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FIAS – MGP 2022 (C-12) – GS Paper #3

**ForumIAS****GENERAL STUDIES**

Name Of Candidate	Aashima Vaswani		
Roll No.	1910067919	Date:	20 July 22

Time Allowed: Three Hours

Maximum Marks: 250

INDEX TABLE			INSTRUCTION	
Q. No.	Max. Marks	Marks Obtained		
1			1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet.	
2				
3				
4				
5				
6			2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory.	
7				
8				
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10				
11			3. The number of marks carried by a question/part is indicated against it.	
12				
13				
14				
15				
16			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.	
17				
18				
19				
20				
Total:	250		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.	
Evaluator's Discretion:			Any specific messages for ForumIAS Mentors/Evaluators with respect to your copy? Write it here.	
Total Marks:			For Student Only	
			Start Time   10:30 am	End Time   1:30 am
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Parameters	Excellent	Very Good	Good	Average	Poor	Very Poor
Language						
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Attempt						

**ADDITIONAL REMARKS**



Q.1) Employment problems of rural and urban areas differ in nature, but their solutions are interdependent and interrelated. Analyze.

(10 marks, 150 words)

ग्रामीण और शहरी क्षेत्रों की रोजगार समस्याएं प्रकृति में भिन्न हैं, लेकिन उनके समाधान अन्योन्याश्रित और परस्पर संबंधित हैं। विश्लेषण कीजिए।

(10 अंक, 150 शब्द)

Employment of youth is necessary to utilize the demographic dividend and ensure it does not turn into demographic disaster due to jobless growth. [Unemployment = % of (PLFs)]

## Problems:

### Urban

- ① Greater number of labours in unorganised and informal sector
- ② Lack of job security
- ③ Issues for migrant labours
- ④ Low-paying jobs for semi skilled and unskilled
- ⑤ Gig economy lacking social security.

### Rural

- ① Over dependence on agriculture  $\Rightarrow$  disguised unemployment  
[Ex:  $\rightarrow$  Tea farms of NE]
- ② High income loss due to middle-man  
[Ex:  $\rightarrow$  Poor farmers]
- ③ Poor skilling options
- ④ Unavailability of informal, freelancing jobs, etc.



Solutions and interdependent & interlinked -

1) Supply-chain: Using forward backward linkage to give good price at rural areas

→ Higher earning due to processed output.

[Ex:] → PMFME to double farmer income & increase exports.

2) Job creation: Filling the vacant government seats and skilling youth.

[Ex:] → Agnipath Scheme for skilling youth.

3) Controlled urbanization and planned development

→ Utilizing local human resource (ODOP)

→ Providing social security net (Social security Codes, 2020)

Thus, by integrating rural and urban economy and skilling manpower for future, jobs and employment issues can be tackled. This will put India in line with its aim to become \$5 trillion economy.

Feedback

(For OFFICE use only)

Structure/  
Presentation

Question  
Interpretation

Content

Value  
Addition

Total



Q.2) Imported inflation is compounding the challenges of post-pandemic recovery for the Indian economy. Discuss. (10 marks, 150 words)

आयातित मुद्रास्फीति भारतीय अर्थव्यवस्था के लिए महामारी के बाद की पुनर्बहाली की चुनौतियों को बढ़ा रही है। चर्चा कीजिए। (10 अंक, 150 शब्द)

India went in technical recession for the first time during pandemic. The supply-chain irregularities, geopolitical tensions, climate crisis and imported inflation have challenged post-pandemic recovery.

Imported inflation -

1. India opened its economy in 1991 LPG reforms

⇒ Export - imports affect Indian markets.

2. Imported inflation due to -

1) Rise in oil prices:

India imports 60% of its edible oil

2) Supply side disruptions

→ Ukraine - Russia war has increased price of Sunflower oil, wheat, etc.

3. Federal tightening by USA -

→ Led to increased outflow of FDIs & FPIs.



4. Dropping India - US exchange rate.  
→ Reached  $1\$ = ₹ 80.14$  (lowest in history)

⇒ Expensive imports

5. RBI Monetary Policy Committee failed to control inflation at  $4\% \pm 2$  to ensure growth.

Way forward —

1) Make India self-reliant

Ex: National mission on palm oil and oilseeds.

2) RBI to stick to mandate of inflation control

Ex: Better transmission of repo changes.

3) Reducing custom duty, import duty to ensure demand shocks don't pop up.

4) Resilient supply chains

Ex: SCRI with Japan, Australia, US.

Thus, to ensure economic growth and employment, inflation (imported & domestic) needs to be sustained.



(Don't Write anything in this

(Don't Write anything in this Area)

Q.3) What do you understand by natural farming? How can it help in building climate resilient agri-culture?  
(10 marks, 150 words)

प्राकृतिक खेती से आप क्या समझते हैं? यह जलवायु अनुकूल कृषि के निर्माण में कैसे मदद कर सकती है?

(10 अंक, 150 शब्द)

Feedback

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Structure/  
Presentation

Question  
Interpretation

Content

Conclusion



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Q.4) Food Processing sector must be developed as one of the principal industries in the country for reasons that go beyond agriculture. Elucidate. (10 marks, 150 words)

खाद्य प्रसंस्करण क्षेत्र को देश के प्राथमिक उद्योगों में से एक के रूप में उन कारणों से विकसित किया जाना चाहिए जोकि कृषि से परे हैं। स्पष्ट कीजिए। (10 अंक, 150 शब्द)

Indian food processing sector contributes to approximately 8.9% of total manufacturing

GVA.

Food processing sector for agriculture sector -

1. Increase farmers income -

→ 85% are small and marginal farmers that fail to earn basic sustainable income

2. Reduce wastage -

→ Will make cold supply chains

→ Will ensure processing of perishable items.

