TEST CODE : 5 1 3 2 4

IAS - MGP 2022 (C-11) - Sectional Test #6

ForumIAS

GENERAL STUDIES

Name Of Candidate	Shrusti Jain.
Roll No.	1910081719
Date:	16/08/22.

Time Allowed: Three Hours

Maximum Marks: 250

INDEX TABLE

Q. No.	Max. Marks	Marks Obtained
1		
2		
3		
4		
5		
6		
7		
8		
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10		
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Total:	250	

Evaluator's Discretion:

Total Marks:

Evaluator's Discretion: This is the marks awarded at the discretion of the evaluator based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy.

INSTRUCTION

1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet.
2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory.
3. The number of marks carried by a question/part is indicated against it.
4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided.
5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off.

Any specific messages for ForumIAS Mentors/ Evaluators with respect to your copy? Write it here.

1. Kindly pin-point exact problem in my paper so that I can improve, as mains are nearing!
2. How to tackle "GS-3" per se?

For Student Only

Start Time	04:50 pm.	End Time	08:15 pm.
Mode Of Examination:		Online ☑	Offline ☐

For Office Use Only

ECN CODE:	EG:	Evaluation Date:

(1) How to reduce time?
(2) How many examples to write for an answer?
(3) Am I meeting the demand?

Note: You can discuss your evaluated copy with the Mentor. Raise a ticket from your portal to schedule a mentor call or visit the offline centre to meet mentor (all 7 days, Timings – 11 AM to 6 PM). Further if you are unsatisfied with the evaluation, you can seek re-evaluation of the copy.

Parameters	Excellent	Very Good	Good	Average	Poor	Very Poor
Language						
Structure						
Presentation						
Handwriting						
Content						
Attempt						

ADDITIONAL REMARKS

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Q.1) The consequences flowing from genetically modified organisms are debatable, but the advantages justify the risk. Do you agree? Discuss. (10 marks, 150 words)

आनुवांशिक रूप से संशोधित जीवों (GMO) से निकलने वाले परिणाम बहस योग्य हैं, लेकिन इसके फायदे जोखिमों का औचित्य सिद्ध करते हैं। क्या आप सहमत हैं? चर्चा कीजिए। (10 अंक, 150 शब्द)

The recent allowance given by GEAC to import of genetically modified (GM) soya-meal has put into light debate over GM-organisms.

Consequences from GM-organisms (GMO) —

Negative:

(1) Health impact of humans - deteriorate due to zoonotic diseases.
eg: Monkey-pox, covid-19, etc.

(2) As invasive species to native population → threaten biodiversity.

(3) Misuse for other illegal wildlife trade, and

(Don't Write anything in this Area)

organised crimes.

eg: CITES, etc.

Advantages from GMOs:

1. Trade flow from rich to scarce countries.
2. Help in medical research and applications.
   eg: Xeno-transplantation, etc.
3. Conservation of species - on risk on extinction, etc.

My view - Trade is a boon if done according to "Cartegena Protocol on Biosafety" and "EPA, 1986" guidelines.

Thus, need is for need-based ecofriendly - technological use.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.2) How are fuel cell electric vehicle (FCEV) different from battery electric vehicle (BEV)? Highlighting advantages of electric vehicles, suggest measures for accelerating e-mobility adoption in the country. (10 marks, 150 words)

ईंधन सेल इलेक्ट्रिक वाहन (FCEV) बैटरी इलेक्ट्रिक वाहन (BEV) से कैसे भिन्न हैं? इलेक्ट्रिक वाहनों के लाभों पर प्रकाश डालते हुए, देश में ई-मोबिलिटी अपनाने में तेजी लाने के उपाय सुझाएं। (10 अंक, 150 शब्द)

Both FCEV and BEV are emerging alternatives to conventional polluting vehicles, though varying in technology used.

Fuel cell - Electric vehicle (FCEV)	Battery Electric Vehicle (BEV)
① Uses fuel-cell to produce energy required.	① Uses battery for production of energy.
② May use Hydrogen-fuel cell battery.	② May use Li-ion, Zinc-Air or Ni-Cd battery.
③ Cheaper alternative.	③ Costlier option.
④ Only replacing anode-cathode.	④ Issue of charge-discharge.
⑤ Shorter life span.	⑤ Longer shelf-life.

(Don't Write anything in this Area)

Advantages of EVs:

(1) Economic → long-term economical to use.

(2) Environmental → non-polluting because no harmful GHG emmissions.
Eg: No N_2, NH_3, etc.

(3) Social → Higher prestige and status associated.

(4) Legal → FAME I/II policies.

Measures for accelerating e-Mobility:

(1) Clarity and infrastructure on charging stations.

(2) Awareness and behavioural change in society.

(3) Safety of EVs. (4) Incentives of adoption.
Eg: Tax-rebate, etc.

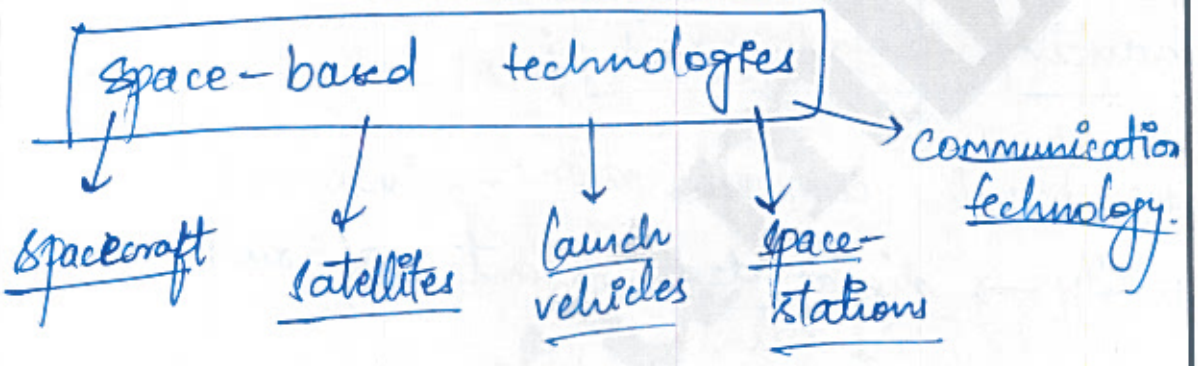
Thus, all stakeholder-friendly policy will bring us close to 30% EV-mobility by 2030.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.3) Space based technologies are helpful in not only monitoring development, but also enhancing it. Discuss. (10 marks, 150 words)

अंतरिक्ष आधारित प्रौद्योगिकियां न केवल विकास की निगरानी करने में सहायक हैं, बल्कि इसे बढ़ाने में भी सहायक हैं। चर्चा कीजिए। (10 अंक, 150 शब्द)

Space-based technologies are emerging technologies aimed at modernisation of space entities and applications.



