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GENERAL STUDIES (TEST CODE : 1515)

Name of Candidate	Parth Gupta		
Medium Eng./Hindi	Eng.	Registration Number	122026
Center	ORN	Date	

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
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10	10	
11	15	
12	15	
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14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
- There are **TWENTY** questions printed in **ENGLISH & HINDI**.
इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
- All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
- 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. No marks will be given for answers written in medium other than the authorized one.
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
- Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
- Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1. Explain the meaning of off-budget borrowings and its role in helping the government raise funds for various expenditures. Also, comment on its desirability. (150 words) 10

बजटेंतर उधारी (ऑफ-बजट बॉरोइंग्स) का अर्थ स्पष्ट कीजिए और विभिन्न व्ययों के लिए धन जुटाने में सरकार की सहायता करने में इसकी भूमिका का उल्लेख कीजिए। साथ ही, इसकी वांछनीयता पर टिप्पणी कीजिए।

Off budget borrowings are those government borrowings not reflected in annual financial statement. In the Budget 2022, our FM decided to cover off budget borrowings too in calculating fiscal deficit.

Role in fund raising :

- i) Government can raise funds as loans from small savings funds by govt. agencies like FCI.
- ii) It doesn't affect government balance sheets immediately, thus not affecting credit rating.
- iii) Govt keeps fiscal deficit artificially low to increase investor confidence.

Desirability

Within a normal range, off-budget borrowings are acceptable and practiced globally. However, if it is over-relied upon, it can lead to reduced investor sentiment, credit ratings and trust in public data and estimates.

Moreover, as per Ricardian equivalence, people would spend less fearing future taxes. This affects growth rate.

2. It is argued that genetically modified food crops are required to ensure food security of India. Examine in view of concerns regarding introduction of GM crops. (150 words) 10

यह तर्क दिया जाता है कि भारत की खाद्य सुरक्षा सुनिश्चित करने के लिए आनुवंशिक रूप से संशोधित खाद्य फसलों की आवश्यकता है। जी.एम. फसलों की शुरूआत से संबंधित चिंताओं के आलोक में परीक्षण कीजिए।

Genetically Modified (GM) crops are special variety of crops which are developed by ~~cross-breeding two varieties~~ introducing new genes into DNA of these varieties. They are beneficial because of high yield, climate risk resilient, pest resistant, Short duration etc.

Need for food security + GM needed

- i) Present productivity of Indian agriculture is low, which can increase with GM. eg., BT Mustard
- ii) Reduce vulnerability to pest attacks like BT cotton against Pink bollworm.
- iii) Shorter duration means less vulnerable to climate change.
- iv) Desired characteristics can be achieved necessary for food processing sector.

- v) Biofortified food can fight ~~mal~~ malnutrition.
eg. Golden Rice.

Risks of GM Crops

- i) Can cause gene mutations in consumers.
- ii) Rise of superbugs.
- iii) Monopoly of private firms like Monsanto.
- iv) Increase input cost of farmers,
like Kalbhata rice

Hence we should use GM only as
last resort and promote more landraces
and their hybrids to achieve food and
nutrition security.

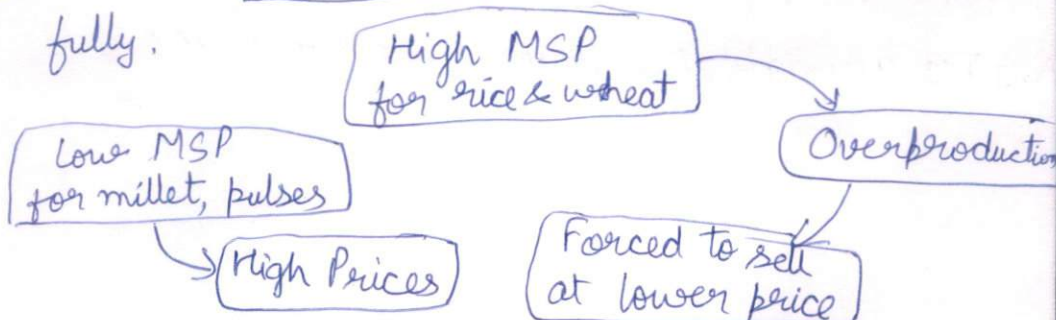
3. India's price intervention policies to support its agricultural sector not only create a broken system but also complicate matters related to international trade rules. Critically discuss. (150 words) 10

अपने कृषि क्षेत्र का समर्थन करने के लिए भारत की मूल्य हस्तक्षेप नीतियां न केवल एक अप्रभावी व्यवस्था का निर्माण करती हैं बल्कि अंतर्राष्ट्रीय व्यापार नियमों से संबंधित मामलों को भी जटिल बनाती हैं। समालोचनात्मक विवेचना कीजिए।

India incentivises its farmers through price interventions - MSP for 21 crops, procurement at MSP, FRP for sugarcane, cotton, PM AASHA scheme etc.