Ex: → Milk processed to cheese, butter, etc

→ Will ensure store-hours for forward transmissions

Ex: → Better transmission of \_\_\_\_\_

3. Make agriculture a profitable enterprise

Ex: → Currently 18% GDP by employing 60% population



Food processing sector for beyond agriculture.

1. Will make India superpower nation

Ex: → Faces threat from NZ in dairy  
 ↳ Could not sign RCEP due to domestic industry demand

2. Develop district infrastructure and economy.

Ex: One District One Product, PM FME

3. Strengthen transport industry.

Ex: Greater movement of raw material, intermediate and processed food.

4. Strengthen SHGs, NBODs and cooperatives.

Ex: → Lejlat Papad empowers women.

↳ Cooperatives making pickles, jams, etc

Thus food processing can help achieve SDG - 2 of 'Zero Hunger' and also ensure economic growth. It is right step in

doubling farmers' income.



Q.5) Space based technologies are helpful in not only monitoring development, but also enhancing it. Discuss. (10 marks, 150 words)

अंतरिक्ष आधारित प्रौद्योगिकियाँ 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 include  
remote sensing, cartography, surveillance,  
weather prediction, meteorology, early  
warning system, communication satellites, etc.

They help in monitoring development -

1. Use of satellites for monitoring schemes implementation.

Ex: → MN6IREGIA progress through \_\_\_\_\_  
 2 for checking border security and prohibiting  
infiltration.

Ex: → US used space technology to monitor  
Chinese developments at LAC.

3. To check post-disaster reconstruction and  
development.

Ex: → MODIS and VIRIIS.



4. Drone based technologies for monitoring post-attacks

Ex: → locust attack

Help in enhancing development -

1. early warning systems to minimize vulnerability & destruction.

Ex: → Delhi RINES centre

2. Communication and satellite phones for equitable development.

Ex: → In Andaman & Nicobar islands

3. Surveillance, reconnaissance and inspections to safeguard development & plan.

Ex: → Vibrant village development program

4. Planning according to hazard and vulnerability maps prepared.

Thus space based technologies assist India in achieving SDG-10 (minimizing inequalities) and ensuring development for all.  
(Sawodaya)



Q.6) 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।

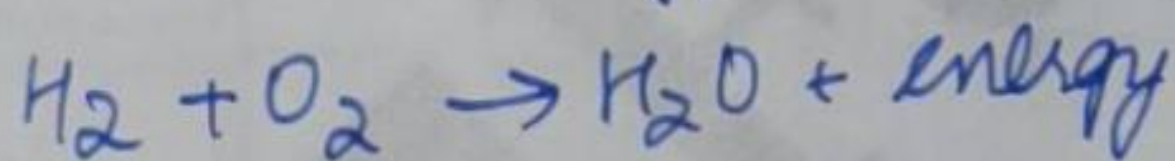
(10 अंक, 150 शब्द)

Electric vehicles form the dawn of new era to face climate crisis by replacing fossil fuel based vehicles.

### Fuel cell EV

1. They have combination of fuel cell, i.e., H<sub>2</sub> based fuel to drive vehicle.

2. They ~~release~~ <sup>use</sup> Oxygen & Water as byproducts.



3. They are very environment friendly if H<sub>2</sub> is green hydrogen.

4. Low availability of H<sub>2</sub> increases cost of fuel.

### Battery EV

1. They use stored energy in the form of batteries for powering vehicles.

(Ex: Lead acetate battery  
↳ Cobalt based battery)

2. They undergo chemical reaction and need to be recharged.

(Ex: Through replacement  
↳ Through EV charging stations).

3. They face issues of battery safety due to



5. Still in development stage against BEV available in market.
6. Storing H<sub>2</sub> needs proper safeguard.

lack of regulatory mechanism.

4. Rare earth metals for batteries makes EVs strategic.

## Advantages of EV

- Lesser pollution
- environment friendly
- reduces GHG emissions and air pollution
- fights climate crisis
- in line with India's Panchamitra
- crucial for healthy individuals.
- prevents lung diseases (asthma, etc)

## Measures for adopting e-mobility -

1. Subsidies - Ex: Delhi model
2. Common BRTS & MRTS to be EVs.

Ex: Pune model

3. Proper safeguards to avoid hesitation of customers. Ex: EV catching fire.

Thus EV forming future, reduce India's oil dependence & make it self reliant & green.



Q.7) 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 traditional lifestyle includes sacred groves, praying Lord Indra, Mother Earth thereby safeguarding nature.

[Ex:] → India has one of lowest per capita emissions

Sustainable consumption for LIFE

1. Avoiding single use plastics.

[Ex:] → Produce 700 metric tonnes of waste  
→ India banned them from 1st July '22

2. Moving from conventional vehicles to EVs.

[Ex:] → FAME scheme to promote EVs

3. Moving from grid-fed electricity to solar energy & becoming co-generators.

[Ex:] → Solar roof top in urban cities.

4. Consuming organic vegetables rather than Synthetic-pesticide based ones.



Sustainable production for Life -

1. Using electronic precipitators and filters to treat emissions inhouse.

Ex: → Mandatory for industry to reduce emissions

2. Reusing coal-fire ash to build bricks & roads to ~~avoid~~ reduce waste.

Ex: → Circular economy and sustenance.

3. Processing waste water for Life.

Ex: → Zero Liquid Discharge plants.

4. Proper precautions for workers in mining and construction sectors.

Thus, ~~Modi~~ PM Modi highlighted at Glasgow in COP-21 to adopt lifestyle for Environment and co-live with nature.

This is in line with triple bottom line

that saves 3Ps - people, planet & profit.