Helpful in monitoring development -

① Helps in monitor agricultural activities (Green Space):

Eg: ISRO's ICRISAT helps know crop-productivity.

② Monitoring infrastructure and disasters:

(Don't Write anything in this Area)

Eg: Communication and Remote-Sensing (NAVIC) for forest fires warning, etc.

(3) Monitor threats and attacks:

Eg: USA/EU anticipation of Chernobyl Disaster using satellite.

Enhancing Development:

(4) Space-based communication - Internet facility → digital development of rural areas.

Eg: Bharat Net, etc.

(5) Knowing history and scientific development:

Eg: Chandrayaan 2 (water mapping).

India currently has 2% share in global space economy. To increase it to 5% by 2030, ISRO and DRDO must re-capacitate to emerge as global space hub such as SSLV, etc.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.4) Ensuring sustainable consumption and production patterns for an environmentally conscious world is not possible without fundamental changes in lifestyle. Discuss this statement in light of Lifestyle for the Environment (LiFE) Movement. (10 marks, 150 words)

जीवन शैली में मूलभूत परिवर्तन लाए बिना पर्यावरण के प्रति जागरूक दुनिया के लिए सतत उपभोग और उत्पादन पैटर्न सुनिश्चित करना संभव नहीं है। पर्यावरण के लिए जीवन शैली (LiFE) आंदोलन के आलोक में इस कथन की चर्चा कीजिए। (10 अंक, 150 शब्द)

Indian PM - Modi called for change in lifestyle to climate - conscious lifestyle through LiFE Movement at COP26 Summit in Glasgow, 2022.

Necessity of change in lifestyle for ensuring sustainable consumption and production :

① Need - based products use : using commodities rationally as required.
Eg : No excess food → No wastage.

② Green - Infrastructure : for reducing climate change speed and resist adverse impacts.

(Don't Write anything in this Area

Ex: Solar panels, de-congestion → lessen Urban Heat Island (UHI).

③ Adoption of Electric Vehicles (EVs), etc: to reduce coal-based energy production.

④ Organic, Natural farming: to lessen pollution from nitrogen-fertilizers.

Ex: ZBNF farming.

⑤ Planned urbanisation: for sustainable and disaster-resilient constructions.

For a sustainable life-pattern, Need is to "Reform, Perform and Transform" traditional polluting practices to climate-friendly lifestyle.

Feedback
(For OFFICE use only)

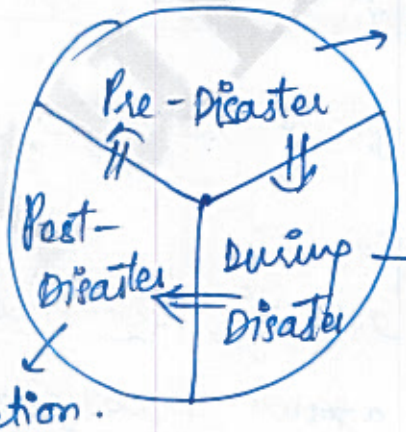
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.5) Managing risks, rather than impacts, lies at the core of effective disaster management strategy. In light of this statement, describe the flood risk profile of India and evaluate preparedness for effective flood management. (10 marks, 150 words)

प्रभावों के बजाय जोखिमों का प्रबंधन, प्रभावी आपदा प्रबंधन रणनीति के मूल में निहित है। इस कथन के आलोक में, भारत के बाढ़ जोखिम प्रोफाइल का वर्णन करें और प्रभावी बाढ़ प्रबंधन के लिए तैयारियों का मूल्यांकन करें। (10 अंक, 150 शब्द)

After the adoption of Yokohama Strategy (1994), India moved from the old reactive to the new pro-active, disaster-mitigation & preparedness strategy.

India's Disaster Management Strategy →



Preparedness.

Rehabilitation, Recovery, Reconstruction.

Rescue and search

Flood Risk Profile of India:

12% India's land is prone to floods, as per IMD,

12-15% maize & rice cultivation affected due to floods and flash floods (decade).

(Don't Write anything in this Area)

Preparedness for effective flood Management

(I) **Pre-Disaster** → ① EWS at place.
Eg: IFLOWS Mumbai.
② IMD reports and weather forecasting.

(II) **During Disaster** → ③ NDRF and SDRF.
④ Use of aid to victims.

(III) **Post-Disaster** → ⑤ Flood-proof infrastructure as per Building Code, 2016.
⑥ Flood walls, flood shelters.

Failures → ① lack of community volunteers.
② Failed inter-agency coordination.
③ Low ~~Public~~ use of ICT - sensors, etc.

Thus, effective use of **IWDP**, Ganga Board for flood management and dedicated Flood Management Programme is the need of the hour.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.6) Solar power sector is not only leading the mitigation efforts against climate change, but the innovations in solar power can also accelerate adaptation of agriculture to a new reality of changed climate. Discuss. (10 marks, 150 words)

सौर ऊर्जा क्षेत्र न केवल जलवायु परिवर्तन के खिलाफ शमन प्रयासों का नेतृत्व कर रहा है, बल्कि सौर ऊर्जा में नवाचार भी बदली हुई जलवायु की एक नई वास्तविकता के लिए कृषि के अनुकूलन में तेजी ला सकते हैं। चर्चा करें। (10 अंक, 150 शब्द)

India's development of "OSOWOG" and establishment of "ISA" is a signal of solar energy adoption as wise step towards climate-friendly new LIFEstyle.

Solar power sector – Mitigating efforts against climate change (CC) :

(1) Renewable source of energy.
→ against coal, petroleum.

(2) Slows down climate change.
Eg: H_2-fuel cell via. solar energy is non-pollutive.

(3) Cheaper source of electricity generation.

(Don't Write anything in this Area)

Innovations in solar power can accelerate adaptation of agriculture to changed climate reality:

(4) Floating solar panels — less cost as compared to ground ones → More easy adaptability

Eg: At Omkareshwar (MP).

(5) Roof-top solar panels.

Eg: PLI Schemes.

(6) National Solar Mission under (NAPCC) - Innovative adaptation.

(7) PM-KUSUM → dual role, farming as well as irrigation through solar energy. → environment friendly "agri".

Need is of mass scale solar production to easily achieve 50% energy production from renewable sources by 2030 (Panchamrita goal).