Broken System

- i) Regionally skewed support - Procurement happens only in few states - Punjab, Haryana, Western UP, Andhra, T.N.
- ii) Mainly focus is on cereals - Rice, Wheat apart from cotton.
- iii) Huge payment arrears for Sugarcane farmers.
- iv) MSP doesn't reflect market demand fully.



- v) Schemes like Price deficiency payment led to cartelisation.
- vi) lack of access to mandis leads to middlemen. It creates price wedges and price dispersion.

WTO issues

- i) Agreement on Agriculture allows upto 10% of Agri GDP as de-minimus Subsidy.
- ii) Price support comes in ^{amber} ~~red~~ box subsidy and has to be eliminated.

However peace clause gives exemption to developing countries.

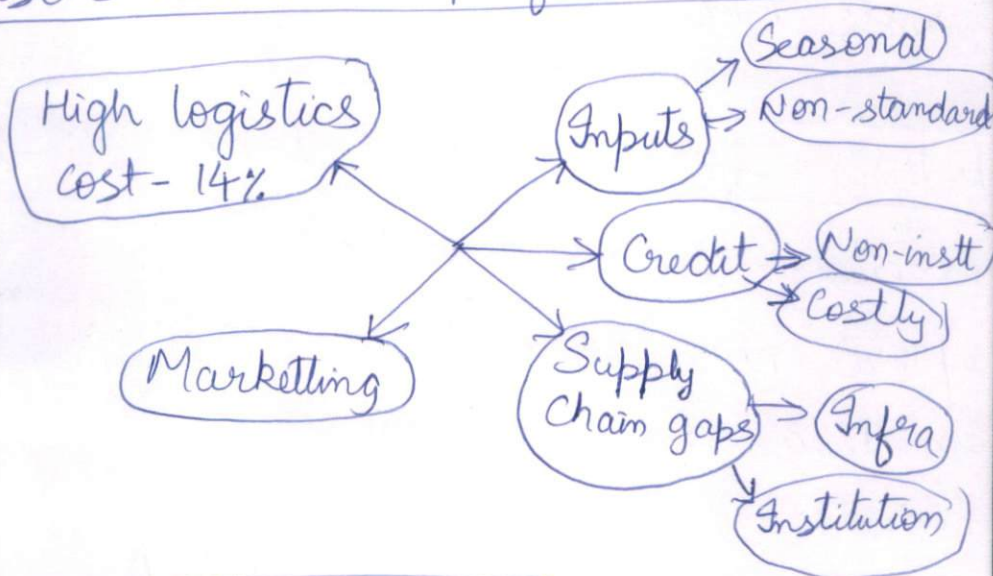
But pricing norms need to reflect more of market and ground realities to ensure robust agri growth, eg., NATS aayog's Minimum Reserve Price.

4. India has an opportunity to become a leading global food supplier provided it has an efficient supply chain and the right marketing strategies. Elucidate. (150 words) 10

भारत के पास एक अग्रणी वैश्विक खाद्य आपूर्तिकर्ता बनने का अवसर है बशर्ते उसके पास एक कुशल आपूर्ति श्रृंखला और सही विपणन रणनीति हो। विशदीकरण कीजिए।

India has world's highest net sown area but only 2.5% of agri exports are from India.

Reasons behind low performance :



Efficient Supply chain

Infrastructure -

i) Enough cold storage, godowns but less reefer vehicles, ripening chambers.

ii) Road connectivity, access to mandis,

iii) Creation of GrAMs, extend eNAM.

- iv) Power connectivity and reliability.
- v) ~~Faster~~ Green clearances for perishable items.

Institutional

- i) Relax controls over APMCs,
- ii) Keeping agriculture out of Essential Commodities act.
- iii) Promote FPOs.

Marketing reforms - Apart from institutional reforms in supply chain,

- i) Explore non-conventional markets
- ii) Branding of traditional, organic products

were recommended by Ashok Dalwai Committee.

These reforms should be implemented to achieve aim of doubling farmers' income by 2022.

5. Land banks are increasingly gaining prominence in India to encourage land-use efficiency and enable economic growth. In this context, discuss the benefits of a land bank and state the concerns associated with it.

(150 words) 10

भूमि उपयोग दक्षता को प्रोत्साहित करने और आर्थिक वृद्धि को सक्षम बनाने के लिए भूमि बैंक भारत में तेजी से प्रमुखता प्राप्त कर रही हैं। इस संदर्भ में, भूमि बैंक के लाभों तथा इससे संबंधित चिंताओं का उल्लेख कीजिए।

Land banks are databases of land parcels ready to be used for any developmental purpose. Recently India Industrial Land Bank based on GIS maps has been launched.