Feedback  
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Structure/  
Presentation

Question  
Interpretation

Content

Value  
Addition

Total



Q.8) 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)

Disaster management strategy comprises of two components - (1) Risk management (2) Reconstruction.

Risk management includes reducing vulnerability and increasing capacity of people.

Managing risk better than impact -

1. Impact based. hazard mapping to take precautionary steps -

⇒ Reduces destruction, damage & life lost.

2. Empowers people through capacity building

program ⇒ Reduces impact

Ex: → Volunteers are taught in 43 of most vulnerable districts in India.

3. Mitigation over adaptation - Reduces changes of disaster by reducing vulnerable.



Ex: → Employing drought-resistant crops can dampen the disaster impacts.

### Flood profile of India —

CEEW lists 26 of 35 Indian states & UTs as vulnerable to hydrometeorological hazards.

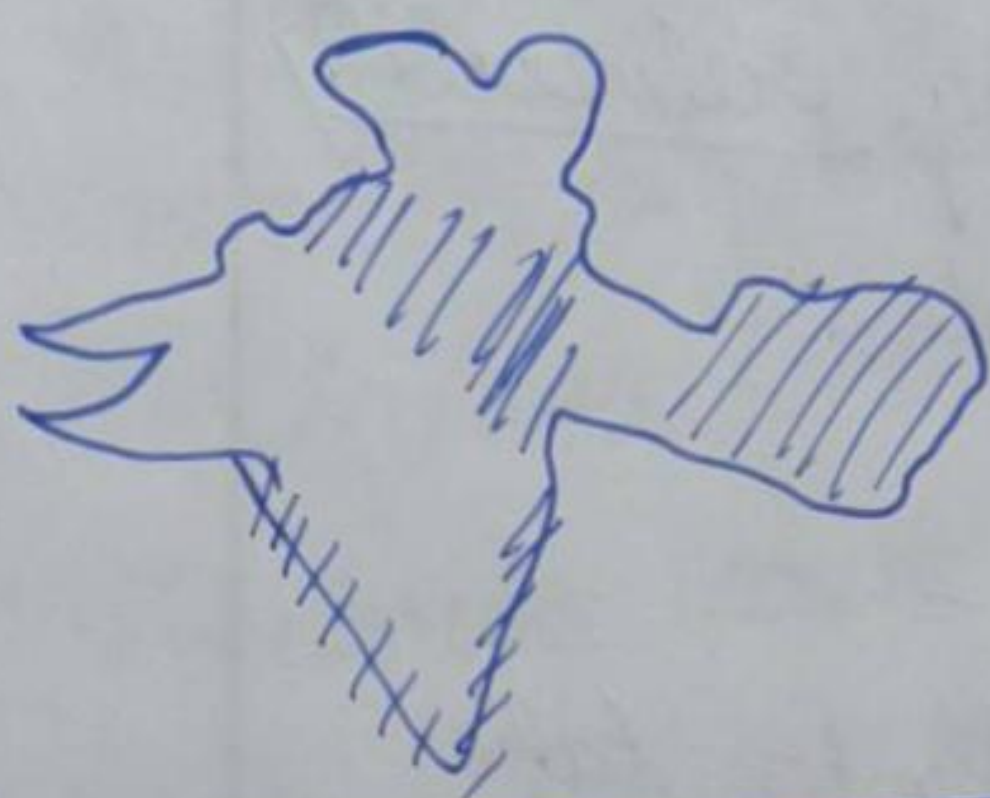


Fig: High vulnerable regions

① Rivers overflowing cause floods.

Ex: → Kosi in Bihar  
→ Brahmaputra in NE

② Fast melting → GLOF

Ex: → Chamoli floods.

③ Sea surges cause coastal

States vulnerable. Ex: → Odisha, Kerala, etc.

### Preparedness:

1) NDMA, 2005 has 3-tier model for preparedness

Ex: → 50% of fund for mitigation stage.

2) Mangroves & embankments to ↓ vulnerability.

Ex: → WB ranked low in Climate Vulnerability Index due to risk mitigation.

Adopting Sendai Framework for Disaster Risk Reduction can ensure safety for India.



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 was launched by GoI as a new dawn in defence sector. It utilizes demographic dividend by training & upskilling them.

### Salient Features

- 1) 4 year tour of duty for interested & selected candidates under 21 years of age.
- 2) To receive monthly income and amount of ₹ 12 lakh at the end of 4 years.
- 3) 25% to be retained and permanently employed.
- 4) Rest 75% to get a degree and preference in other services like police, CAPF jobs, etc.
- 5) Ex-Servicemen Department to take care of their needs.



### Benefits of scheme -

- 1) Will put nationalism over regional identity  $\Rightarrow$  Tackle communalism
- 2) Will reduce average age of forces from current 32 to 27 years  
 $\Rightarrow$  More prepared for war.
- 3) Will properly utilize workforce of India and direct them correctly.  
 $\Rightarrow$  Reduces social ills by inculcating discipline in youth

### Overcoming challenges -

- 1) Providing degrees after completion of course.
- 2) Integrating it with UGC and Credit system to ensure their employability.
- 3) Planning courses to upskill them for various fields and sectors (ex: automobile, sports, technology, etc.)

GroI has taken a right step in addressing unemployment in the nation.

