

TEST CODE : 5 1 3 3 4

FIAS – MGP 2022 (C-12) – GS Paper #3

ForumIAS

GENERAL STUDIES

Name Of Candidate	AKSHAY PARIHAR		
Roll No.	1910104170	Date:	19/08/2022

Time Allowed: Three Hours

Maximum Marks: 250

INDEX TABLE			INSTRUCTION
Q. No.	Max. Marks	Marks Obtained	1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet.
1			2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory.
2			3. The number of marks carried by a question/part is indicated against it.
3			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.
4			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.
5			
6			
7			
8			
9			
10			
11			
12			Any specific messages for ForumIAS Mentors/Evaluators with respect to your copy? Write it here.
13			
14			
15			
16			
17			
18			
19			
20			
Total:	250		
Evaluator's Discretion:			For Student Only
			Start Time 11:30 am End Time 2:30 pm
Total Marks:			Mode Of Examination: Online ☒ Offline ☐
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.			For Office Use Only
			ECN CODE: EG: Evaluation Date:

138487_51334_1910104170_(2022-08-19 23:56:01)

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						

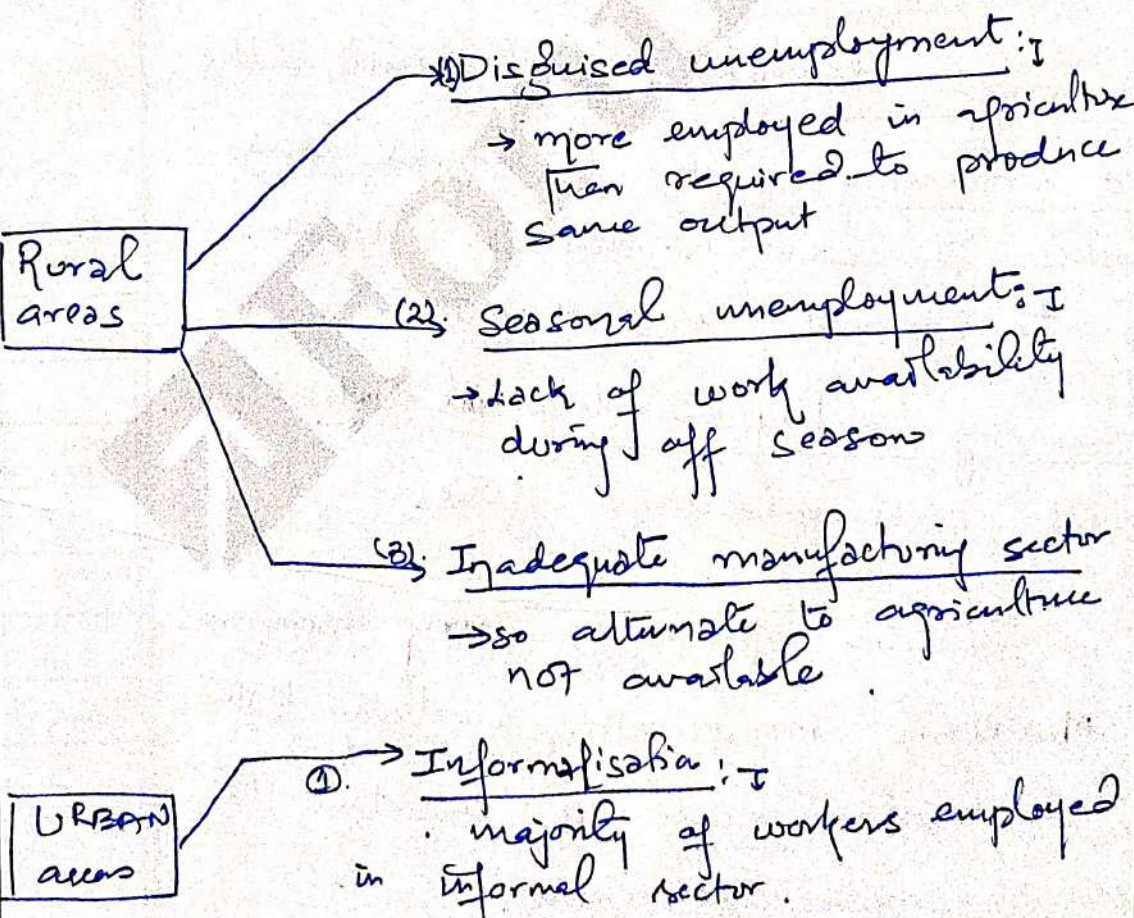
ADDITIONAL REMARKS

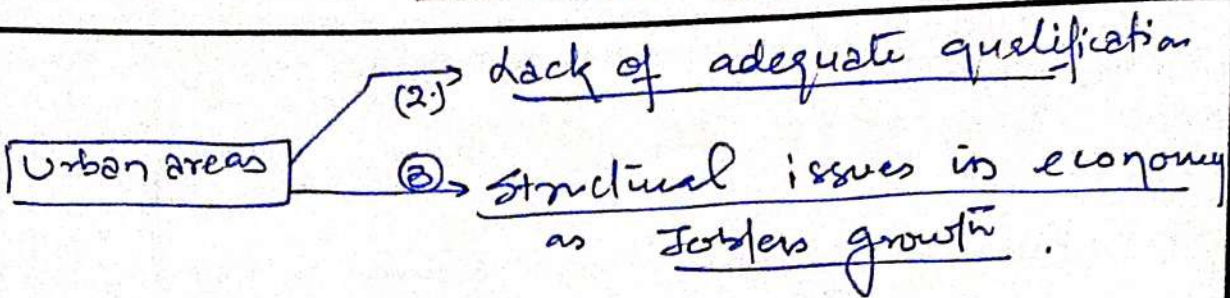
Q.1) Employment problems of rural and urban areas differ in nature, but their solutions are interdependent and interrelated. Analyze. (10 marks, 150 words)

ग्रामीण और शहरी क्षेत्रों की रोजगार समस्याएं प्रकृति में भिन्न हैं, लेकिन उनके समाधान अन्योन्याश्रित और परस्पर संबंधित हैं। विश्लेषण कीजिए। (10 अंक, 160 शब्द)

As per Periodic Labour Force Survey (PLFS), unemployment rate in rural areas for 2020-21 has been 3.3%, while that of urban areas has been 6.7%.

Employment issues of rural and urban areas differ in following ways:-





However, solutions to solve employment issues are inter-related in both sectors as :-

- (1) Increasing employment in manufacturing sector in urban areas ; → will help to solve disguised unemployment in rural areas as well.
- (2) Increasing alternative employment like in food processing sector in rural areas will also decrease burden on urban areas to provide employment.
- (3) Increasing entrepreneurship at district level will create additional jobs.