Benefits of Land Bank

i) Owner:

- Can lease the land and earn.
- Safeguards ownership claim over land.
- No threat of fraud.

ii) Investor:

- Faster investment decisions and long term planning.
- Less procedural hurdles, as these land banks have some permissions given beforehand.

iii) Government:

More investment, tax, Efficient use of public resources, ease of doing business.

Concerns :

- i) Can lead to undermining of ^{environmental} state interests.
- ii) ~~voice~~ less voice to traditional dwellers, tribals etc.
- iii) Land valuation becomes tricky.
- iv) Poor data collection that doesn't correctly reflect land details.

Hence we need to ensure equity and quality in preparing land banks to ensure sustainable growth.

6. Desertification has been described as one of the greatest environmental challenges of our time and climate change is making it worse. Discuss.

(150 words) 10

मरुस्थलीकरण को वर्तमान समय की सबसे बड़ी पर्यावरणीय चुनौतियों में से एक के रूप में वर्णित किया गया है तथा जलवायु परिवर्तन इसे और बदतर बना रहा है। चर्चा कीजिए।

Desertification refers to falling ecological and biological productivity of land in arid and semi-arid regions. Presently about 30% of India undergoing desertification.

Challenges because of desertification

- i) Increasing frequency of droughts and their intensity, Affects food security.
- ii) Occurance of flash droughts.
- iii) ~~land~~ ^{soil} ecosystem collapses leading to low agri-productivity.
- iv) loss of moisture from soil makes desertification irreversible.
- v) Causes large scale human migration, loss of labour days due to heat stress.
- vi) More adverse impact on vulnerable.

(Climate Change)

It is leading to more adverse desertification due to phenomena like more frequent El Nino, Atlantic el Nino, forest fires etc.

Disruption in rainfall pattern has made rainfed agriculture highly prone to it.

Hence we need to address it by fulfilling the target of land degradation neutrality under UN Convention to Combat Desertification.

7. In the context of intellectual property rights, discuss the advantages and disadvantages of releasing projects under an 'Open Source' license.

(150 words) 10

बौद्धिक संपदा अधिकारों के संदर्भ में, 'ओपन सोर्स' लाइसेंस के तहत परियोजनाओं को जारी करने के लाभ और हानियों पर चर्चा कीजिए।

Open source means that such projects can be used by other developers and can be modified by them without any restriction. Prominent tools made using open source are Linux, etc.

Advantages :	Disadvantages :
i) Promotes <u>innovation</u> .	i) loss on <u>patent income</u> .
ii) Ensures <u>access to tools, services</u> etc.	ii) No <u>reward</u> to developer.
iii) Promote collaboration among firms.	iii) An <u>amateur</u> may spoil a project.
iv) Promotes <u>more development</u> eg, Google's Android promoted more app developers.	iv) No <u>accountability</u> in case of failure.
v) People more comfortable in using it as they are not controlled by anyone.	v) No guidance for amateurs.

Despite its shortcomings, open source movement is highly successful. Now govt is also sharing data openly over open data government portal.

This ~~is a good~~ reflects the trust in open source as it ensures equity in access.

8. "Indian space sector has been dominated by a single umbrella of government and government institutions." In light of the statement, discuss the significance of Indian Space Association in providing an impetus to space technology in India. (150 words) 10

"भारतीय अंतरिक्ष क्षेत्र पर सरकार की एकमात्र संस्था का प्रभुत्व रहा है।" इस कथन के आलोक में, भारत में अंतरिक्ष प्रौद्योगिकी को प्रोत्साहन प्रदान करने में भारतीय अंतरिक्ष संघ के महत्व की विवेचना कीजिए।

India has less than 5% of global space industry despite having some of the state of art technologies.

This is because of weak presence of private sector. Recently Indian Space Association as an industrial association of public and private players has been formed.

Benefits of this development:

- i) Better collaboration with ISRO and sharing of her facilities by private players. This is crucial for innovation from private sector.
- ii) Collaboration among private players will ensure sharing of

data, expertise in joint projects etc.

iii) ISA can help in lobbying with government for favourable policies that eases regulation and promotes innovation.

iv) Promote 'new-space' activities i.e., GIS, GPS, cartography, image processing etc.

Hence ISA, along with ISpace, National Space Agency etc will help in reforming our space sector and giving it a dynamic orientation.

9. Man and machine both have an important role in national security and making urban areas secure. In this context, discuss how technology is a major stakeholder in addressing the internal security challenges of India.

(150 words) 10

राष्ट्रीय सुरक्षा और शहरी क्षेत्रों को सुरक्षित बनाने में मानव और मशीन दोनों की महत्वपूर्ण भूमिका है। इस संदर्भ में, चर्चा कीजिए कि प्रौद्योगिकी किस प्रकार भारत की आंतरिक सुरक्षा चुनौतियों से निपटने में एक प्रमुख हितधारक है।

Internal security is heavily dependent upon technical prowess of a country.