#### Feedback

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Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



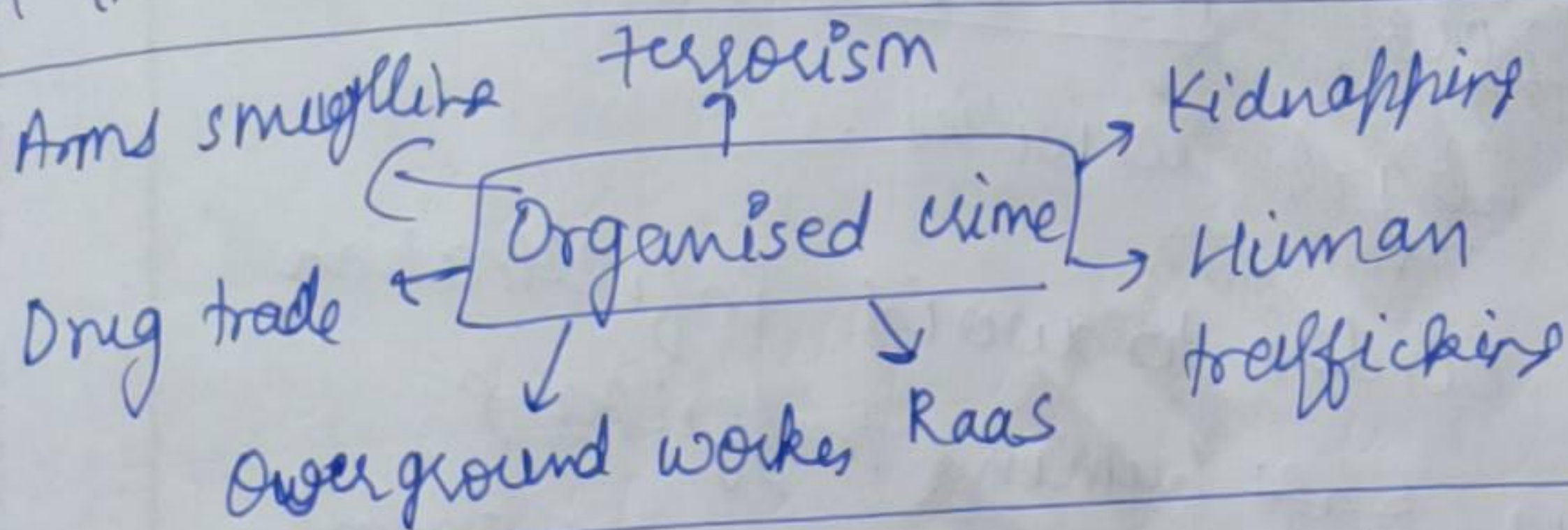
Q.10) Examine how advancements in technology has allowed organize crime syndicates to not only expand but also diversify their activities. Also recommend suitable measures to tackle the menace of organized crime.

(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)

Organised crime is a varied type of activities with use of gangs specialised in it.



Advancement in technology allowed

expand & diversify—

1) Online extremism — Radicalisation

through social media.

2) Online trading through deep web and

Cryptocurrency => Untraceable.

3) Pake name & accounts to lax their operations with hidden identity.



4) Cyber crimes and money scandals  
→ diversification due to technology.

Tackling menace of organised crime -

1) National security guard and NSA  
to check on organised crime.

3) PM LA, 2003, NSA, 2000 and UAPA, 1967  
to stop illegal activities.

3) Checking borders to avoid infiltration  
and drug, ~~traff~~ human trafficking.

Ex: → BSF Operation 'Sand Desert Storm'

4) Awareness and educating masses of  
ongoing organised crimes.

Ex: → WB schools have complain boxes to  
tackle women trafficking

Thus organised crime should be  
organisedly tackled to check illegal  
activities that negate 'human cost' to  
achieve their aims.

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



Q.11) Achievement of a 400 billion USD merchandise export is a result of concerted and collective efforts towards an Atmanirbhar Bharat. Identify various factors responsible for this feat. What measures will you suggest to place India at the centre of global supply chains? (15 marks, 250 words)

400 बिलियन अमरीकी डालर के व्यापारिक निर्यात की उपलब्धि एक आत्मनिर्भर भारत की दिशा में ठोस और सामूहिक प्रयासों का परिणाम है। इस उपलब्धि के लिए जिम्मेदार विभिन्न कारकों की पहचान करें। भारत को वैश्विक आपूर्ति श्रृंखलाओं के केंद्र में रखने के लिए आप क्या उपाय सुझाएंगे? (15 अंक, 250 शब्द)

India for the first time achieved \$400bn merchandise export, highlighting the growth of its manufacturing sector.

[Ex:] → negative current account deficit in 2020-21 due to strong exports.

[Factors] for this feat -

1. 'Make in India' program and facilitating Indian manufacturers.

[Ex:] → Ease of doing business through digital revolution (E-Way bills, postal, etc)

2. Production Linked Incentive to subsidize positive outputs.

[Ex:] → Including 15 sectors in PLI to make India as manufacturing hub.

3. Strong pharmaceutical sector and soaring demand among pandemic



Ex: → Jan Aushadi Kendras, generic medicines and ~~exports~~ trade agreements.

4. To make Atmanirbhar Bharat various stimulus packages were provided.

Ex: → 1) Increase moratorium for firms.  
2) Loans without collateral among pandemic

5. To boost startup culture and promote manufacturing

Ex: → Putting SHGs, startups in PSI for easy credit

→ 'Vocal for local' to reduce imports.

6. Using local speciality to showcase Indian craft.

Ex: GI tags : highlighting products of Incredible India.

7. Schemes like Merchandise Export input Credits on GST.



Measures to keep India at the centre of global supply chain -

1. Reduce redtapism, regulatory cholestrol & ensure EODB.

Ex: → E-Pace scheme in Budget 2021-22

2. Facilitating GIFT Centre, SEZ and checking their misuse.

Ex: → Economic survey highlighted the misuse 'dwarfing of companies' to claim benefits.

3. Better formalization of jobs.

Ex: → Easy recruitment and competition for greater outputs.