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.7) Necessitated by contingent law & order situation in the North-Eastern states in 1958, Armed Forces (Special Powers) Act (AFSPA) continues to be applicable even after six decades of its enactment despite widespread criticism. Critically evaluate the utility of AFSPA in light of prevailing security environment in the country. (10 marks, 150 words)

1958 में उत्तर–पूर्वी राज्यों में आकस्मिक कानून और व्यवस्था की स्थिति के कारण, सशस्त्र बल (विशेष अधिकार) अधि. नियम (AFSPA) व्यापक आलोचना के बावजूद इसके लागू होने के छह दशकों के बाद भी लागू है। देश में प्रचलित सुरक्षा वातावरण के आलोक में AFSPA की उपयोगिता का समालोचनात्मक मूल्यांकन कीजिए। (10 अंक, 150 शब्द)

The Central Government partial withdrawal of "AFSPA" from four North-Eastern States has bought lime-light controversy on this archaic law.

Utility of AFSPA, 1958 → Relevance.

(1) Internal security – against threats from naxalism, LWE, insurgencies.

eg: LWE in Tripura.

(2) International Borders' vulnerability – porous borders increases threat of radicalisation and terrorism.

eg: India (Manipur) ~~border~~ – Myanmar (border).

(B) To contain anti-national and secessionist demands -

eg: Nagalim demand by NSC(K).

Non-relevance of AFSPA, 1958 -

(4) Loss to human lives & property.

eg: 6 people dead in Nagaland (2021).

(5) Immunity to armed forces -

eg: sec(5)(2) AFSPA - no enquiry against Army.

(6) Use of peace, communication, accords instead of violence.

eg: Bodo peace Accord (Assam) - 2022.

Jeevan Reddy Commission's demand of scrapping of AFSPA must be balanced with larger National security interest via. light-touch regulations.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.8) Why has fake news on the internet emerged as an internal security challenge? How can we identify a fake news? Also, throw light on legal and institutional arrangements to tackle fake news.

(10 marks, 150 words)

इंटरनेट पर फेक न्यूज आंतरिक सुरक्षा चुनौती के रूप में क्यों उभरी हैं? हम एक फेक न्यूज की पहचान कैसे कर सकते हैं? साथ ही, फेक न्यूज से निपटने के लिए कानूनी और संस्थागत व्यवस्थाओं पर प्रकाश डालें। (10 अंक, 150 शब्द)

Cyber-domain has emerged as 5th domain of threat with fake news as most effective weapon.

Fake news (Internet) — Internal security challenge :

(1) Radicalisation and extremism via. internet — social media.

eg: Youtube channel of ISIS terrorists.

(2) Violence due to fake news leads to internal instability.

eg: Mob-lynching due to fake "kidnapper" news via. WhatsApp.

(Don't Write anything in this Area)

Identify a fake news?

① Use of technology – Data analytics, artificial intelligence (AI), ML.

② Regular monitoring via. social media sites.
Eg: IT Rules, 2021.

③ Use of cyber-volunteers.

Legal Arrangements	Institutional Measures
① IT Rules, 2021.	① MEITY.
② IT Act, 2000.	② MoBroadcasting.
③ Indian Evidence Act, 1872.	③ Intelligence Bureaus, (IB) and R&AW.
④ Sedition – IPC, 1860. Sec (124A)	

To use internet for us, and not against us, A "social media policy" must be implemented with Digital Ethics for all stakeholders.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.9) Discuss the salient features of Agnipath scheme. Underlining the benefits of the scheme, mention ways to overcome associated challenges. (10 marks, 150 words)

अग्निपथ योजना की मुख्य विशेषताओं की चर्चा कीजिए। योजना के लाभों को रेखांकित करते हुए, संबंधित चुनौतियों को दूर करने के तरीकों का उल्लेख करें। (10 अंक, 150 शब्द)

Agnipath Scheme, 2022 is a new defence recruitment scheme for hiring youth in armed forces for a four-year term (Ministry of Defence).

Salient features of Scheme

1. Youth (19-24 yrs).
2. Post 4-yr recruitment to 25% servicemen → "Agniveers".
3. Fit and young armed forces.

Benefits of Schemes:

1. Fitter and smart armed forces: since youth can best fight newer threats.
   eg: Indo-china clashes (2021).

(Don't Write anything in this Area)

② Lateral recruitment → innovation in defence services.

③ Post-4 yr. options → 3.1) Skilled youth for other jobs.
3.2) Scholarships for further studies.
3.3) Credit for startups, etc.

Challenges	Way forward
① Unemployment to 75% servicemen after 4 yrs. services.	① Industry/Defence-academia gap filling by tieup up with companies/universities.
② 6-month training not comprehensive.	② New ways and increase training period.

Need is to upskill the armed forces amidst new challenges but such schemes must be open to public scrutiny and due consensus must be taken before roll-out.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.10) Examine how advancements in technology has allowed organize crime syndicates to not only expand but also diversify their activities. Also recommend suitable measures to tackle the menace of organized crime. (10 marks, 150 words)

परीक्षण करें कि कैसे प्रौद्योगिकी में प्रगति ने संगठित अपराध सिंडिकेट को न केवल विस्तार करने बल्कि उनकी गतिविधियों में विविधता लाने की भी अनुमति दी है। संगठित अपराध के खतरे से निपटने के लिए उपयुक्त उपायों की भी सिफारिश करें। (10 अंक, 150 शब्द)

New advancements in technology have expanded realm of cyber-crimes and organised crimes seen during Chinese-"Red-Echo" attack on Indian company.

Advancements led to expansion and diversification of organised crimes:

(1) Cyber-Terrorism - due to use of online technologies and consequential anonymity.

Eg: Blockchain → cryptocurrency → money-laundering.

(2) Radicalisation & Extremism - due to

fake and mis-information leading to violence, etc.

Eg: Use of 5G, AI → social media (ISIS).

(3) Sensors, UAVs, drones for newer attacks.

Eg: • UAVs → URI Attack

↳ • cyber-attacks via. "Hydra-Wet" of Russia.

Measures to tackle menace of organised crime:

(1) Inter-departmental coordination between ED, IB and law agencies.

(2) Voluntary tracking by social media intermediaries (IT Rules, 2021).

(3) Need of digital ethics.

(4) International collaboration - eg: South-South cooperation.

Hence, use data analytics, etc. to stop organised crimes.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.11) Nanotechnology is an inter-disciplinary and inter-connected science that has revolutionary applications across sectors. In this perspective, discuss the relevance of nanotechnology for socio-economic development in the country. (15 marks, 250 words)

नैनोटेक्नोलॉजी एक अंतर-अनुशासनात्मक और परस्पर जुड़ा हुआ विज्ञान है जिसके सभी क्षेत्रों में क्रांतिकारी अनुप्रयोग हैं। इस परिप्रेक्ष्य में, देश में सामाजिक-आर्थिक विकास के लिए नैनो प्रौद्योगिकी की प्रासंगिकता पर चर्चा करें। (15 अंक, 250 शब्द)

Nanotechnology is the branch of science infused with technology that uses particles sized 1-100nm scale in applications.