Importance of technology:

- i) Signal intelligence - detecting, decoding enemy communications.
- ii) Threat identification by data collation as done by NATGRID.
- iii) Anti terror operations can be improved through better aerial survey, using drones.
- iv) Hostage operations require robots.
- v) Detecting radical groups, elements using AI technology.

- vi) Detecting loopholes in border security
like tunnels along India-Pak border
 - vii) Better border security through
CEBMS, BOLDAAT and other
initiatives.
 - viii) Finding out threats within
civil society by tracking finance
trails.
 - ix) Avoid ambush through better detector
vehicles.
- Hence we should make our
defence force and intelligence more
tech savvy for better security.

10. National Security Guard (NSG) has emerged as a formidable force equipped to handle various manifestations of terrorism. Discuss the mandate and achievements of this force. (150 words) 10

राष्ट्रीय सुरक्षा गार्ड (NSG) एक पराक्रमी बल के रूप में उभरा है जो आतंकवाद के विभिन्न रूपों से निपटने के लिए सुसज्जित है। इस बल के अधिदेश और उपलब्धियों की विवेचना कीजिए।

National Security Guards are the prime anti-terror forces of our country created to neutralise various types of threats.

Mandate:

- i) Neutralise terror attacks
- ii) Hostage situations
- iii) Security of key personnel like PM.

Achievements

- i) Successfully neutralised the ^{26/11} terror attack in Mumbai.
- ii) Operation all out in Kashmir when many terrorists were eliminated.
- iii) Security track record of key figures has remained unblemished.

NSG is and will be one of our most potent forces as we move to emerge as a stronger nation.

11. What do you understand by asset monetisation? Why is it needed in India? In this context, discuss the issues that need to be addressed for the National Monetisation Pipeline to succeed. (250 words) 15

परिसंपत्ति मुद्रीकरण से आप क्या समझते हैं? भारत में इसकी आवश्यकता क्यों है? इस संदर्भ में, उन मुद्दों पर चर्चा कीजिए जिन्हें राष्ट्रीय मुद्रीकरण पाइपलाइन के सफल होने के लिए समाधान करने की आवश्यकता है।

Recently National Monetisation Pipeline was launched by union government to raise finances for infrastructure development.

Asset Monetisation - Process of extraction of monetary value out of existing assets, without transferring ownership. eg., by lease or other means.

Importance of Asset Monetisation

- i) Huge finance required for infrastructure creation. As per Jsher Judge Ahluwalia Committee ₹ 39 lakh crore needed for creation of urban infra till 2031 and 20 lakh crore for maintenance.
- ii) Integrating with global value chains

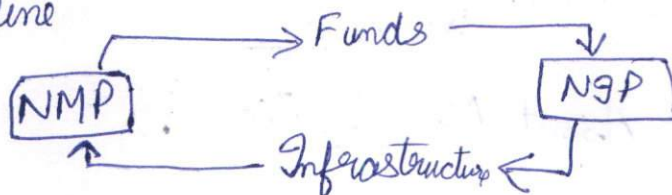
and reducing logistics cost, presently at 14% of GDP.

iii) limited resources with government especially after pandemic. Huge fiscal deficit of 9.4%.

iv) Efficiency of private sector can help increase profitability of existing assets.

v) No delays like land, environment clearances associated with this.

vi) It can fund the National Infrastructure Pipeline



Challenges to NMP :

i) Valuation of assets - ~~the~~ Assets can be undervalued or overvalued leading to loss to exchequer or less interest of pub.

ii) Weak balance sheets of corporate sector due to NPAs.

- iii) Seen as anti-consumer. eg., monetisation of roads for tolls, etc. Public protests.
- iv) Discom sector may not evoke much enthusiasm from investors.
- v) Seen as a move towards privatisation eg., railways, discoms etc.
- vi) Needs close coordination among various ministries.

Hence these challenges must be addressed to reap full potential of NMP for Atmanirbhar Bharat.

12. What is social stock exchange (SSE)? Discuss the need for setting up of SSEs and key challenges in their effective implementation. (250 words) 15

सोशल स्टॉक एक्सचेंज (SSE) क्या है? SSEs की स्थापना की आवश्यकता और उनके प्रभावी कार्यान्वयन में विद्यमान प्रमुख चुनौतियों पर चर्चा कीजिए।

Social Stock Exchange refers to a stock exchange where socially oriented organisations list themselves and receive funds from interested parties based on their performance.

It aims to bring transparency and efficiency to Indian Social sector. It was proposed in Budget 2019-20 and recently draft norms ~~pro~~ framed.

Need for SSE

- i) It encourages transparency among NGOs, other organisations.
- ii) Prevents money laundering via CSOs.
- iii) Reform our CSO sector, presently accused of anti-national activities. As per 9B, 2-3% GDP loss due to such acts.

- iv) More funds to deserving NGOs which work at grassroots level.
- v) Encourage philanthropy among society.
- vi) Through more competition and collaboration among CSOs, it brings synergy in sector.