4. Consistency in policies to attract FDIs and MNCs to India.

Ex: → Attacks on Chennai plant of Apple

Thus India needs to provide a readymade infrastructure and skilled workforce (China model) added with social security nets to become centre of supply chain

## Feedback

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Structure/ Presentation
Question Interpretation
Content
Value Addition
Total





Q.12) Fintech is facilitating financial inclusions through innovations, but reaping its developmental potential requires overcoming critical hurdles. Analyze.  
(15 marks, 250 words)

फिनटेक नवाचारों के माध्यम से वित्तीय समावेशन की सुविधा प्रदान कर रहा है, लेकिन इसकी विकास क्षमता का लाभ उठाने के लिए महत्वपूर्ण बाधाओं को दूर करने की आवश्यकता है। विश्लेषण कीजिए।  
(15 अंक, 250 शब्द)

→ Fintech are mushrooming firms that combine finance with technology to provide world class services and facilitate financial inclusion.

Ex: → Neobanks  
→ Apps like YONO, SBI Buddy, etc.

Financial inclusion through Fintechs -

1. Online banking for tech-savvy youths.

Ex: Cred App by HDFC credit cards for motivating online transactions.

2. NPCI based apps

Ex: → Fast Pay at tolls to avoid them at traffic bottlenecks

→ AePS (Aadhaar based payments) for people lacking mobile

→ RBI 123 for people not having smart phones.



3. Jan Dhan Accounts and RuPay card has made finance available to all.

[Ex:] → Bank Mitras to facilitate transaction.

4. Budget 2021-22 announced setting up 75 Digital Banking Units in 75 districts.

[Ex:] Finance inclusion of each and every district in its further phases.

However, ~~reaping~~ reaping benefits requires overcoming hurdles like -

1. Digital divide - (a) Rural - Urban  
(b) North - South  
(c) male - female

to ensure inclusive financial inclusion.

2. Financial awareness - Teaching people about recent technologies & developing their trust.

3. Checking financial scams -

[Ex:] → Cryptocurrency makes transaction non-traceable challenge security.



#### 4. Checking cyber security systems -

Ex: → Scam calls, hacking devices and fake loan - gives steal people of their hard earned money.

Thus, need to rebuild trust & ensure financial inclusion -

- 1) RBI to form digital central currency to check cryptocurrency overuse & use blockchain technology -
- 2) C-DOT and other organisations like NIC to check on scams.
- 3) Regulating fintechs and raising awareness to highlight fake & ethical fintechs.
- 4) Making online transactions available across India Ex: PM-WANI coupled with RBI, NPCI efforts

Fintechs form the future of finance in world. Proper regulation & awareness is essential to utilize their potential.



Q.13) The fundamental problem in agriculture is not the availability of resources, but their inefficient use. Comment.

(15 marks, 250 words)

कृषि में मूलभूत समस्या संसाधनों की उपलब्धता नहीं, बल्कि उनका अकुशल उपयोग है। टिप्पणी कीजिए।

(15 अंक, 250 शब्द)

Agriculture sector employs more than 50% of workforce but contributes only 18% of GDP. Thus, there are some fundamental problems in agriculture in India.

Problems:

1. Lack of awareness among farmers regarding seasonal changes in climate crisis, climate forecasts and prevalent insurance schemes.

2. 85% of farmers are small and marginal → sustenance agriculture rather commercial.

3. MSP system has increased production of wheat & rice, reducing their prices.

(Ex.) → Lack of horticulture due to no MSP ⇒ soaring prices

4. Inefficient use of resources —

4.1. Concessive use of fertilizers : NPK



Subsidy has changed the soil profile from ideal 4:2:1 to 8:4:1 in India.

⇒ Less than optimum production

4.2. Excessive irrigation in Green Revolution

State due to canal system.

⇒ Salinisation of soil,  
degradation of soil,  
groundwater depletion by growing water  
intensive crops in arid regions.

4.3. Use of poor quality seeds due to lack  
of replacement rate.

⇒ Poor outputs ⇒ low cost for farmers.

4.4. Rainted regions face crop loss due to  
lack of rains.

[Ex:] Kharif crops delayed due to late onset  
of rains in MH ⇒ shortening rabi season

4.5. Undisguised Unemployment due to

greater workforce than required.

⇒ Reduced output per person ⇒ less



efficient.

Way Forward:

1. Green Revolution 2.0 → To boost production in eastern states (Jharkhand, WB, etc).

2. Use of technology to ensure optimum growth.

(Ex: Soil Health Card, Kisan drones, etc.

3. Using agro-ecological zones to plan plantation of crops.

(Ex: Millet in arid region

↳ Rice, wheat in river plains (Ganga plains)

4. Shifting to Zero Budget Natural farming (LAP model by 2024)

5. Shifting to organic farming (Likpin model)

Government through subsidies has reduced the issues with availability of resources, but has shifted its avoid overuse by farmers.

By proper awareness, achieving the goal of doubling farmers income is possible.

**Feedback**

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



③ plummenting productivity -

a) Solves the problem of disguised unemployment.

(Ex: → Greater options through livestock

b) Solves the problem of femenisation of

agriculture

→ Increasing livestock - farmers are women

c) Better time utilization to counter

seasonality of agriculture & work load

⇒ Boom and slow periods of agriculture  
can be clubbed with livestock as per  
region.

Thus livestock farming, marine  
food export, can enhance farmers income  
and help in achieving SDG-2 (Zero Hunger)  
Further, Schemes like Shapahari and  
Organisations like APEDA & MPEDA are  
working in this direction.