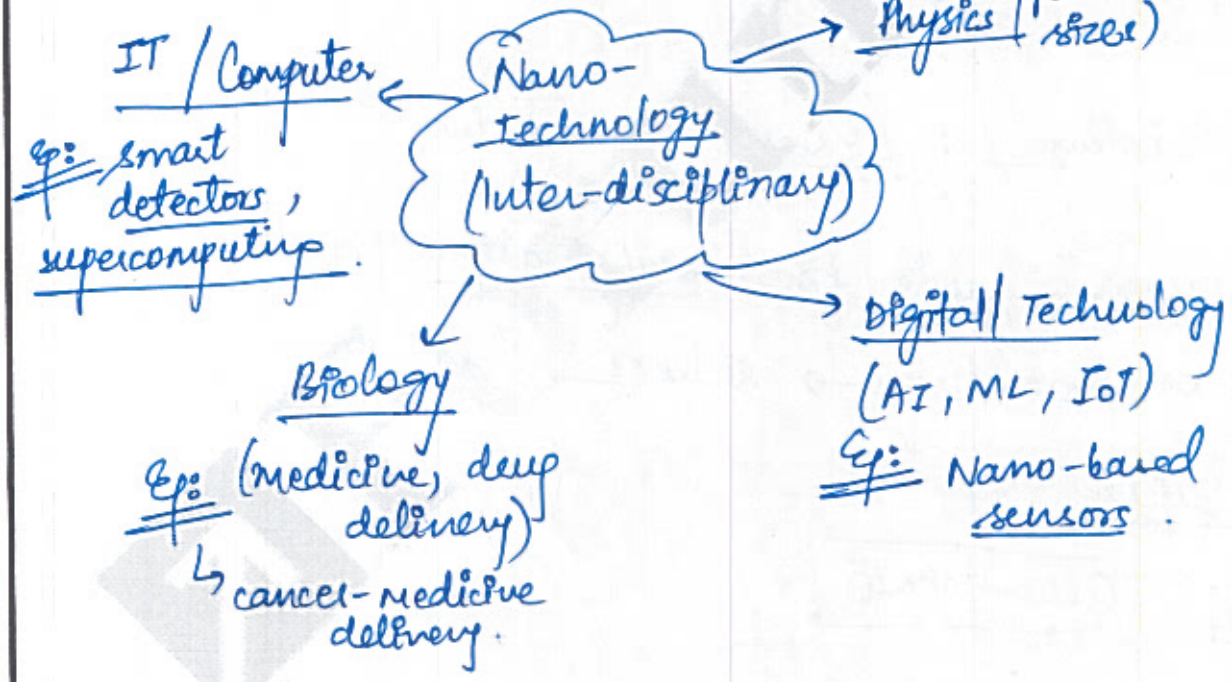


fig. Application across sectors.

Relevance of Nanotechnology:

(I) Social development:

(1) Healthcare sector: (Red Nanotech)

1.1) Better targeting of delivery of medicines.

Eg: Nano-gold particles (cancer-drug delivery).

1.2) Detection of disease.

Eg: Nano-biosensors.

(2) Agriculture: (Green Nanotech).

2.1) Farmer's guide for soil health and crop productivity → reduces stress and suicides.

Eg: ESDS-Lokniti:

2.2) Hazard, locust-attacks detection,

∴ Disaster preparedness → reduced losses.

(Don't Write anything in this Area

(II) Economic Development :

(3) Industries and Manufacturing (White NanoTech):

(3.1) Nano-sensors, detectors, chips for manufacturing sector. Eg: PLI schemes.

(4) Energy sector :

(4.1) fuel cell production using hydrogen fuel-cell, etc.

Eg: Green H_2/ Ammonia.

(5) Increased farmers income.

Schemes like Nano Mission 2007, PLI Scheme 2021 are step to strengthen Nanotechnology adoption while need is to have a dedicated commission under MoS&T.

Feedback
(For OFFICE use only

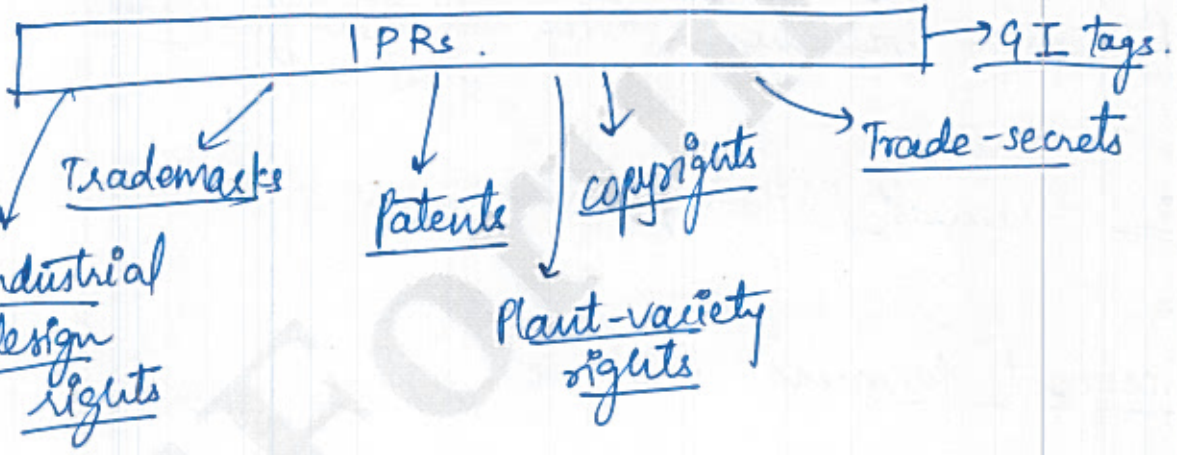
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.12) The increasing demand for stronger Intellectual Property Rights (IPR) protections is motivated by a desire to invigorate a groundswell of innovation, but it is more likely to lead towards IP monopolies. Examine. (15 marks, 250 words)

मजबूत बौद्धिक संपदा अधिकार (IPR) सुरक्षा की बढ़ती मांग नवाचार के आधार को मजबूत करने की इच्छा से प्रेरित है, लेकिन इससे बौद्धिक संपदा (IPR) के एकाधिकार की ओर ले जाने की अधिक संभावना है। परीक्षण करें।

(15 अंक, 250 शब्द)

[WTO] defines intellectual property Rights (IPR) as intangible rights over inventions, discoveries, etc.