Hence it will bring qualitative and quantitative improvement.

Challenges

- i) Assessing their performance on uniform standards is a challenge as it can't be fully measured in monetary terms.
- ii) It can add more administrative burden to NGOs and reduce focus on their core area. More funds would be diverted for this.
- iii) lack of awareness, digital skills among many organisations at local levels.

iv) No regulator for Social Sector. No comprehensive data.

v) lack of consensus among industry on SSE.

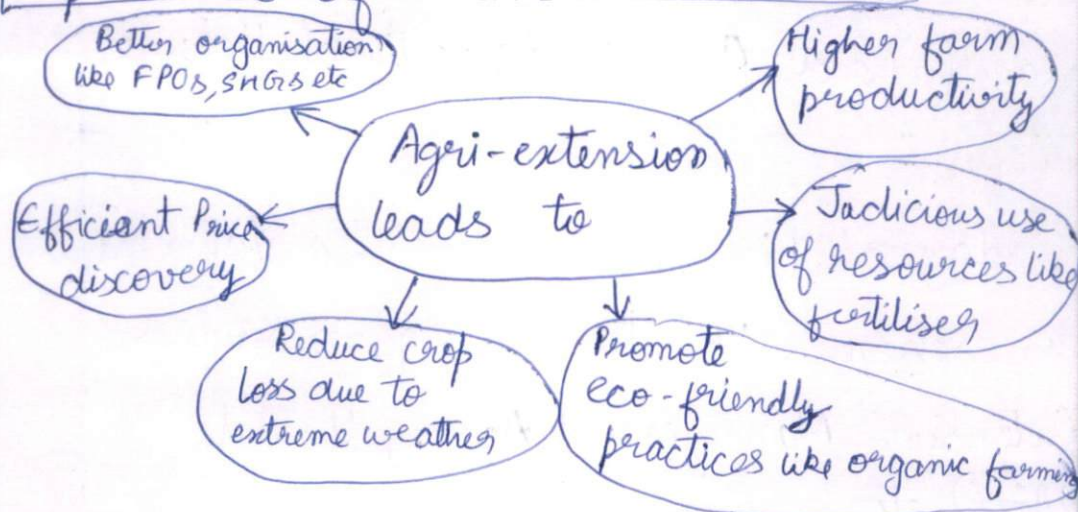
These challenges have led to delays in setting up of SSE. To overcome them, institutional, attitudinal and digital reforms have to be brought to ensure 'Sabka Sath Sabka Vikas'.

13. In the context of India, highlight the importance of agriculture extension. What are the challenges faced in provisioning of agriculture extension services? How does the National Mission on Agricultural Extension & Technology (NMAET) address these issues? (250 words) 15

भारत के संदर्भ में, कृषि विस्तार के महत्व पर प्रकाश डालिए। कृषि विस्तार सेवाओं के प्रावधान में सामना की जाने वाली चुनौतियां कौन-सी हैं? कृषि विस्तार और प्रौद्योगिकी पर राष्ट्रीय मिशन (NMAET) इन मुद्दों का कैसे समाधान करता है?

Agriculture extension services refer to information dissemination services like weather advisories, best practices etc which increase agri-productivity.

Importance of Extension Services



India has potential to drastically improve her agri productivity if farmers have right information and at right time.

(Challenges in Agri-Extension)

- i) Weak lab-to-land connectivity of labs. leads to delays in technology adoption.
- ii) High initial investment in new methods, technologies eg., drip irrigation.
- iii) Cultural barriers, conservative mindset.
- iv) lack of context specific information.
- v) Weak digital connectivity in rural areas.
- vi) Underfunded A State Agricultural University.

To address this government has launched various schemes like Krishi Vigyan Kendras, Agri Extension Management ~~Agency~~ Institute (MANAGI) etc.

National Mission on Agri-Extension and Technology (NMAET) can also help in addressing these issues:

i) It has 4 Submissions on:

- Agri-Extension
- Agri-Mechanisation
- Seed and Planting Material

- Plant Protection & Quarantine

- ii) Thus the mission will try to provide adequate advisories to farmers along with inputs like seeds, machines. This can lead to other farmers adopting the practice.
- iii) It will also provide subsidy support to farmers for initial investments. By
- iv) Creation of dissemination facilities will be focussed.

Through NMAET, we can improve productivity and double our farmers' income.

14. Clearly delineate the 'employment problem' that India currently faces. Also, explain the fundamental reasons behind existence of this problem.