Feedba  
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Structure/  
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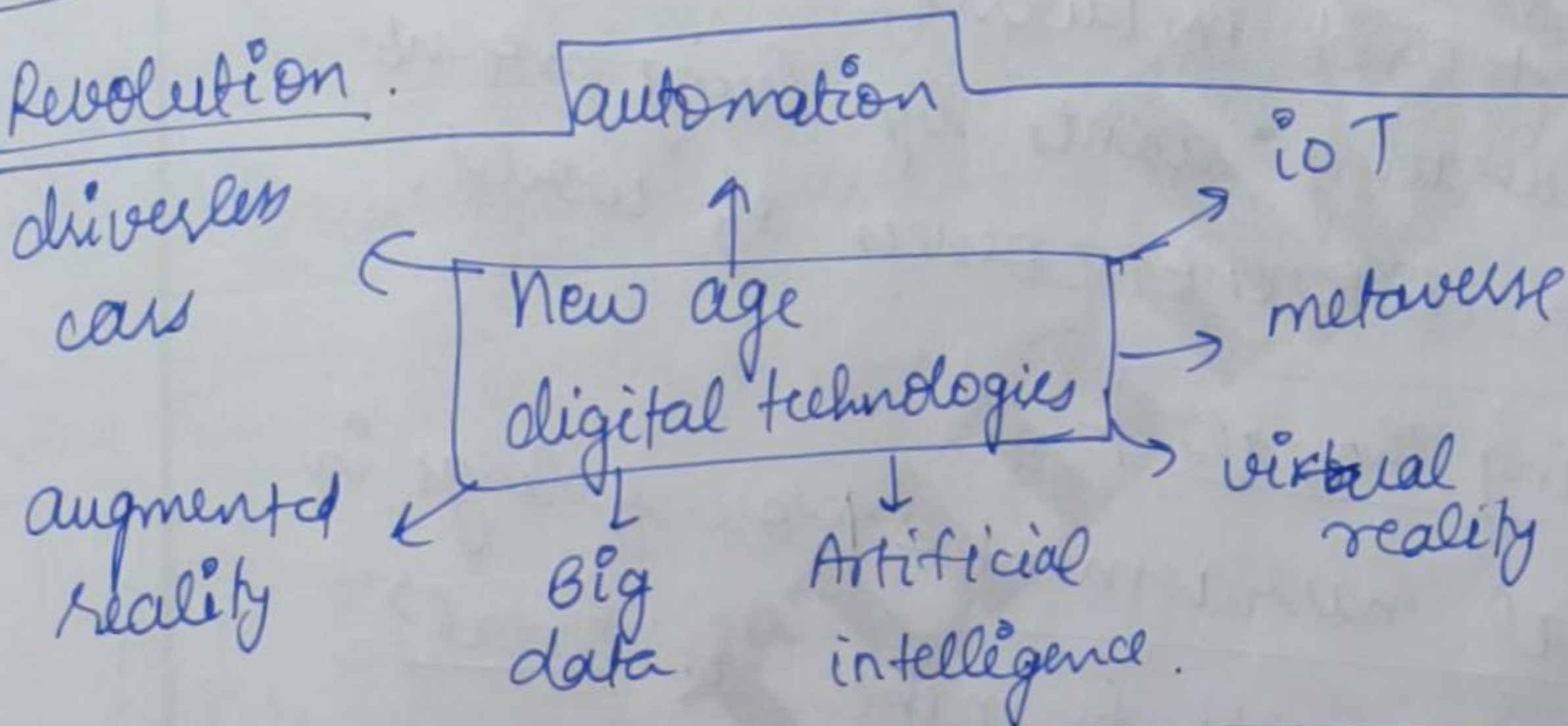
Q.15) New age digital technologies are creating disruptions that open fascinating opportunities and pose frightening threats. Give an account of how digital disruptive technologies are changing our lives.

(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 use the ICT and shape the IV Industrial Revolution.



Creating Opportunities:-

1. Make life easier through automation & AI

Ex:- Alena and driverless cars (Uber)

2. New employment opportunities

Ex:- Booming computer science sector

↳ Greater robotics-related search.



3. Development of humanoids to replace man in dangerous areas.

Ex: → Vyommitra for testing Gaganyaan mission  
→ Robocoots for cleaning drainage.

4. Feeling closed world through augmented reality and metaverse.

Ex: → Celebrating events by being present from different corners of world.

### Frightening threats

1. Sexual harassment - More feelings in augmented reality to make it 'real'

Ex: → Rape possible in metaverse.

2. Data privacy, deep fakes and social media trials

Ex: → Can harm individual's respect.

3. Cyber security threats like phishing, ransomware, etc.



Ex: Data lost by Dominoes of 18 crore customers in dark web

4. Hacking by agents to stop services of national importance.

Con: Russia hacked Ukraine nuclear plant several times over the years.

5. Unemployment - Robots replacing man can aggravate the current situation.

Way Forward → government laws to move at faster pace than technology

→ Strengthening NCCC, I4C, etc.

→ Upskilling & reskilling Human Resources

→ Cyber volunteers to check cyber threats

→ Regulation & ombudsman mechanisms.

Like ever new opportunities has been and come, new age digital technology

needs proper laws and policies to ensure its opportunity overshadow threats.

**Feedback**

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total





Q.16) 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।

→ Nanotechnology is the science which deals with atoms at the level of 100 nanometers or less in at least one-dimension. (15 अंक, 250 शब्द)

Nanotechnology is interdisciplinary & interconnected science -

1. Applications of nanoparticles are in varied sectors.

[Ex:] → Nano liquid used: Min of agriculture of nanotechnology  
↓  
improves output efficiency  
+ lowers cost

[Ex:] → gold nano particles: Min of chemistry & nanoscience  
↓  
helpful in fighting Cancer

Its revolutionary applications includes:

1. Treating diseases like cancer.



(Ex:1) IISC - Bangalore has created nanotech based bandage that fights cancer cell.