Thus, a holistic planning using measures like MGNREGA, PMKVY etc., involving both rural and urban areas is important to address unemployment issues.

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 पुनर्वहाली की चुनौतियों को बढ़ा रही है। चर्चा कीजिए। (10 अंक, 150 शब्द)

COVID-19 pandemic related restrictions led to negative growth of -7.3% in 2020-21. However, economy is recovering well after that with estimated growth rate of 9% in 2021-22.

Imported inflation is the rise in prices of goods in the domestic market because of costly imported products. It is occurring because of high crude oil prices, raised prices of palm oil, sunflower oil etc.

It is enhancing the challenges of post-pandemic recovery in following ways:-

(1) Raised crude oil prices →

- hovering at around \$110 per barrel.
- This raises the prices of other goods in economy.

(2). Raised vegetable oil prices →

2.1 → India imports palm oil from Indonesia, which banned export due to global uncertainties. It led to rise in prices.

2.2 → Rise in sunflower oil prices due to Russia-Ukraine war.

(3).

India was recovering well after COVID-19 showing V-shaped economic recovery.

However Russia-Ukraine war, China-USA trade war etc. has led to rise in prices of goods across world which is challenging for India too.

Feedback

(For OFFICE use only)

Structure/ Presentation	
Question Interpretation	
Content	
Value Addition	
Total	

Q.3) What do you understand by natural farming? How can it help in building climate resilient agriculture? (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)

Natural farming is a farming practice in which no chemical fertilisers, insecticides, hybrid seeds etc. are used and soil is mostly left undisturbed. One of the techniques includes ZBNF (Zero Budget Natural Farming).

Natural farming can help in building climate resilient agriculture in following ways: →

① Reduced land degradation: →

- No use of chemical fertilisers, which alters soil nutritional composition

② prevents water over-use and pollution: →

- 2.1) Decreased run-off of fertilisers into water.

2.2) water requirement are less in Natural farming.

③ It makes the best use of locally available known methods for agricultural growth, using methods like intercropping, biofertilisers, mixed cropping etc. It prevents soil degradation and makes it resilient to climate change.

Agricultural activities are both cause as well as affect of climate change.

Natural farming will not only make agriculture climate resilient, but will also reduce carbon footprint of agriculture. This will help India in achieving its NDC's to Paris summit.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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)

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

Food processing sector is a sunrise sector in India. It involves value addition to agricultural produce.

At present, it constitutes around 10-12% of India's export basket.

Food processing sector's development in the country is beneficial not only for agriculture but other sectors also in following ways : →

(1). Provide Employment opportunities : →

- address the disguised unemployment in rural areas.

(2). Strengthening of FPO's and SHG's : →

- as they can play an important role in establishing food processing units.

(3) Addressing malnutrition :—

- as adequate nutritional quality of processed foods can be enhanced, thus tackling hidden hunger (micronutrient deficiency) as well.

(4) Diversifying India's Export basket :—

- will increase India's exports, thus helping in lowering CAD.

(5)

Food processing sector is thus very important in India's economy. Schemes like Mega Food Parks, scheme for formalisation of Micro food Enterprises etc. need to be properly implemented to develop food processing industry in India.

Feedback

(For OFFICE use only)

Structure/ Presentation	
Question Interpretation	
Content	
Value Addition	
Total	

Q.5) 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 includes various technologies based on deployment of Satellites into space. It includes navigation technologies (NAVIC, GPS etc.), remote sensing, communication etc.

They help in monitoring development as:-

(1) Checking for proper construction of infrastructure like roads, houses using GPS/GIS technologies. Example, geotagging of houses constructed under PMAY.

(2) Remote sensing satellites helps in monitoring of adequate use of resources on ground.

It enhances development as :- →

①. Satellite based data helps in urban planning and development.

② Satellite based internet (ex. starlink project of Elon Musk) will help in developing & faster internet and communication services.

③ It will help in development of space based industry thus enhancing employment.

④ It will enhance research and development in the country.

India is enhancing its space based capabilities. It is ~~very~~ ^{so} important for the development of the country.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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)

इंधन 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)

Climate change and rising carbon footprint has led countries to adopt alternative technologies in transport sector.

Fuel cell electric vehicle (FCEV) differs from battery electric vehicle (BEV) in following ways :-

FCEV

(1) Based on electrochemical fuel cells.

(2) Can be rapidly refuelled.

(3) High energy storage.

(4)

BEV

Based on mainly Lithium based batteries.

Requires charging infrastructure.

Lower energy storage.

Advantages of Electric vehicles

- Low emission of CO_2 and other gases.
- Reduce import of oil, thus reducing CAD.
- Energy efficient
- Requires lower maintenance.

Measures of accelerating e-mobility in India:-

- ① FAME-II :- (Foster Adaption and Manufacturing of Hybrid and Electric vehicles)
• needs to be properly implement.
- ② National e-mobility project :- to increase construction of batteries in India.
- ③ providing adequate charging infrastructure
• by engaging with DISCOM's.
- ④ Collaboration with countries like Bolivia
- for extracting and making available Lithium.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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 আলोक में इस कथन की चर्चा कीजिए। (10 अंक, 150 शब्द)

In his address to Cop 26 at Glasgow, PM Narendra Modi, in addition to mentioning of Panchratna's, also advocated for LiFE movement.

The world is facing climate crisis. It is nearly impossible to limit global temperature rise to 1.5°C by the end of this century. Sustainable consumption and production patterns are most to control climate change. However, they can't be adopted unless fundamental changes are brought in our lifestyle in following ways : —

(1) Reducing electricity consumption:

1.1. by switching off fans and lights when not in room.

(2) Reducing water wastage:

2.1 by using bucket and mug for bathing rather than shower.

2.2. using kitchen water for gardening etc.

(3) Reducing food wastage(4) promoting sustainable consumption:

4.1. using products from companies which using climate friendly practices.

As per a report of UNEP, if 80% of global population follows climate sensitive practices in daily lives, climate change can be brought to halt. Thus LIFE improvement can prove a breakthrough to tackle this issue.