(250 words) 15

भारत वर्तमान समय में जिस 'रोजगार समस्या' का सामना कर रहा है, उसे स्पष्ट रूप से निरूपित कीजिए। साथ ही, इस समस्या के अस्तित्व के मूल कारणों की व्याख्या कीजिए।

India is presently witnessing demographic dividend with 65% of population in working age. This has created some 'employment problems' in India:

- i) Disguised unemployment - in agriculture
- ii) Underemployment - due to lack of opportunities matching with skill.
- iii) Craving for government jobs for which youth keeps preparing in their productive age group.
- iv) Huge informal sector - 69.5% of labour force in informal sector as per PLFS.
- v) Voluntary unemployment - ~~at~~ mainly by women due to domestic responsibilities.
- vi) Excessive share of Agriculture - 46.5% (PLFS)

Reasons behind these problems:

- i) Rigid regulatory regime leading to MSMEs remaining 'dwarfs' and less job growth.
- ii) low skill of workforce, thus most of them accommodated in agriculture.
- iii) Jobless growth due to over-reliance on services sector which is less ~~job~~ labour intensive.
- iv) Lack of enough support to new businesses. Thus many of them prefer to go for job. This has changed with Startup India, AISM etc.
- v) Lack of data on our workforce, their skills etc.
- vi) 4th Industrial revolution making many ~~technical~~ repetitive jobs redundant.
- vii) Patriarchal structure of society hindering women from participating.
- viii) Regionally skewed growth leading to

large scale migrations which are not properly planned.

India should use its competitive advantage i.e., low cost labour to get greater share of global trade. Various schemes like Skill India, 4 labour codes, e-SHRAM portal etc will help in this leading to an 'Employed India, Empowered India'.

15. Although steps have been taken for integrating the dispersed logistics activities of maritime trade, much more needs to be done to make India a maritime powerhouse. Discuss. (250 words) 15

हालांकि समुद्री व्यापार की विखंडित लॉजिस्टिक गतिविधियों को एकीकृत करने के लिए विभिन्न कदम उठाए गए हैं, फिर भी भारत को एक समुद्री पावरहाउस बनाने के लिए और भी बहुत कुछ किए जाने की आवश्यकता है। चर्चा कीजिए।

India's long coastline of 7500 Km and high logistics cost of 14% of GDP emphasize need for better maritime logistics.

Steps to improve & integrate Maritime log.

i) Sagarmala mission - has 4 key pillars -

- Port development
- Port led industrialisation
- Port led connectivity
- Hinterland connectivity
- Community development

Through this, more infrastructure is being created for faster clearance and turnaround time. It goes for a holistic approach.

ii) legislative reforms like marine aids to navigation act, draft coastal Shipping bill etc. These are to ease and bring clarity in the regulatory structure.



However much more needs to be done because maritime sector is eco friendly and economical and has huge scope for job growth.

Ways to improve:

- i) Improving the automation at ports for faster clearance.
- ii) More deep water ports for heavy tonnage ships.
- iii) Trans-shipment zones be built like one planned in Andaman and Nicobar islands.
- iv) Skilling of workers in port operations in ITIs.
- v) Disaster resilience of port infrastructure.
- vi) Increasing the commercial fleet of cargos for faster trade. Easy flag-in norms will help in this.
- vii) Better port-to-hinterland connectivity should be there.

viii) Faster customs clearance at ports
like TURANT - customs.

Maritime trade is crucial component
(more than 90% by weight) of our trade. As
India aims for Export led growth, maritime
logistics must be improved.

16. Accounting for natural capital and ecosystem services is crucial to understand the link between the economy and environment. Discuss with specific references to India's initiatives in this regard. (250 words) 15

अर्थव्यवस्था और पर्यावरण के मध्य संबंध को समझने के लिए प्राकृतिक पूंजी और पारिस्थितिकी तंत्र सेवाओं के लिए लेखांकन महत्वपूर्ण है। इस संबंध में भारत द्वारा की गयी पहलों के विशिष्ट संदर्भ के साथ चर्चा कीजिए।

Natural Capital accounting refers to assessment of the economic value of goods and services available from nature. Recently many initiatives have been taken for this.

Importance of Natural Capital accounting

- i) Highlights the importance of Ecosystems.
- ii) Can understand the degree of threat to humans by destruction of the ecosystem.
- iii) Ways to improve ecosystem.
- iv) Bring public attention and government focus.
- v) Rank them in priority for conservation efforts.
- vi) Helps create robust data on our natural Capital.
- vii) Monitor progress to GNDCs.
- viii) Indicate how Sustainable is our growth.

Natural capital accounting involves - identification and mapping, qualitative assessment, monetary assessment of the ecosystem.

Various schemes for this -

- i) India has adopted UN System of Environment and Economic Accounting (UN-SEEA).
- ii) India is part of the project NCAVES ~~National~~ (Natural Capital Accounting and Valuation of Ecological Services).
- iii) Various atlas have been produced like Desertification and land degradation Atlas, National Solar Atlas.
- iv) People's Biodiversity Registers are maintained, by BMCs under Biological diversity act 2002, Traditional Knowledge Digital Library.
- v) National Mission on strategic knowledge for climate change.

