steps Taken to Prevent Money Laundering –

- **The Vienna Convention:** It creates an obligation for signatory states to criminalize the laundering of money from drug trafficking.
- **The United Nations office on Drugs and Crime:** It proactively tries to identify and stop Money Laundering.
- **The Financial Action Task Force:** It has been set up by the governments of the G-7 countries at their 1989 Economic Summit, has representatives from around the world. It monitors members' progress in applying measures to counter Money Laundering.
- **India** is a full-fledged member of the FATF and follows the guidelines of the same. Further, Financial Intelligence Unit-IND is an independent body reporting directly to the Economic Intelligence Council (EIC) headed by the Finance Minister.
- **Criminal Law Amendment Ordinance (XXXVIII of 1944):** It covers proceeds of only certain crimes such as corruption, breach of trust and cheating and not all the crimes under the Indian Penal Code.
- **The Smugglers and Foreign Exchange Manipulators (Forfeiture of Property) Act, 1976:** It covers penalty of illegally acquired properties of smugglers and foreign exchange manipulators and for matters connected therewith and incidental thereto.
- **Narcotic Drugs and Psychotropic Substances Act, 1985:** It provides for the penalty of property derived from, or used in illegal traffic in narcotic drugs.
- **Prevention of Money-Laundering Act, 2002 (PMLA):** It forms the core of the legal framework put in place by India to combat Money Laundering. The provisions of this act are applicable to all financial institutions, banks (including RBI), mutual funds, insurance companies, and their financial intermediaries.
- **PMLA (Amendment) Act, 2012:** Adds the concept of 'reporting entity' which would include a banking company, financial institution, intermediary etc. It has provided for provisional attachment and confiscation of property of any person involved in such activities.
- **Enforcement Directorate (ED):** It is a law enforcement agency and economic intelligence agency responsible for enforcing economic laws and fighting economic crime in India.

Conclusion

In addition to creating laws that criminalize the laundering of the proceeds of crime, India must also enact strict compliance programs for the financial industry that make it more difficult to launder money. India must negotiate additional Mutual Legal Assistance Treaties with other countries. MLATs are invaluable to international judicial assistance. If India intends to curb its escalating drug problem, it must take an aggressive stance with respect to money laundering.

18. How does India's complex geography in the border regions aggravate the internal security challenges? Discuss.

Approach

Candidates are expected to write about internal security challenges and how India's unique and complex geography in border regions aggravate the internal security challenges.

Introduction

Border Management is an integral approach towards borders in which along with security enhancement, infrastructure & human development is undertaken. The challenge of coping with long-standing territorial and boundary disputes with China and Pakistan, combined with porous borders along some of the most difficult terrain in the world, has made effective and efficient border management a national priority.

Body

Complex geography in the border region aggravating the internal security challenges-

- Varied terrain, climatic conditions and hostile neighbours make our borders complex and border management an important aspect of our security.
- Managing such an expansive border is a complex task. Challenges related to border security include unsettled maritime boundaries, lack of fully demarcated land borders, and borders based on artificial boundaries. This porosity of borders facilitates various illegal activities such as smuggling, trafficking of humans, drugs and arms and infiltration.
- On Indo Bangladesh border entire stretch consists of plain, riverine, hilly/jungle and with hardly any natural obstacles. The area is heavily populated, and at many stretches the cultivation is carried out till the last inch of the border.
- Density of population in the border areas at some places is approximately 700-800 persons per square km on the Indian side and about 1,000 persons on the Bangladesh side.
- Instead of following natural barriers, it meanders through villages, agricultural lands, and rivers, rendering the border extremely porous with many disputed pockets. Undemarcated stretches, existence of enclaves (chhit-mohols), and adverse possessions had been causing constant friction between the border guarding forces of India and Bangladesh.
- The location of the Indo-Myanmar boundary throws up many challenges for the effective management of the boundary. The rugged terrain makes movement and the overall development of the area difficult. The internal dynamics of the region in terms of the clan loyalties of the tribal people,

inter-tribal clashes, insurgency, and trans border ethnic ties also adversely affect the security of the border areas.