In the aftermath of COVID-19, vaccine production have bought into limelight increasing demands for stronger IPR regimes.

IPRs to invigorate innovation:

(1) Encourages innovation and research - dedicated R&D due to assured IPR.

Eg: mRNA vaccines (Pfizer), recombinant vaccines, etc.

(2) Lessens disputes over IPR issues - due to strong IPR protection.

(3) Motivation to developing and under-developed Nations to innovate.

Eg: African Nations, etc.

IPRs likely to lead towards IPR monopoly:

(4) Developed Nations favoured: as they have best evolving technology and formulae.

Eg: EU, USA, etc.

(Don't Write anything in this Area)

(5) Misuse and disputes pendency at WTO: since monopoly of USA, China, etc. to veto India, Newzealand, etc.

(6) Developing nations at mercy of monopolisers. eg: Vaccine Nationalism and exclusions.

Way forward:

(1) Statute in WTO's trade policy with effective grievance redressal.

(2) WIPO oversight needs to be increased and neutral.

(3) A middle-path approach for patent-pooling of essential items, etc. to secure developing nation's interests.

Thus, a multi-pronged and well-thought IPR regime with strong ethical principles can be come up with.

Feedback
(For OFFICE use only)

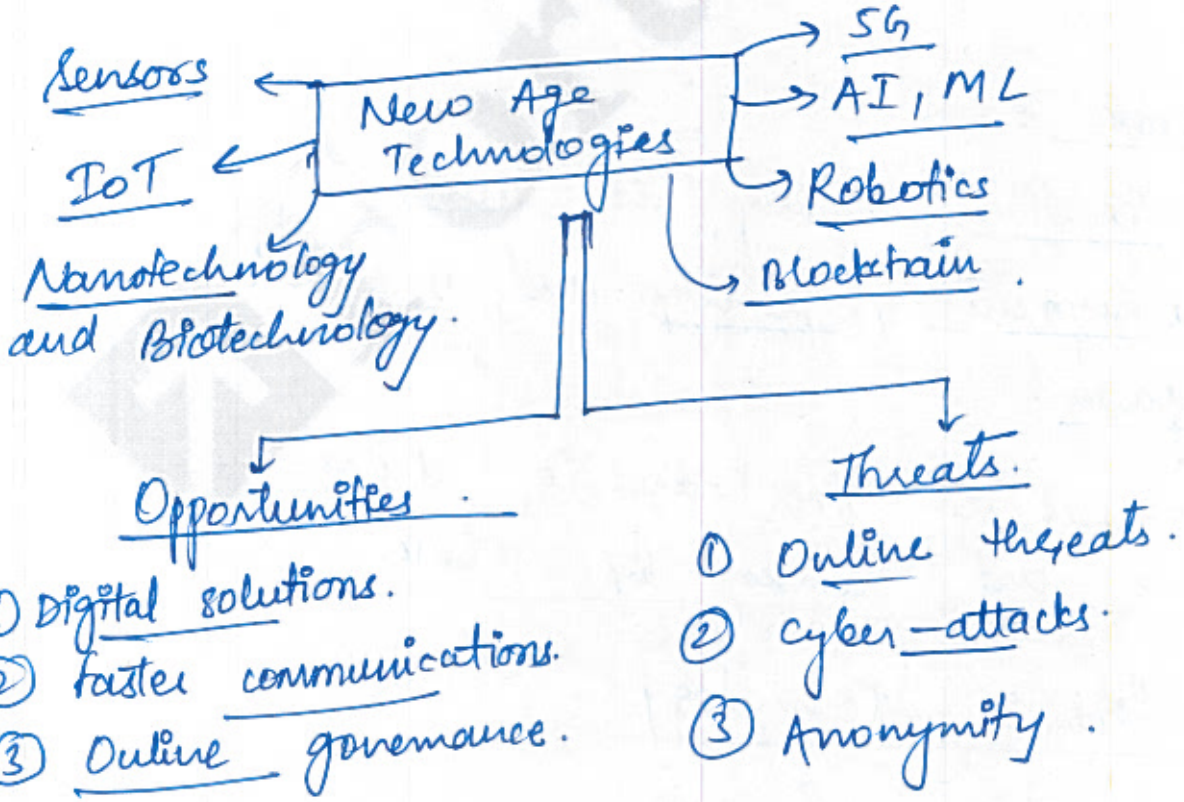
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.13) New age digital technologies are creating disruptions that open fascinating opportunities and pose frightening threats. Give an account of how digital disruptive technologies are changing our lives. (15 marks, 250 words)

नए जमाने की डिजिटल प्रौद्योगिकियां व्यवधान पैदा कर रही हैं जो आकर्षक अवसरों को खोलती हैं और भयावह खतरे पैदा करती हैं। डिजिटल डिसरप्टिव प्रौद्योगिकियां हमारे जीवन को कैसे बदल रही हैं, उनका लेखा-जोखा दीजिए।

(15 अंक, 250 शब्द)

New age digital technologies are emerging technologies with potential to revolutionalise the whole economy and faster solutions to problems, thus called bleeding-edge technologies.



Digital Disruptive Technology Impacting and changing lives:

(1) Artificial Intelligence and Machine Learning:

1.1) Tracking user's choices and leading to disruptive choices.

eg: OTT platforms (Netflix)'s recommendations.

↳ Communal behaviours → radical followups.

(2) Robotics:

(2.1) Automation leading to massive unemployment, poverty and unskilled manpower.

(2.2) Threat to lives due to driver-less cars and surgery by robots.

(3) Blockchain Technology:

3.1) Decentralised, anonymous transactions.

eg: cyber-terrorism, money-laundering, organised crimes, etc.

④ Social Media & 5G:

4.1) faster dissemination of wrong/fake news → radicalisation & LWE.

eg: communal violence, political mobilisation (Cambridge Analytica, 2016).

Way forward:

① Need of Social Media Ethics and Social media Policy.

② Coordination between intelligence agencies.

③ Int'l cooperation. ④ Citizens awareness.

eg: (Presidio Principles).