2. For defence technology - Applications is ~~gun-sa~~ bullet-proof materials, light weight clothes for freezing temperatures, etc.

3. For automobile sector - creating light-weight ~~airfs~~ aircraft (LCA Tejas)

4. In agriculture - Creating nano fertilizers and pesticides  $\Rightarrow$  greater efficiency.

(Ex:2) IITD producing nano fertilizers.

5. For fighting climate change - Can filter PM 2.5 particles thus combating pollutants.

Relevance for socio-economic development -



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## **Feedback** (For OFFICE use)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



Q.17) 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)

Groundwater is the hidden resource that is being over-exploited in India. Over 80% of rural water needs and 50% urban water needs are obtained through groundwater.

- ⇒ Depleting water table
- ⇒ Drought vulnerability ↑
- ⇒ Over-rise of salty water & ↓ of freshwater
- ⇒ Aquifers can dry & be lost forever.

Making groundwater visible means -

- 1) Monitoring its use and present condition.
- 2) Drawing maps based on change in level over time.
- 3) Showing dried aquifers highlighting potential hazards.
- 4) Educating citizens of their actions by visible diagrammatic representation.



Critical for building climate resilience -

1) To fight droughts in arid regions

[Ex:] → Punjab, Rajasthan

2) To fight flash droughts of monsoon

Season (70% occur during monsoons)

[Ex:] → In water-rich regions like Gujarat, Maharashtra.

3) To fight floods - By giving it route to seek through and recharge water table.

[Ex:] → Concretisation leads to urban floods and unables water recharging.

4) To check for inter-generational water justice.

[Ex:] → Keeping their share of water resources by checking over-exploitation.

5) To check forest fires - Water availability ensures tree growth checking fires.



Critical to attain Sustainable Development Goals (SDGs)

1) SDG-14 (Life under water) - Will check unchecked flow in sea  $\Rightarrow$  Regulate life in ocean

- will regulate life in underground streams and health of aquifers.

2) SDG-9 (Climate resilient cities)

3) SDG-15 (Life on Land) - will ensure water for wildlife and people.

4) SDG-3 (Healthy people) - By providing

clean and treated water.

Way forward

$\rightarrow$  By drawing maps using remote sensing satellites.

$\rightarrow$  Making data available to all  
 $\rightarrow$  Water Policy regulating groundwater use (in rural & urban areas)

$\rightarrow$  Awarding best practices

Groundwater is a invisible treasure that needs to be preserved.

**Feedback**

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total





Q.18) 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)







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**Feedback**  
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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 सुभेदताओं का विश्लेषण करें।

(15 अंक, 250 शब्द)

India has 7800 km of maritime border and ~~border~~ share territorial border with Pakistan, China, Bangladesh, Myanmar, Bhutan and Nepal.

Management of maritime border	Management of territorial border
<ol style="list-style-type: none"> <li>1) Use of satellite surveillance and Coast Guards</li> <li>2) Have 120 miles of <u>territorial waters</u> to protect inland</li> <li>3) Shared responsibility of <u>Centre and state</u> to protect coast and its resources.</li> <li>4) INCOIS acts as aid in monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1) Use of check posts, BOLT-AIT in inter-country rivers and <u>Border Security Force</u>.</li> <li>2) 50 km inland border under <u>CAPF</u> control.</li> <li>3) Use of special border forces like - Arzam Rifles, Gorkhas, etc.</li> <li>4) Prominent threats</li> </ol>



5) Prominent threats include terrorist attacks.

Ex: 26/11 Mumbai

6) Use of sheaths, navy and airforce in addition to Coast guards.

Ex: Strategic importance of Andaman & Nicobar

include infiltration, smuggling, drone attacks, human trafficking.

5) Porous borders act as bottlenecks in security

6) Use of paramilitary and tri-services for border security.

Ex: Shekatkar committee and Kargil War Committee recommended Unified task force at northern, eastern & southern borders.

Vulnerabilities that arise from large maritime borders -

1) Freedom of Navigation operations breaching territorial border and safety.

Ex: US entered Indian border.

2) Submerged nuclear power submarines are non-traceable and pose dangers.

Ex: China and Indo-Pacific alliance like



AUKUS pose challenge for Indian safety.

3) Use of neighbours to escape land security and enter through water.

[En:] → Use of small boats from Karachi to Gujarat / Maharashtra to smuggle items or plan attacks.

[En:] → Drug trafficking from golden crescent through maritime border.

4) Natural calamities like floods, sea surges, tsunamis.

[En:] → 2004 tsunami in Bay of Bengal.

5) Trade routes as challenge to Indian security.

[En:] → Strategic position of Andaman Island near Malacca Strait.

Thus, India to ensure its national security needs to check maritime borders. It uses Integrated Service Force, CDS, NSA and Coast Guards with early warning & surveillance systems (RIMES) to ensure safety.