- In a place like Galwan Valley first major factor is acclimatisation since the oxygen supply reduces drastically. Next, the load carrying capacity of individuals reduces drastically. Things move very slowly in the mountains and mobilisation of troops consumes time. Thus, time and place need to be kept on top priority when deciding where the troops have to be stationed and how they have to be mobilised.
- Frost, inhabitable conditions and sub-zero temperature are deadlier than bullets at the world's highest military post-Siachen which is part of a disputed region between India and Pakistan. Several incident where Indian Army personnel died after an avalanche hit their post, brings to fore the rising number of death at the the world's highest battlefield where not a single death has occurred due to a bullet wound since 2003.
- India Pakistan border need patrolling in riverine areas and water-patrol teams have been deployed at the Chenab River, primary reason is the difficult terrain characterised by lofty mountains, several cross-border streams and dense growth of elephant grass.
- The Indian military Border Security Force (BSF) patrols Sir Creek up to midstream using floating border posts, amphibious vehicles, and foot travel by the Creek Crocodile Commandos. The coastal area of Sir Creek is manned by the Indian Coast Guard, and the larger open sea beyond is patrolled by the Indian Navy.

Conclusion

Defence preparedness should be vigorously pursued to insulate us from unpleasant surprises. The vision should be to establish with utmost urgency, stable, viable and peaceful national boundaries, all around, so that India can proceed, unhindered, with the vital tasks of nation-building and socio-economic development.

19. What role do intelligence agencies play in securing the country? Illustrate.

Approach

A simple and straightforward question where in the candidate needs to show role of intelligence agencies in security of the country.

Introduction

Gathering intelligence and information by means of espionage has been a key element to the survival of nations ever since their existence. However, there has been a major change in the way intelligence agencies work ever since the evolution of technology and the unthinkable amount of advances in the way people live their everyday lives.

Body

- The role of intelligence agencies has changed dramatically; Intelligence agencies are not mere data collection and analysis units anymore, they are full-fledged covert armies, called upon to take action when no one else can.
- The Cold War saw the further evolution of intelligence agencies, introduction of “larger foreign policy focus”. The U.S.A saw the U.S.S.R as keeping her administration from a more “comprehensive foreign policy”.
- Intelligence acts as the escutcheon of a nation. However the success of intelligence agencies in protecting the nation is never reported in the media for obvious reasons. It is only their defeats, mistakes and controversies that are reported.
- Striking the balance between allowing intelligence agencies to carry out activities to promote their citizens security and the limitations to these activities is vital. Hence, the role of intelligence in modern warfare is still somewhat obscure.

Further, the role of intelligence agencies in securing the country can be seen from following points –

- **Collection:** as a function of intelligence, appears straightforward, and its necessity is not seriously challenged. Through various means, intelligence agencies collect information about foreign persons, places, events, and activities that is needed by the Government but cannot be obtained through publicly available sources or diplomatic contacts.
- **Analysis:** The analytical function raises similar practical issues. In theory, intelligence analysts take information provided by perhaps all three collection disciplines, combine it with information from publicly available sources, and produce "all source" analysis for the customer. Because the analysis contains information obtained by intelligence sources, it is typically classified.

- Covert Action: are used to influence political, military, or economic conditions or situations abroad, where it is intended that the role of the Government will not be apparent or acknowledged publicly. These might consist of technical and logistical assistance to other governments to deal with problems within their countries, or actions undertaken to disrupt illicit activities that threaten government's interests, e.g. terrorism or narcotics trafficking.
- Counterintelligence: The counterintelligence function involves protecting the country, as well as intelligence agencies, from the activities of foreign intelligence services. The RAW is responsible for coordinating India's counterintelligence activities abroad.
- Further, intelligence also involves support to country's Diplomacy, support to Monitoring of Treaties and Other Agreements, support to Military Operations, Economic Intelligence, etc.

Conclusion

The paradigm shift in the nature of the security challenges facing the country lends urgency to the need for strengthening country's intelligence apparatus. There is a need for comprehensive, not ad hoc and piecemeal, changes where the focus should be on removing the deficiencies within the system, improving coordination between intelligence agencies and ensuring better accountability and oversight.