Digital technology(s) are as good as the users. Thus, ethical use with informative approach is need of the hour.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.14) Single use plastic (SUP) is a health, economic and environmental scourge, that requires governments to regulate, businesses to innovate and individuals to act. Examine in context of recently introduced ban on SUPs. (15 marks, 250 words)

सिंगल यूज प्लास्टिक (SUP) स्वास्थ्य, आर्थिक और पर्यावरणीय संकट है, जिसके लिए सरकारों को विनियमित करने, व्यवसायों को नवाचार करने और व्यक्तिगत रूप से कार्य करने की आवश्यकता होती है। सिंगल यूज प्लास्टिक पर हाल ही में शुरू किए गए प्रतिबंध के संदर्भ में परीक्षण करें। (15 अंक, 250 शब्द)

The Indian government ban on Single Use Plastics (SUP) started from July 1, 2022 towards a "green today, greener tomorrow" vision of PM Modi.

Banned SUP →
- plastic straws.
- plastic earbuds, toothpicks.
- balloon strips, etc.
- icecream sticks.

SUP as a scourge:

① Health scourge:

① Leads to non-communicable diseases and chronic health problems.

Eg: Cancer,

② Poor health of animals (biodiversity) leads to poor health of infants, etc.

Eg: Livestock deaths.

(II) Economic Scourge:

③ High cost of plastics manufacturing, generating non-biodegradable wastes.

Eg: poly-ethelene, styrene, etc.

④ Costly recycling of plastics.

(III) Environmental scourge:

⑤ Soil and land pollution:

Eg: Seemapuri colony in Delhi.

⑥ Loosing soil fertility.

Actions/Interventions Needed:

(I) Regulation by governments:

① Inter-state cooperation through NBA and SBAs.

(Don't Write anything in this Area)

② Collection and segregation of waste plastic.

③ Awareness through (caller tones) [slogans, etc]

(II) Innovation by Bussiness :

④ EPR under [e-waste rules, 2011].

⑤ eg: Bamboo straws, [NO WASTE PRODUCTION], etc.

(III) Actions by Individuals :

6) Awareness and social responsibility towards environment.
eg: para-environmental volunteers.

7) Capacity building of all stakeholders.
eg: Smart city, Smart People.

Barring the SVPs are in love with "ONE PLANET, ONE HEALTH" agenda to achieve climate-friendly Panchamrita goals by 2030.

Feedback
(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.15) Green hydrogen can be the engine of a sustainable economy, but it would require crossing financial and technological barriers. Discuss the reasons for increasing interest in green hydrogen and challenges in its adoption as the fuel of the future. (15 marks, 250 words)

ग्रीन हाइड्रोजन एक स्थायी अर्थव्यवस्था का इंजन हो सकता है, लेकिन इसके लिए वित्तीय और तकनीकी बाधाओं को पार करना होगा। ग्रीन हाइड्रोजन में बढ़ती रुचि के कारणों और भविष्य के ईंधन के रूप में इसे अपनाने में चुनौतियों की चर्चा करें। (15 अंक, 250 शब्द)

Green hydrogen is a viable alternative of conventional coal-based fuel due to cheap production but faces resistance due to lacunas in technology and cost.

Electrolysis of water → (steam)/(heat) → Hydrogen (H_2) → generated through renewable source.

Eg: Green H_2 production.

Reasons for Increasing Interest in Green H_2:

(1) "Climate Neutral by 2070" Agenda - of Indian government under COP26 commitment towards renewable energy production.

(2) Speeding Climate change - hastens need to shift to non-polluting sources of energy production.

(50% energy production by 2030).

Eg: Melting of glaciers (Hindu-Kush Himalayas - 10% faster than 1970s).

(3) Cheaper production of green H_2: as it requires steam production (renewable) to electrolysis of water.

(4) Technological advancement in India:

eg: H_2-fuel cell technology.

Challenges in adoption as a fuel:

(1) Problem in storage: as it requires very low temperatures and pipes for storage.

(2) financial crisis : large scale adoption is not as cheap as through coal ash.

(3) Hesitancy to adoption from people.

(4) Limited private-sector participation.

(5) Technological gap with traditional infrastructure and limited pool of skilled manpower.

Way forward
- (1) National green Hydrogen Policy.
- (2) Incentivise private sector production.
- (3) International collaboration such as technology, etc. from Japan, USA, etc.

Since, Transport sector is the second-most polluting in India, "Green-Hydrogen" is a viable, cheaper alternative alongwith speeding up EVs usage in India.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.16) Making the invisible groundwater visible is critical for building climate resilience and achieving sustainable development goals. Examine. (15 marks, 250 words)

अदृश्य भूजल को दृश्यमान बनाना जलवायु को लचीलापन बनाने और सतत विकास लक्ष्यों को प्राप्त करने के लिए महत्वपूर्ण है। परीक्षण कीजिए। (15 अंक, 250 शब्द)

85% irrigation facility in India employs groundwater extraction leading to inefficient use compared to china's mere 14% usage (Central Groundwater Commission).

This taken-for-granted usage of groundwater (GW) resources needs to be checked upon.

Invisible GW (critical) → wise-use → visible GW → Climate Resilience. → SDGs.

Invisible GW refers to indiscriminate use of GW leading to both over-utilisation and under-utilisation.

Building Climate Resilience :

① Groundwater Recharging -

1.1) IWDP via. groundwell recharges.

Eg: Rainwater Harvesting systems - Kunds, Tankas (RJ, MH).

1.2) Aquifer recharge programme.

② Non-discriminate use of groundwater for irrigation, etc.

eg Punjab, Haryana, etc.

Eg: Groundwater Extraction Guidelines, 2022.

∴ Climate resilience via. wiseful use → no water scarcity.

IWB - Punjab - zero water after 2050).

(Don't Write anything in this Area)

③ "Virtual water concept" - knowing and accounting water use.

Eg: Smart-Metering, etc.

Way forward:

① Clearly laid out policy.

② Central Ground water commission - more powers, etc.

③ Climate-change awareness programmes, like SBA.

Thus, such steps will help in achieving SDGs - 3, 13 by 2030.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.17) Despite the presence of a strong institutional framework and clearly stated policy, huge losses in terms of human, financial, environmental and livelihood show that India still struggles in effective management of disasters. Discuss the reasons for the gap between policy and practices related to disaster management in the country. (15 marks, 250 words)

एक मजबूत संस्थागत ढांचे और स्पष्ट रूप से बताई गई नीति की उपस्थिति के बावजूद, मानव, वित्तीय, पर्यावरण और आजीविका के मामले में भारी नुकसान दर्शाता है कि भारत अभी भी आपदाओं के प्रभावी प्रबंधन में संघर्ष कर रहा है। देश में आपदा प्रबंधन से संबंधित नीति और उनके कार्यान्वयन के बीच अंतर के कारणों की चर्चा करें। (15 अंक, 250 शब्द)

Disaster is any sudden event leading to loss of life and property, difficult to cope up with existing capacity.