However despite these initiatives there are lacunae like lack of real time data, green skills, proper valuation etc which need to be addressed.

With proper natural capital accounting we can ensure sustainable and inclusive growth and improve upon all SDGs.

17. Rapid and unplanned urbanisation accompanied by population growth have increased both the risk and impact of natural disasters. Discuss the statement along with adequate measures to address the relevant concerns in India.

(250 words) 15

जनसंख्या वृद्धि के साथ-साथ तीव्र और अनियोजित शहरीकरण ने प्राकृतिक आपदाओं के जोखिम और प्रभाव दोनों को बढ़ा दिया है। भारत में विद्यमान प्रासंगिक चिंताओं के निवारण हेतु यथोचित उपायों के साथ इस कथन की व्याख्या कीजिए।

India is a fastly urbanising country with 50% population expected to be in urban areas by 2050.

Risk of Natural disasters

Due to rapid, unplanned urbanisation there has emerged greater vulnerability to disasters:

i) Disaster risk - Various disasters like urban flooding, heatwaves, thunderstorms are prominent eg., Recent Chennai floods.

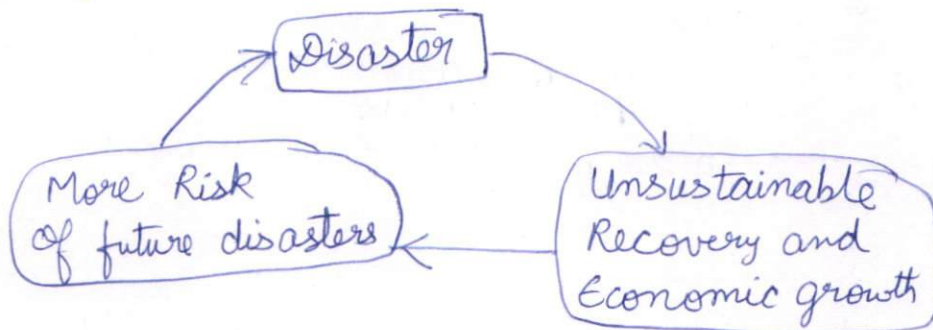
Coastal cities are prone to cyclones like in Odisha.

ii) Disaster impact - Due to high population density, lack of risk zoning and disaster planning, occupation of storm water drains, lack of green spaces,

disasters are becoming more violent.

iii) Disaster management — It gets hampered due to multiplicity of agencies, inadequate information dissemination, lack of social capital, civil defence etc.

iv) Reconstruction and Rehabilitation is often haphazard leading to more future risks.



Initiatives to make urbanisation disaster resilient

i) NDMA has made specific plans and guidelines for urban disasters including urban flooding, heatwaves.

ii) Impact based disaster alerts/warnings for better decision support system. Done for Cyclones.

- iii) Promoting urban forestry through Nagan Van Udyan yojana.
- iv) To curb pollution in cities various waste management rules, indices like NAAQs and agencies like CPCB.
- v) To curb fire accidents, building construction codes are framed, though their enforcement is weak.
- vi) Training of urban people to deal with probable disasters by NEMA.
- vii) CRZ norms to reduce threats from cyclone by maintaining natural buffer.
- viii) Usage of technology - Smart Cities.

Despite these initiatives, urban vulnerabilities are high. It can be addressed by proper enforcement and public engagement.

18. National Hydrogen Mission can be a game changer for India's rising energy demands. Comment. (250 words) 15

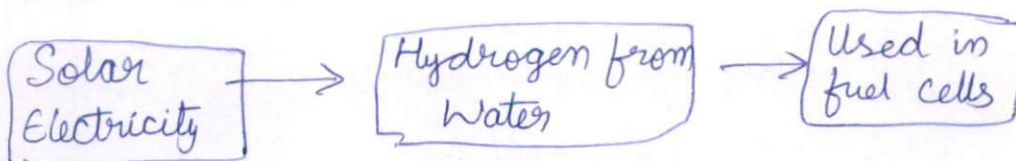
भारत की बढ़ती ऊर्जा मांगों के लिए राष्ट्रीय हाइड्रोजन मिशन एक गेम चेंजर हो सकता है। टिप्पणी कीजिए।

India's aim to transition to a net zero emission economy by 2070, and to fulfil its energy needs, requires green energy like from hydrogen.

National Hydrogen Mission

It aims to use Hydrogen as fuel to generate energy. Hydrogen can be used ^{either} in fuel cells to generate electricity or in engines as a fuel.

Presently most of our H_2 needs are met using grey hydrogen, generated from fossil fuels. The mission aims to increase generation of green hydrogen.



In this sense Hydrogen can be used as storehouse of energy.