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)

कम्बोज के बलान 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)

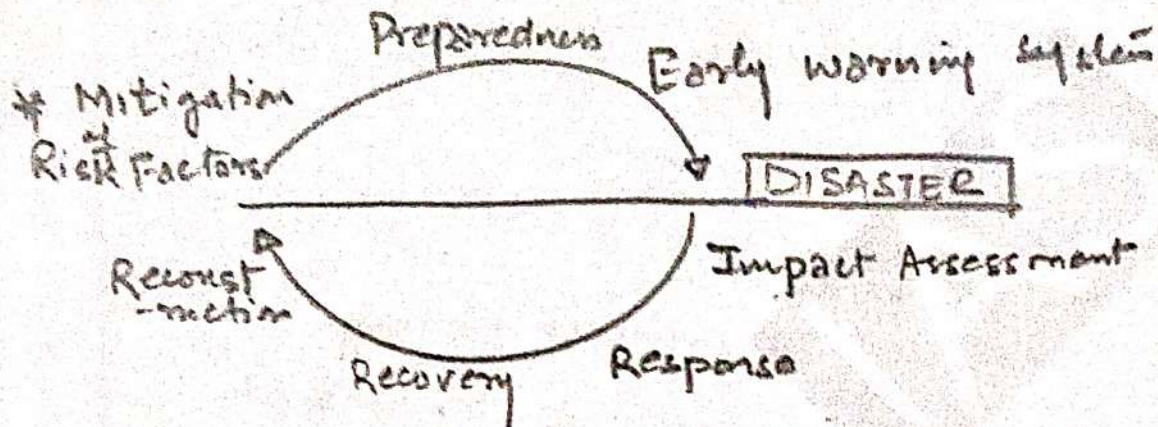
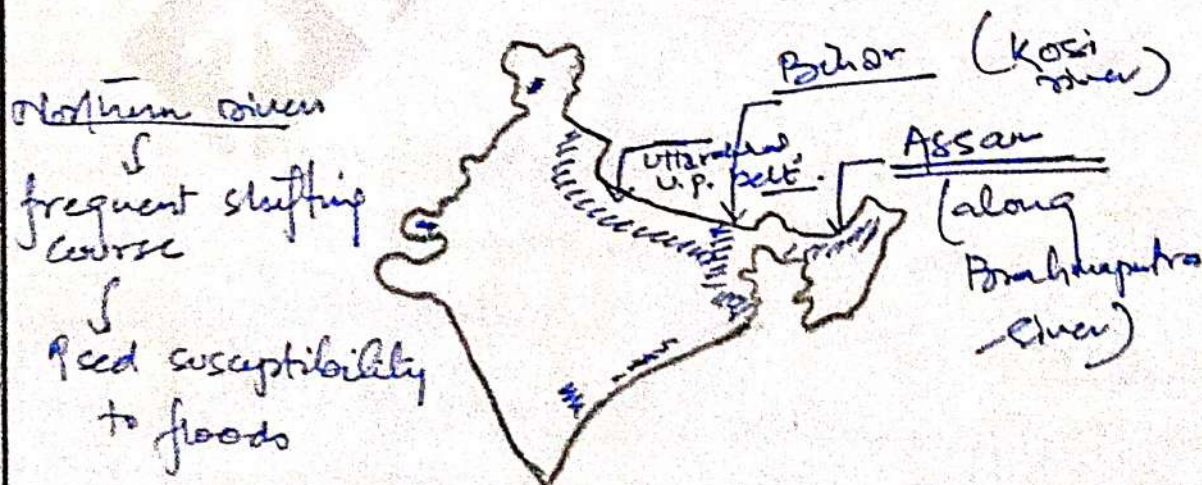


Fig. DISASTER MANAGEMENT CYCLE

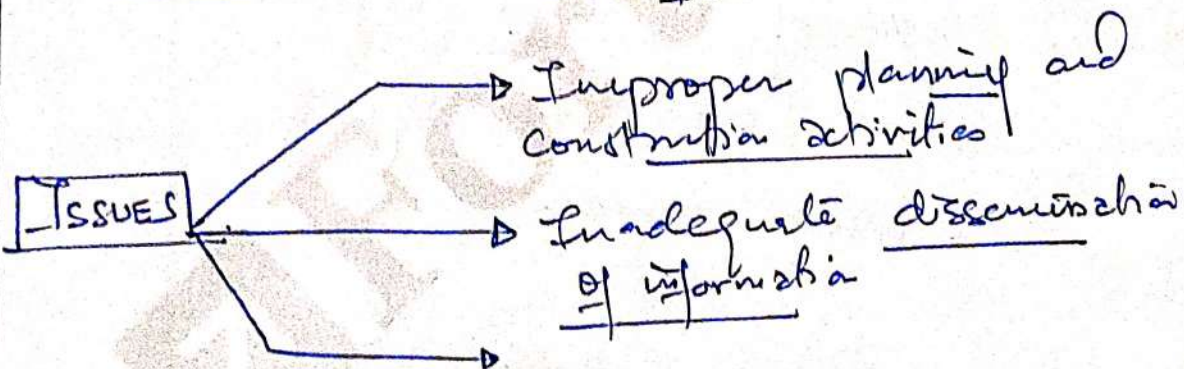
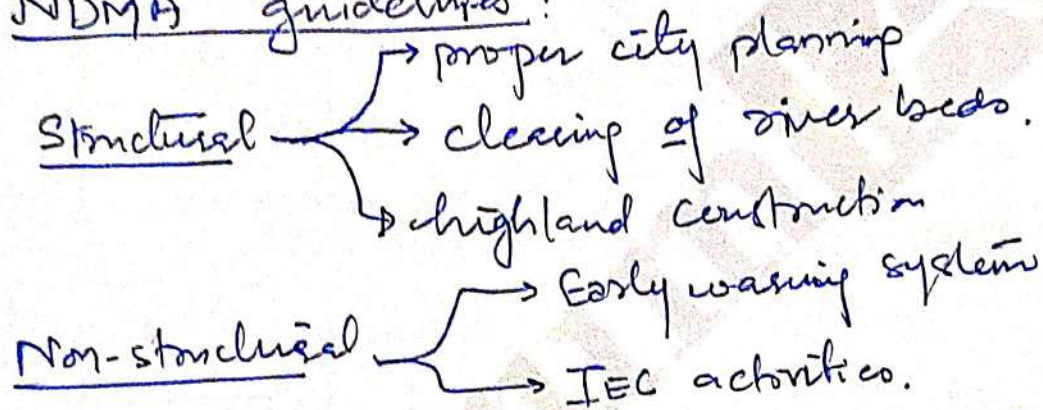
In India, 12% of the land is prone to floods. Floods are particularly of prevalence in monsoon season.



Preparedness for Flood Management in India.

- (1) Establishment of Rashtriya Barh Ayog.
- (2) Formation of IFLOWS for urban flooding in cities like Chennai.