Eg: Tsunami, volcanoes, etc.
(2004)

Strong institutional & Stated-policy frameworks:

(1) NDMA guidelines for Drought, Cyclones, etc.

(2) NDMA Act, 2005.

(3) Sendai framework, 2015.

(4) Yokohama Strategy, 1994.

(5) Budgetary allocation for Disaster Mitigation Fund.

(6) NDRF, SDRF institutions.

Huge losses due to disasters →

① Humans : 10,000 people affected due to Odisha cyclone 1999.

② financial : India lost 2-5% GDP in droughts since 1950s.

③ Environmental : 10-15% wheat, maize, livestock affected (2010-2020).

④ Livelihood : UN - 80% displaced due to natural disasters in India are woman.

The above shows failure of effective management of disaster in India.

Reasons for gap between Policy & Practises :

① Disaster Preparedness and Mitigation :

① Non-responding / Absence of Early Warning Systems (EWS).

eg: Only few like IFLOWS Mumbai.

② Lack of effective Vulnerability and Risk assessment.

(Don't Write anything in this Area)

(II) During Disaster Management :

(3) Lack of community participation in rescues, evacuation.

(4) Poor coordination between NDRF, Army, etc.

(III) Post-Disaster :

(5) Ineffective and delayed documentation.
Eg: Kerala floods 2018 → CAG report in 2020.

(6) Non-resilient reconstruction and poor rehabilitation.
Eg: Odisha, Manipur, etc.

Way Ahead
- (1) Green-infrastructure.
- (2) Flood-proof, drought-proof structure
- (3) Use of ICT, community awareness.
- (4) Best Practice → Odisha Model - No casuality.

Thus, an aware, prepared citizenry with proactive outlook of government and use of ICT is the need of the hour to make India Disaster Resilient.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.18) Present a brief account of various security forces deployed to protect India's terrestrial and maritime borders. Also, bring out various challenges faced by border security forces and suggest easures to effectively address them. (15 marks, 250 words)

भारत की स्थलीय और समुद्री सीमाओं की रक्षा के लिए तैनात विभिन्न सुरक्षा बलों का संक्षिप्त विवरण प्रस्तुत करें। साथ ही, सीमा सुरक्षा बलों के सामने आने वाली विभिन्न चुनौतियों को सामने लाएं और उन्हें प्रभावी ढंग से संबोधित करने के उपाय सुझाएं। (15 अंक, 250 शब्द)

India is surrounded by seas and oceans on three sides (7516 km) and on land from Northern side. To tackle security issues, various forces are deployed on all borders.

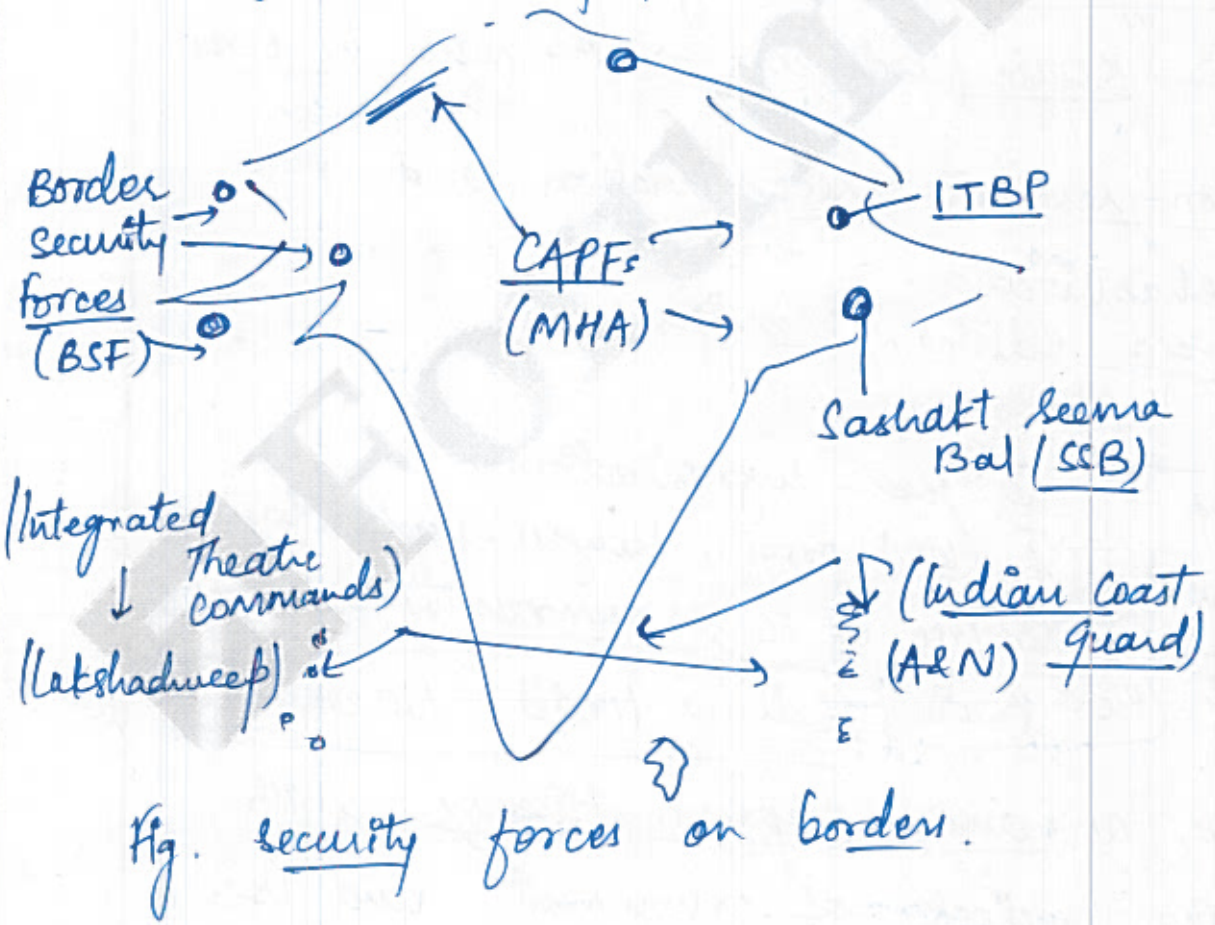


Fig. Security forces on borders.