**Feedback**

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

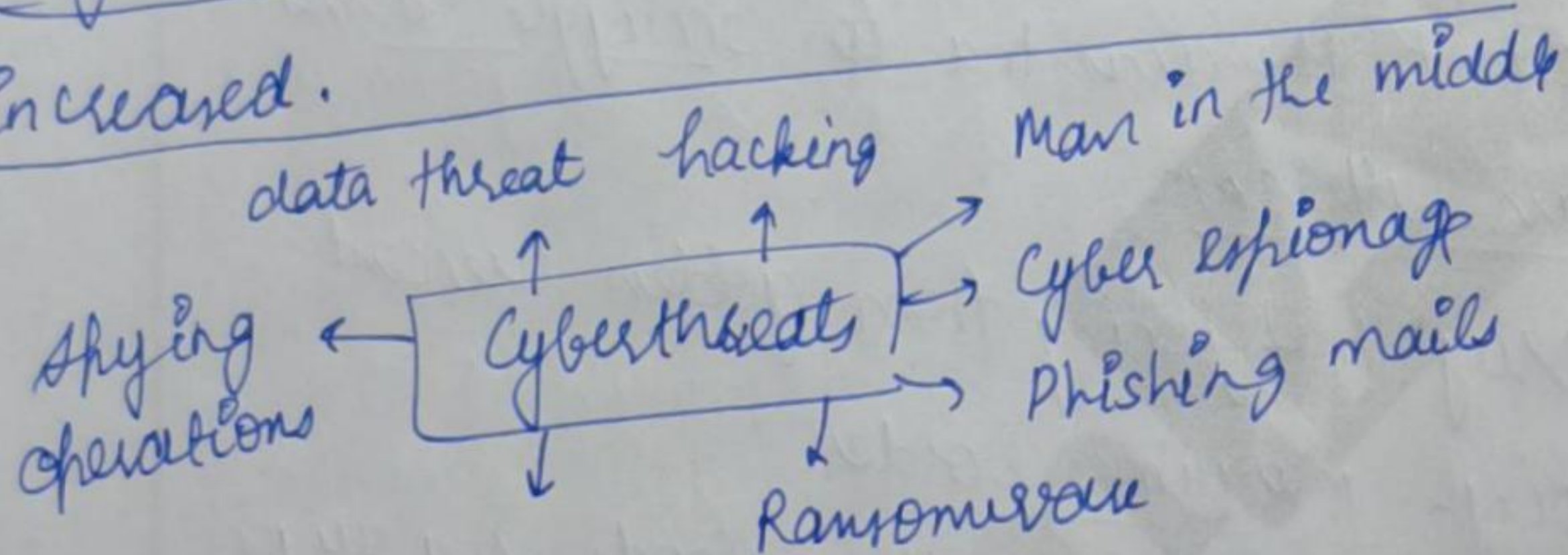




Q.20) Cyberthreats can wage a dual war on the state and citizens, disrupting the national security as well as social stability. Explain. (15 marks, 250 words)

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)

→ With the rise of digital technologies & 'Digital India' mission, cyberthreats have increased.



Cyberthreats can wage dual war

① On State disrupting national security

a) Attack on critical infrastructure

Ex: Maharashtra power system & was attacked (cyber espionage)

→ Nuclear power plant (Kudankulam) was attacked by China & NK based hackers.

b) Data thefts due to imported technologies and equipments.



[En:] → Gulshan Kumar Committee recommended indigenous Equipments

c) Data surveillance and trade by MNCs pose national security threat

[En:] → China based ShadowBon monitored many high profile people in India.

⇒ Can attack them and make country unstable.

d) Targeting critical defence digital data  
⇒ Can track plans of attack & defence

② on citizens disrupting social stability

a) Can breach data privacy

b) Can steal them of their hard earned money

c) Cyber bullying and deep fakes can defame anyone.

d) Spreading disinformation as means to hybrid warfare

⇒ Will lead to erosion of people's trust  
On government ⇒ Reduce social stability.



Further, communal riots due to disinformation and fake accounts  $\Rightarrow$  disrupt peace.

## Way Forward

- $\rightarrow$  Use of cyber volunteers (Delhi model)
- $\rightarrow$  Creating cyber dome (Kerala model) to check radicalisation
- $\rightarrow$  National Critical Infrastructure Coordination Centre to check attacks.
- $\rightarrow$  Use of indigenous equipments  
(Ex: Banning Huawei from 5G auction)  
(Ex: D10 alliance with like minded nations)
- $\rightarrow$  NIC, NCCC, I4C to check cyber threats
- $\rightarrow$  Training youth, police, people and children for awareness to tackle such threat.  
Ex: Fake calls asking OTPs, etc.

Thus, cyber technology while providing various avenues to modernize, digitize India needs to be regulated to ensure growth, social stability & national security.

## Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



### Mentor Feedback Questions

- 1 How to manage time, speed & content?
- 2 Is the content more general than should be?
- 3 Is handwriting legible?
- 4 I tend to make lot of spelling mistakes while  
hurry, does not effect marks?

### Test Goal

- 1 Paper completion  
on Time ☒
- 2 Structure and understanding  
demand of question ☐
- 3 ☐

### Outcomes

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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		

\* Subject to change without prior notice.



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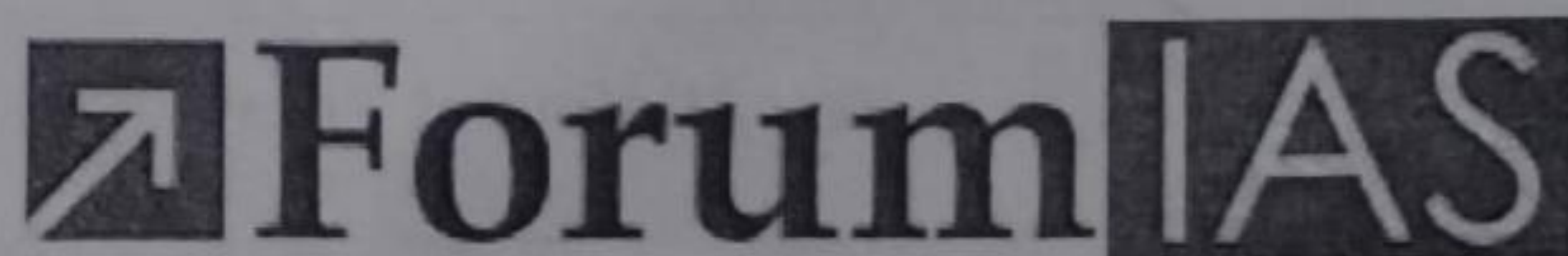
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