(3) NDMA guidelines:



Floods are continuing to cause serious impact in India as seen in recent Assam floods. It is thus important to strengthen our capabilities to mitigate risk factors for disaster management.

Feedback

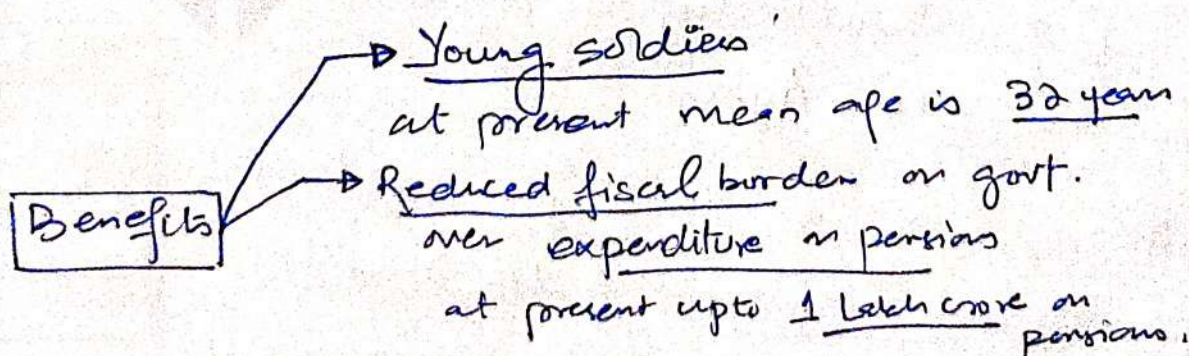
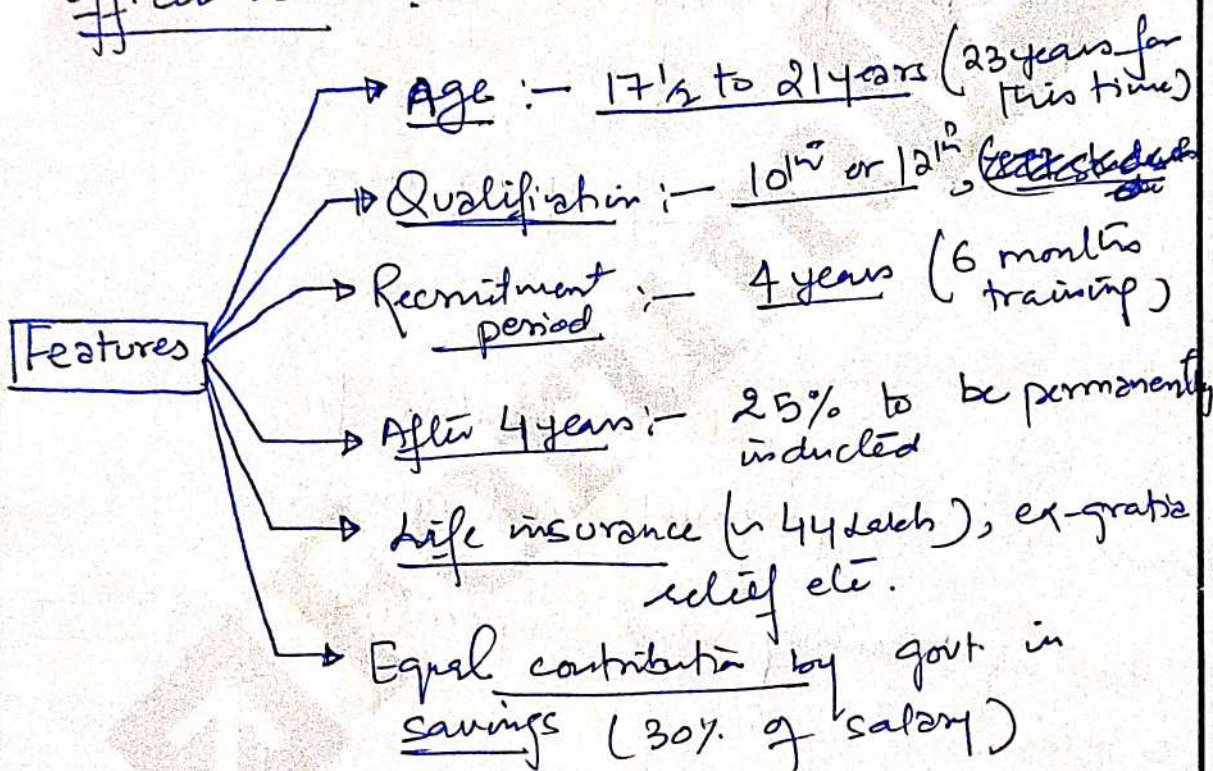
(For OFFICE use only)

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 तरीके का उल्लेख करें। (10 अंक, 150 शब्द)

Government of India recently started Agnipath scheme to recruit Agniveers into defense services for soldiers below officer rank.



Benefits

→ creation of nationalised youth who will be an asset to society

Challenges

- Employability issue of 75% of Agniveers who will be evicted after 4 years
- Issue of repinmental loyalty (as it will create All India outburst)
- Capability to handle challenges of war etc. in such a short period.
- Education of young agniveers

Ways to overcome challenges:

- (1). By providing adequate reservation for Agniveers in employment and education
- (2). By proper training and capacity building of soldiers.
- (3). By proper handling of Agniveers who are evicted after 4 years.

Agnipath scheme is thus an important step for defence reforms in India. It is in line with defence requirement in USA, Israel etc.

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)

Organised crime involves enterprises which are engaged in criminal activities like smuggling, trafficking, money laundering etc. with an objective of gaining profit.

Advancements in technologies have helped organize crime syndicates in following ways: →

(1) Cryptocurrency : →

1.1) crime syndicates demanding money in the form of cryptocurrency which are difficult to trace by law enforcement agencies.

1.2) Easy to fund terrorism and other crimes.

(2) Dark web:-

2.1) Used by organised crime networks to smuggle/sell drugs, arms etc.

(3) Drone technology:-

used to transport drugs and arms as seen in Jammu along Indo-Pak borders.

(4) Increased digitalisation:-

- Enhanced cyber hacking.

MEASURES to tackle organised crimes →

(1) Strengthening of institutions ex. ED for Money Laundering.

(2) Making a comprehensive legislation covering different dimensions of advanced technologies.

(3) Strengthening our cyber sphere via. NCIIPC, Cyber Suochit Kendras etc.

Active cooperation among different stakeholders and central and state govt. is must to tackle the issue of organised crime.