Challenges faced by BSFs:

1. Lack of coordination among various forces.
   eg: ITBP, Indian Army, etc.

2. Resistance from state Governments on International borders.
   eg: Gujarat v/s BSF jurisdictions.

3. Extremities of climate & Topography:
   eg: forces at Siachen Glacier, etc.

4. Insurgency and extremism - Internal and external:
   eg: AFSPA controversy - Nagaland, Insurgency in Tripura.

5. Linguistic barrier & miscommunication at borders.
   eg: Indo-China at Galwan valley (2020).

6. Infiltration on borders.

(Don't Write anything in this Area)

Measures to effectively address:

1. Ensured coordination between agencies.
   Eg: State governments, BSF (MHA) and Ministry of defence.

2. Use of ICT for effective communication.
   Eg: AI-powered watches for translation.

3. Better infrastructure for faster mobility of resources.

4. Use of drones, UAVs, etc. at borders to prevent attacks.
   Eg: Iron Dome (Israel).

The 65% increased budgetary allocation (2022-23) to defence security is a step in right direction to ensure stronger and safer borders and nationals.

Feedback (For OFFICE use only)
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Q.19) In what ways management of maritime borders differ from that of territorial borders? Also, analyze various vulnerabilities that arise from a large maritime boundary of the country.

(15 marks, 250 words)

समुद्री सीमाओं का प्रबंधन किस प्रकार क्षेत्रीय सीमाओं से भिन्न है? इसके अलावा, देश की लंबी समुद्री सीमा से उत्पन्न होने वाली विभिन्न सुभेद्यताओं का विश्लेषण करें।

(15 अंक, 250 शब्द)

A 7516 km long coastline of India with land-boundaries with Pakistan, China and Afghanistan on the west and North and Myanmar, Bhutan & Nepal on the eastern side shows India's vulnerability on all borders.

	Maritime Borders	Terrestrial Borders
Length	(1) very vast than Territorial one.	(1) Shorter than Maritime borders.
Demarcation	(2) Porous and changing with time.	(2) Usually concrete and fixed.

Eg: India-Srilanka Maritime dispute over fishing rights.

Eg: India-China: Johnson and McMohan line.

Threats

(3) Evolving threats such as Drones, submarines, torpedos; from ballistic missiles.

(3) Human infiltrations, UAVs, ~~Land~~ continental Missiles.

Eg: Pakistan-India border.

Forces

(4) BSF, ITBP, SSB, etc.

(4) Indian coast guard (ICG), etc.

Vulnerabilities due to large Maritime Boundary:

(1) Internal security - insurgency and attacks due to ships, etc.

Eg: Mumbai Attack 2011.

(Don't Write anything in this Area

② Biological weapons such as species used - viruses, algae, etc.

③ Inundation threats to coastal areas :

Eg: Islands of Odisha, Andhra Pradesh due to rising water level.

④ International disputes due to varying demarcations.

Eg: India & Bangladesh.

Away forward →
① Disaster-resilient infrastructure - ports, etc.
② Security forces at borders.
Eg: IMAC.
③ Make community and biodiversity less vulnerable.

Feedback
(For OFFICE use only

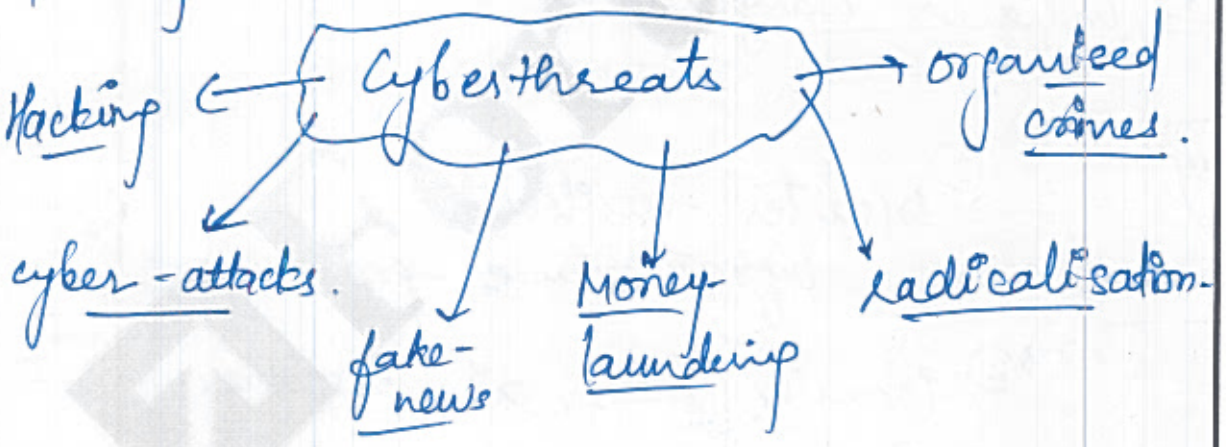
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

(Don't Write anything in this Area)

Q.20) Cyberthreats can wage a dual war on the state and citizens, disrupting the national security as well as social stability. Explain. (15 marks, 250 words)

साइबर धमकी राज्य और नागरिकों पर दोहरा युद्ध छेड़ सकती है, जिससे राष्ट्रीय सुरक्षा और सामाजिक स्थिरता बाधित हो सकती है। व्याख्या कीजिए। (15 अंक, 250 शब्द)

The recent "Wet-Hydra" attack using Russian dark net and Chinese "Red-Echo" attack (2018) on India is a proof of increasing cyberthreats on Nation's security, and citizens' privacy.



Cyberthreats — dual war on the State and citizens —

(1) Threat of cyber-attacks - Phishing, viruses, etc.

State : Precious information of state.

Citizens : Private photos, data.

Eg: Denial of Service Attacks.

(2) Money-laundering using cyber-space :

Citizens - radicalism, extremism against state.

Eg: Sleeper cells, Over Ground Workers (OGW).

State - insurgency and LWE.

Eg: ISIS, hawala-money.

(3) Political Manipulation due to hijacking of websites, accounts, etc.

(Don't Write anything in this Are

Eg: Cambridge Analytica Case (2016).

(4) Data theft and security breach:

Eg: Citizen's data sold via. Twitter Case (2022) → social instability.

(5) Monitoring and spying:

Eg: Pegasus Attack.

Way forward:

(1) International cooperation to tackle menace of organised crimes.

Eg: At UNSC, etc.

(2) Citizens awareness. Eg: Honey-Trapping.

(3) Digital ethics, Social Media ethics.

Need is of a "SAHI" (safe, accountable, holistic and inclusive) cyberspace.

Feedback
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Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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Mentor Feedback Questions

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Test Goal

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Marking Scheme

Mark	Good	Average	Below average
10 Marker	3.75 – 5.0	3.0 – 3.5	< 3.0
15 Marker	5.75 – 7.0	4.0 – 5.5	< 4.0
✓✓	**Key / Relevant Point**		
✗	**Vague / Irrelevant**		

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