Gamechanger for India

- i) Presently, most of energy needs met through fossil fuels. These need to be reduced under Paris agreement.
- ii) Huge import dependence on crude oil can be reduced with H_2 .
- iii) Existing pipeline infrastructure can help in faster transport of H_2 .
- iv) Green hydrogen cost can be reduced making energy cost very low, thus ensuring access and social justice.
- v) Huge reserves of coal can also be used to produce hydrogen.
- vi) It solves the problem of energy storage associated with renewable energy, by using H_2 as storage medium.
- vii) Hydrogen based automobiles can reduce pollution, cost of vehicle.

Presently India's percapita energy consumption is $\frac{1}{2}$ of global average. This needs to be increased to ensure faster development and justice.

National Hydrogen Mission can definitely help if we overcome initial challenges of R&D, small market, less energy density of hydrogen etc.

This will lead to 'Energy secure India'.

19. Despite geo-strategic instability of its region and a keen awareness of the cyber threat it faces, India has made only 'modest progress' in developing its policy and doctrine for cyberspace security. Critically examine.

(250 words) 15

अपने क्षेत्र की भू-रणनीतिक अस्थिरता और इसके समक्ष विद्यमान साइबर खतरों के संबंध में व्यापक जागरूकता के बावजूद, भारत ने साइबरस्पेस सुरक्षा के लिए अपनी नीति और सिद्धांत विकसित करने में केवल 'साधारण प्रगति' की है। समालोचनात्मक परीक्षण कीजिए।

Recent attacks on power sector in Mumbai by Shadowpad malware show the threat ^{to} of Cyberspace.

Threats to Cyberspace

India faces multiple forms of threats :

- i) From adversary neighbours like Pakistan, China. Shadowpad malware attack was from China.
- ii) Attacks by private groups supported by foreign states.
- iii) Snooping attacks like through Pegasus software.
- iv) Attacks on critical infrastructure like banks, Aadhaar data etc.

v) Internal Cyberthreats - Cyberfrauds, cybercrimes, like the ones carried out from Jamtara region.

vi) Gullible users

Despite such immense threats, the cyberspace remains largely unsecure. We have Cybersecurity policy 2013, Information Technology act 2000, but our approach is more reactive than proactive:

i) lack of comprehensive laws like data privacy law, or a cybersecurity law.

ii) lack of trained workforce in law enforcement. Most state police's cyber wings are lacking in basic infra and training.

iii) Not considering emerging risks from IoT, big data, robotics etc.

iv) No offensive capability to deter our adversaries from carrying sabotage

activities against us.

v) Most of our data is stored abroad. Though RBI guidelines have now mandated locally storing payment data.

vi) Private players not fully adhering to cybersecurity norms. Audits not done frequently.

Hence there are multiple threats on cybersecurity front which need to be addressed to make India Cyber secure and digital power.

20. Developmental interventions alone cannot play a defining role in the resolution of existing and protracted internal conflicts in various parts of India within a reasonable time frame. Discuss. (250 words) 15

भारत के विभिन्न हिस्सों में व्याप्त और दीर्घकाल से जारी आंतरिक संघर्षों को उचित समय सीमा के भीतर हल करने में केवल विकासात्मक हस्तक्षेप एक निर्णायक भूमिका नहीं निभा सकते हैं। चर्चा कीजिए।

India has been witnessing numerous protracted conflicts like left wing extremism, insurgency in NE and terrorism in Kashmir.

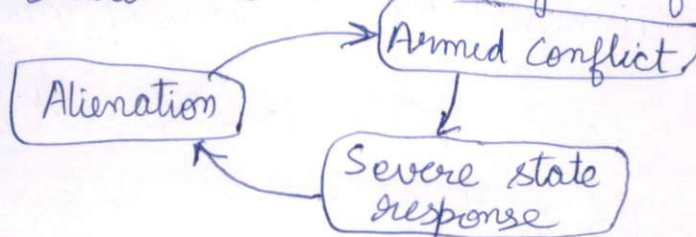


Development interventions ~~have limit~~

- i) Winning hearts and Minds strategy
- ii) Operation Super 50 in Kashmir, and Operation insaniyat
- iii) Various peace accords with insurgent groups, like Bodo peace accord.

Importance of developmental interventions

i) They break the vicious cycle of alienation



ii) They build capabilities for governance, make them economically productive and thus stakeholders in peace.

iii) They address intersectionality of vulnerabilities which is used to radicalise them as in Kashmir.

iv) Build trust in armed forces, create ground level intelligence.

v) Strengthen nationalism, ~~Reduce~~

Weaknesses

i) Violent groups, elements terrorise collaborators, eg., Civilian killings in Kashmir.

ii) Support from neighbours - Pakistan, China.

iii) Activities like drug trafficking,

arms trafficking.

iv) Network of Over Ground workers is not easily dismantled by development.

v) They can easily stall development.

vi) Such groups with political patronage siphon off funds for development.

Hence in such situations we need strong deterrence, governance, tracking of finance and public mobilisation for progressive prospects. This will resolve ~~the~~ such protracted issues.