Feedback

(For OFFICE use only)

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 recently achieved the target of \$400 billion merchandise exports. The goal

has been achieved in the backdrop of Atmanirbhar Bharat which has been started as an initiative to build self-reliant India ^{after} ~~post~~ COVID-19 pandemic.

Factors responsible for 400 billion USD export :-

(1) Adequate and cheap labor and resources :-

1.1) enhances the potential of production in the country.

(2) Production Linked Incentive (PLI) scheme :-

2.1) announced in various sectors like pharmaceuticals, white goods etc.

2.2) It enhanced production of in India.

(3) Declining rupee:-

Rupee has depreciated significantly compared to dollar reaching near 80 mark ($1\$ = ₹80$). It makes exports more competitive in international market.

(4) Economic partnerships:-

- 4.1) helped in enhancing bilateral trade
- 4.2) ex. recent signing of Comprehensive Economic partnership agreement with UAE.

(5) Incentivising exports:-

- 5.2) via Special Economic Zones. with tax rebates
- 5.3) input tax credit to exporters.

(6) By increasing partnership in GVC:-

via platforms like Supply Chain Resilience Initiative.

(7) Decreased trust on China :-

7.1.) has p made India as a replacement / alternative to China for assembly of products.

In order to be at the centre of Global supply Chain, following measures can be taken :- →

(1) Enhancing Ease of doing business by

- 1.1) easy starting of business.
- 1.2) proper contract enforcement.

(2) Decreasing Logistics Cost :-

- 2.1) at present 12-14% of GDP which is very high.

(3) By strengthening economies of scale

- 3.1) by establishing large enterprises

(4) Correcting inverted duty structure

India, now has an important opportunity to integrate itself into Global Value Chains. ~~As~~ per Economic Survey, Assemble in India for world will create additional jobs of 4 million upto 2025.

Feedback

(For OFFICE use only)

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 including initiatives like UPI etc. have helped in enhancing financial inclusion in the country. Number of transactions via UPI has increased over manifold in past few years.

Fintech has facilitated financial inclusion in following ways:-

(1) NPCI's UPI platform :-

- 1.1) has helped in promoting cashless economy.
- 1.2) increased usage of UPI associated with increased opening of bank accounts to avail the services, thus enhancing financial inclusion.

(2) e-Rupi : →

2.1) as a prepaid token for specific activity. It has helped in strengthening financial inclusion.

(3) Aadhar linking / AEPS (Aadhar Enabled payment system)

(4) Pension and insurance schemes are made easily accessible online.

CRITICAL HURDLES associated with Fintech : →

(1) Issue of cyber frauds → leading to loss of hard earned money to scammers.

(2) Lack of digital infrastructure in rural regions.

(3) Digital illiteracy.

(4) provision of internet services.

(5) Issue of inter-operability among different platforms.

In order to utilise its full potentials, the above challenges need to be addressed. Government initiatives

like establishment of Common Service Centres, Bharat net programme,

Jan Dhan Yojana are playing an important role in it. JAM (Jan Dhan, Aadhar and Mobile) Trinity has helped in deepening financial inclusion in the country.

Feedback

(For OFFICE use only)

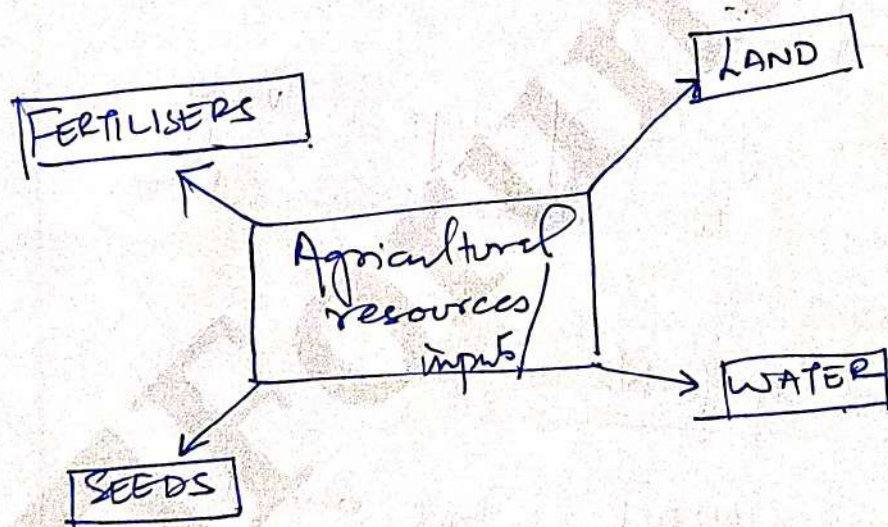
Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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)

India accounts for 17% of global population and has 4% of world area. Agriculture in India employs around 50% population and contributes to 17% of GVA in the economy.



India's rising population has put a strain on resources. However, they are still sufficient if efficiently use.

Inefficient use of resources is a fundamental issue in agriculture in following ways:-

(1) Water requirement:-→

1.1) For producing 1 kg of paddy, India uses average 3500 L of water, whereas in China it is only 350 litre.

(2) productivity:-→

2.1) per hectare yield of crops is very low compared to countries like China.

(3) Inefficient use of fertilisers:-→

Ideal N:P:K is 4:2:1; but due to irrational use, the average ratio of N:P:K in Indian soils is 8:3:1.

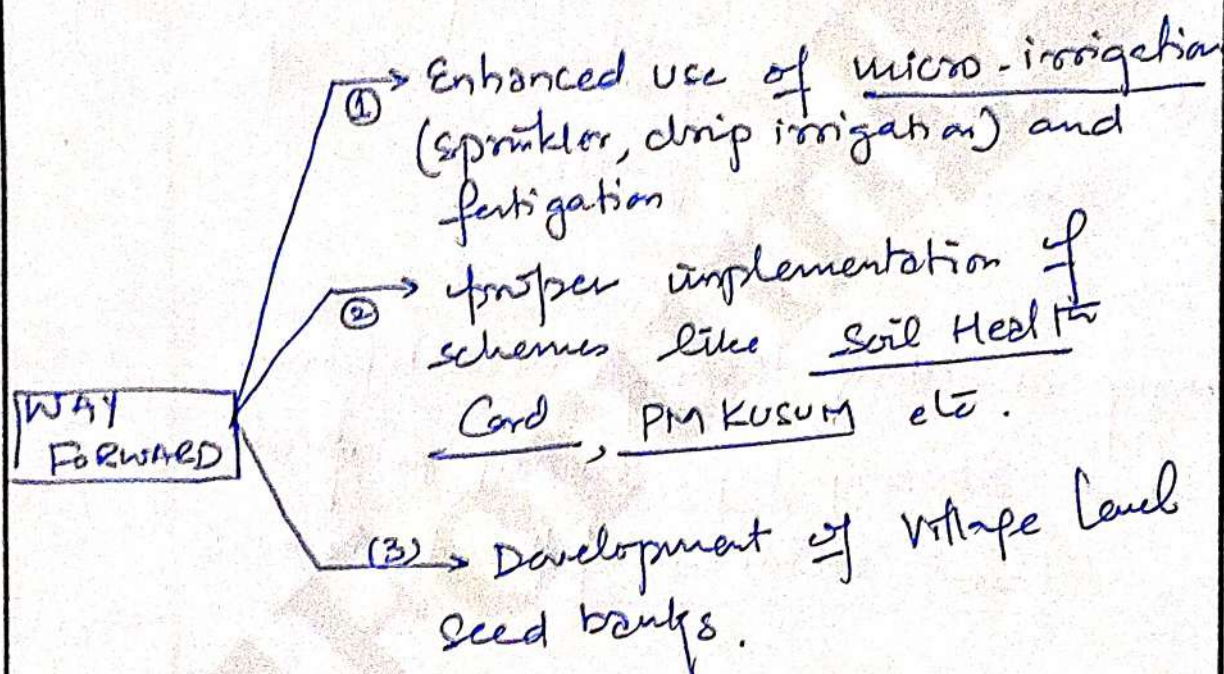
(4) Inefficient water usage:-

4.1) Irrigation mostly in form of canal

and tube wells. A lot of water is wasted in irrigating whole fields.

(5) Usage of seeds:-

5.1) Very low seed replacement rate.
 So low productivity/yield.



Sustainable agriculture, which ensures proper utilisation of available resources is thus need of hour for proper agricultural growth as well as addressing climate change threat to agriculture.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total



Q.14) Encouraging livestock through mixed farming can be the answer to the triple burden of low farm income, increasing land fragmentation and plummeting productivity in the agriculture sector. Discuss.

(15 marks, 250 words)

निम्नलिखित खेती के माध्यम से पशुधन को प्रोत्साहित करना कृषि क्षेत्र में कम कृषि आय, भूमि विखंडन में वृद्धि और उत्पादकता में गिरावट के तिहरे बोझ का जवाब हो सकता है। चर्चा कीजिए।

(15 अंक, 250 शब्द)

Mixed farming involves both growing of crops and raising of livestock.

Livestocks account for about 30% of agricultural GVA. It is growing at around an annual compounded rate of 8-9% from past few years.

Encouraging livestock through mixed farming can help in alleviating triple burden in agricultural sector in following ways:-

(1) Enhancing Farm Income:- →

1.1) Dairy farming and poultry farming provides an additional source of income.

1.2) They can be reared whole year, so constant / assured source of income.

(2) Addressing Land Fragmentation →

2.1) Land fragmentation decreases agricultural output. Livestocks are not space consuming, thus can be reared in small areas, providing sustainable livelihood.

(3) Alleviating plummeting productivity →

3.1) By providing biomanures for agricultural fields, which will enhance productivity.

3.2) By providing additional income, which can be used to buy agricultural inputs to enhance productivity.

Mixed farming can thus play an important role in agriculture sector. Ashok Dalwai committee has recommended incorporation of mixed farming to double farmer's income.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

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)

Emerging technologies like Artificial Intelligence (AI), blockchain, robotics, drones, machine learning etc. are creating widespread opportunities as well as challenges/threats for this world.

Advantages of New age digital technologies

(1) AGRICULTURE :-

- 1.1) → use of drones for spraying pesticides
- 1.2) → use of AI as tool to predict crop productivity, use of fertilisers etc.
- 1.3) → use of remote sensing to assess soil nutrient content.

(2) HEALTH : →

- 2.1) → surgery via robotics
- 2.2) → nanomaterials used for drug delivery inside body.
- 2.3) → use of AI and sensors for early detection of cancers.

(3) FINANCE : →

- 3.1) use of blockchain technology to store financial data.
- 3.2) use of AI and predictive analytics to detect any frauds.

(4) SURVEILLANCE : →

- 4.1) using drones to prevent crimes
- 4.2) facial recognition technology to identify criminals etc.

Threats of advancing technologies

- (1) Potential of AI to replace human population
- (2) Issue of accountability associated with use of technology.
- (3) Data security and privacy & may get compromised by hackers.
- (4) Increased monopolisation by few corporations.
- (5) Limited socialisation as everything available online.

~~Science is neither boon, nor bane~~
 Science can be both boon or bane.
 It depends on humans how they use the advancing technologies, whether they will prove to be a boon or bane.

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।

(15 अंक, 250 शब्द)

Nanotechnology is the branch of science dealing with nanomaterials i.e. substances which are of size 1-100 nm in one of its dimensions.

Nanomaterials have unique optical, thermal and other properties which enhanced their application in various sectors.

Nanotechnology can play a role in socio-economic development in following ways :-

① HEALTH sector :-

- 1.1) use of carbon nanomaterials to create stents.
- 1.2) precision drug delivery in body.
- 1.3) use in clothing to make it Corio-19 protective.

② ELECTRONICS :

2.1) In the manufacturing of chips,
screens etc. of mobile, laptops.

③ 2.2) increasing use of carbon nanotubes.

③ APPAREL :—

3.1) In technical textiles, → manufacturing
of light weight bullet proof jackets.

④ In Food processing :—

4.1) → will enhance the shelf life of
food.

4.2) as a micronutrient carrier in
foods.

Nanotechnology thus has the potential to be used in different sectors of economy. Govt. of India has started National Mission on Nanotechnology. Increased engagement b/w Industry and academia needs to be done to promote adequate research and thus promoting use of nanotechnology.

Feedback

(For OFFICE use only)

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)

The Theme for International Water Day 2022 has been, "Groundwater - Making Invisible Visible". Groundwater is a

very important valuable source that accounts for about 60% of net irrigation needs in the country. It is also an important source of water for drinking and for industries too.

Groundwater has largely remained invisible as:-

- 1) It has been used extensively especially in agriculture sector.
- As per Groundwater rules, a person has right to extract as much water as he wants from groundwater source in his property.

2) Free electricity to farmers has led to excessive exploitation of ground water.

~~Also~~

3) As per report of C GWA (Central Ground water Authority), ~~ground~~ water table has receded in many states of India below replenishable levels.

Ground water needs to be made visible : —————→

- (1) By increasing awareness and policy & measures to tackle the declining ground water levels.
- (2) The fresh water extraction needs to be rationalised and overse prevented.

Climate change will lead to reduced availability of fresh water as glaciers will reduce, so river water will decrease. It is thus important to ensure sustainable use of ground water. It will help in achieving Sustainable Development Goals.

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)

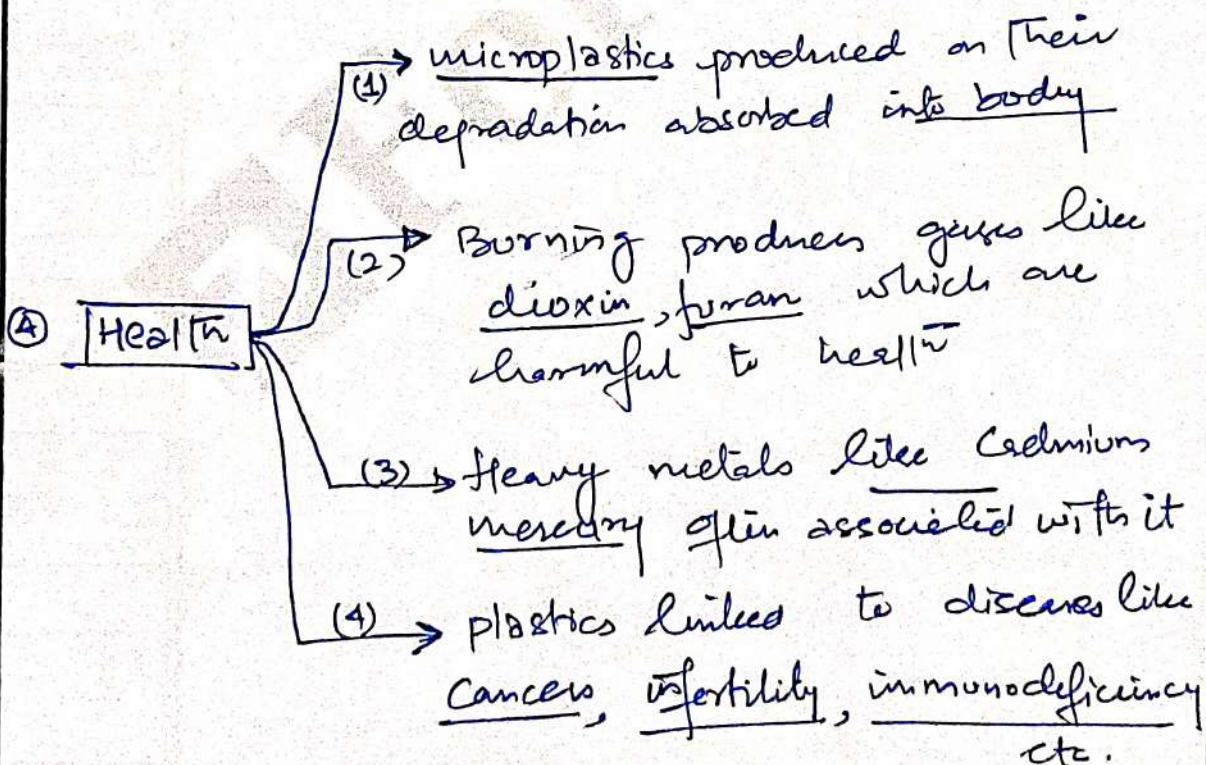
सिंगल यूज प्लास्टिक (SUP) स्वास्थ्य, आर्थिक और पर्यावरणीय संकट है, जिसके लिए सरकारों को विनियमित करने, व्यवसायों को नवाचार करने और व्यक्तिगत रूप से कार्य करने की आवश्यकता होती है। सिंगल यूज प्लास्टिक पर हाल ही में शुरू किए गए प्रतिबंध के संदर्भ में परीक्षण करें।

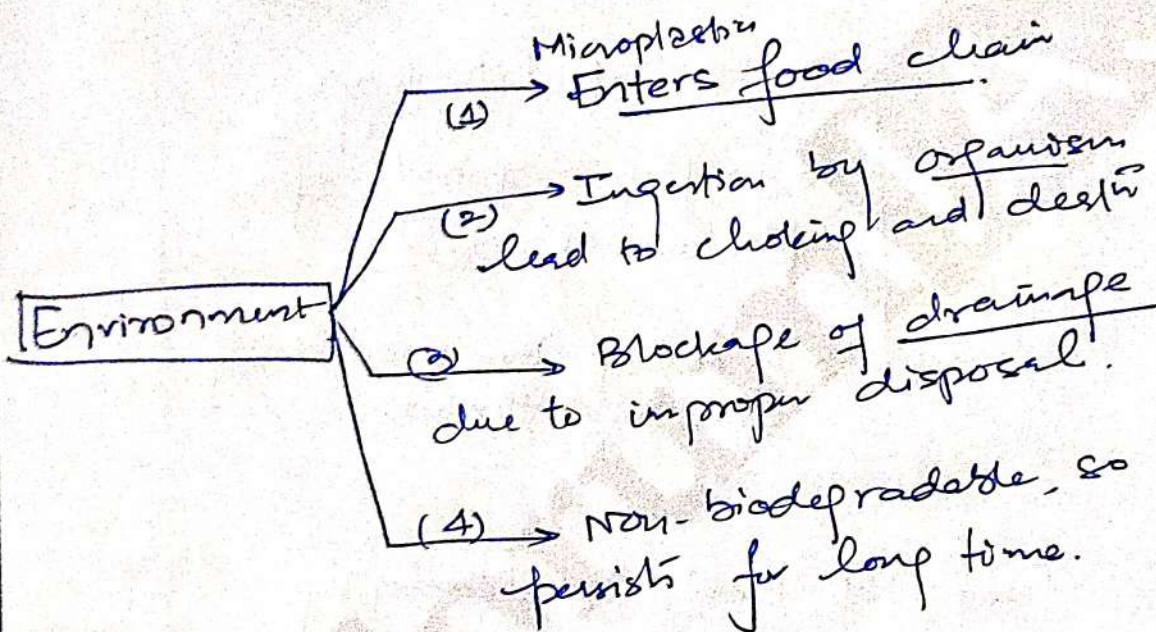
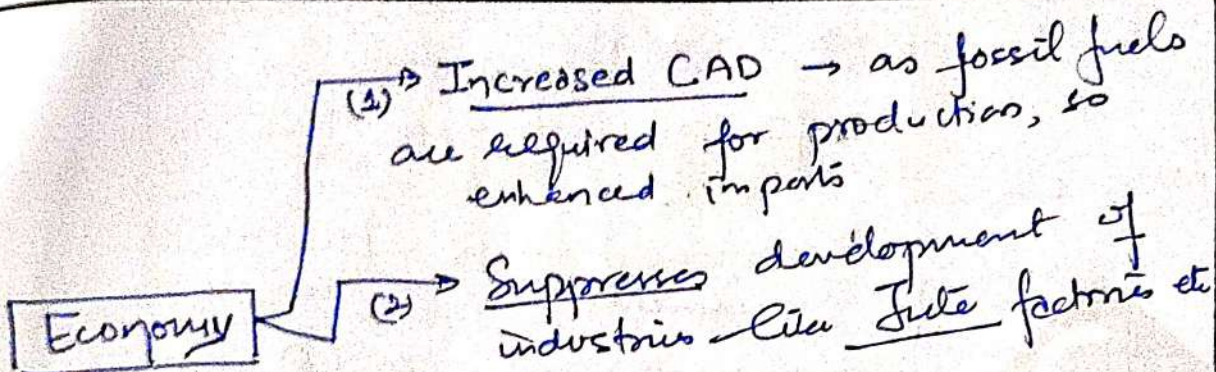
(15 अंक, 250 शब्द)

Ministry of Environment, Forest and Climate Change has recently put a ban on certain types of single use plastics including cutlery, straws, earbuds, ice-cream sticks etc.

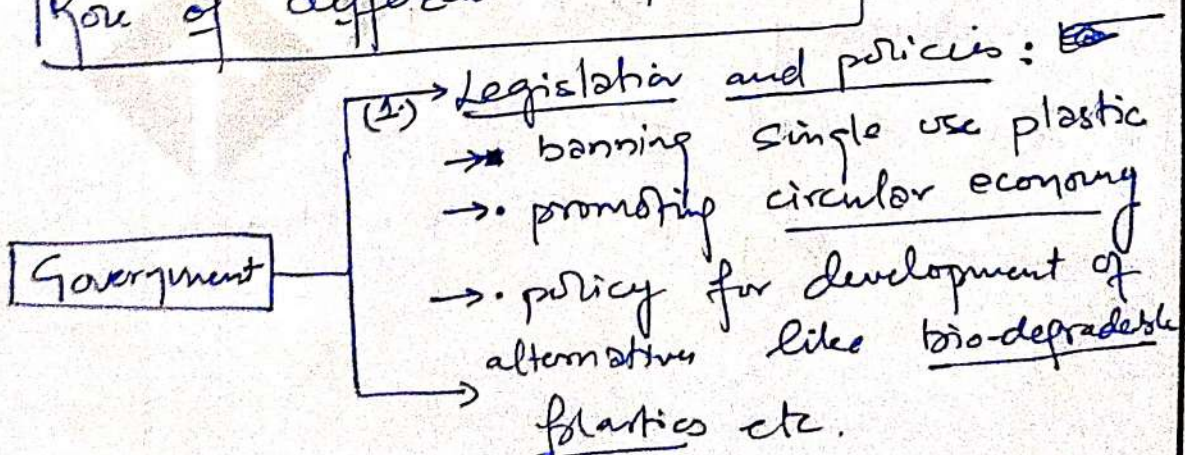
SUPs account for $\frac{2}{3}$ of total plastic use.

Impacts of SUPs: →





Role of different stakeholders



Forum IAS

(Don't Write anything on this)

Businesses

- Innovation
 - finding alternate to Sup
 - increased focus ~~to~~ on research
- Extended producer Responsibility

Individuals

- use of cloth bags
- proper disposal of plastics if used
- Avoiding the practice of use and throw.

India, instead of being a developing country, is playing a significant role in addressing global climate change. The recent ban on Sup is a landmark step in this direction.

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 सुभेदाओं का विश्लेषण करें।

(15 अंक, 250 शब्द)

India at present is facing challenges along both territorial as well as maritime borders. Traditionally foreign policy has been focused mainly for securing territorial borders. However in recent times, with the incorporation of idea of Indo-Pacific and increased Chinese aggression in Indo-Pacific, the maritime domain has enhanced relevance.

Management of maritime border differs from territorial border in following ways :-

Maritime border

(1) Multiple agencies like ICG, Navy, marine police etc. involved in its regulation.

(2) Lack of defined maritime boundaries

(3) Lack of definite boundaries leading to crossing over into neighbors' waters
Ex. issue of Tamil fishermen.

Territorial border

Usually a single force along one border ex. BSF along Indo-Pak border.

Almost whole of territorial border is defined.

No such issue present.

India has a maritime boundary of 7,517 km. This vast coastline creates various vulnerabilities like :-

- (1) Difficulty to man such long coastline.
- (2) Facing a diverse range of threats like drug smuggling, terrorism, piracy etc.
- (3) Issue of fishermen crossing over to neighboring waters as seen with Sri Lanka.

Seaports are a very important ~~source~~ route of trade. It accounts for 50% of India's trade by volume. It thus becomes important to secure our maritime boundaries to ensure safety of sea trade and counter adversaries to the region.

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 increasing use of digital technologies, cyberthreats are also increasing. As per government data, there have been around 6,74,000 cyber attacks in India in 1st 5 months of 2022.

Cyberthreats can wage a dual war

(A) On State →

↳ by compromising critical infrastructure like power, banking etc.

Ex. recent suspected cyber attack behind power outage in Mumbai

↳ by compromising research data
Ex. attempted cyber attacks of Sevins Institute facility developing COVID-19 vaccine

(B)

On Citizens

- ↳ compromising privacy by leaking online data.
- ↳ loss of money via online cyberfrauds.
- ↳ use of deepfakes as a threat to dignity.

Cyberattacks as a threat to National Security

- use by state and non-state actors in compromising national infrastructure.
- use in wars to disable defense systems.

Cyberattacks as threat to social stability

- spreading radicalisation to spread communal hate.

→ by targeting vulnerable groups
like children

Thus with advancement of digital technology, cyber threats are also rising. Government initiatives like NCIIPC, National Cyber Security Policy, Integrated Cyber Control Command Centre etc. are important steps to address the challenges. There needs to be enhanced engagement with private sector to develop cyber secure digital infrastructure in the country.

Feedback

(For OFFICE use only)

Structure/ Presentation
Question Interpretation
Content
Value Addition
Total

Mentor Feedback Questions

- 1
- 2
- 3
- 4
- 5

Test Goal

- 1 ☐
- 2 ☐
- 3 ☐

Outcomes

-
-
-
-
-
-

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.