



VISIONIAS
INSPIRING INNOVATION
ABHYAAS MAINS

सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2023)

निर्धारित समय: तीन घंटे

Time Allowed: Three Hours

अधिकतम अंक: 250

Maximum Marks: 250

सामान्य अनुदेश

इस प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका में 55+1 पृष्ठ हैं। प्रश्न-पत्र, क्यू.सी.ए. पुस्तिका के अंत में संलग्न है, जो अलग (वियोज्य) किया जा सकता है और उम्मीदवार परीक्षा के उपरान्त अपने साथ ले जा सकते हैं।

रफ कार्य के लिए, इस पुस्तिका के अंत में खाली पृष्ठ दिया गया है।

पुस्तिका प्राप्त होने पर, कृपया यह जांच कर लें कि इस क्यू.सी.ए. पुस्तिका में कोई कमी न हो, फटा हुआ पृष्ठ न हो अथवा कोई पृष्ठ गायब न हो इत्यादि। यदि ऐसा हो, तो इसके बदले नई क्यू.सी.ए. पुस्तिका प्राप्त कर लें।

General Instructions

This Question-Cum-Answer (QCA) Booklet contains 55+1 pages. Question Paper in detachable form is available at the end of the QCA Booklet which can be taken away by the candidate after examination.

For rough work, blank page has been provided at the end of this Booklet.

On receipt of the Booklet, please check that this QCA Booklet does not have any shortcomings, torn or missing pages etc. If, so, get it replaced with a fresh QCA Booklet.

(उम्मीदवार द्वारा भरा जाएगा/To be filled by the Candidate)

पंजीकरण सं./Registration No. : 577067

अभ्यर्थी का नाम/Name of Student : Aishwarya Verma

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

19th Dec '21

**सामान्य अध्ययन (प्रश्न पत्र-III)
GENERAL STUDIES (Paper III)**

केंद्र

Centre

Rajendra
Nagar.

निरीक्षक के हस्ताक्षर
Invigilator's Signature

Rajendra

	महत्वपूर्ण अनुदेश	Important Instructions
	उम्मीदवारों को नीचे उल्लिखित निर्देश सावधानी से पढ़ लेने चाहिए। किसी भी निर्देश का उल्लंघन करने पर उम्मीदवारों को मिलने वाले अंकों में कटौती, उम्मीदवारी रद्द या आयोग के परवर्ती परीक्षाओं के लिए वर्जित करने इत्यादि के रूप में दण्डित किया जा सकता है।	Candidates should read the undermentioned instructions carefully. Violation of any of the following instructions may entail penalty in the form of deduction of marks, cancellation of candidature, debarment from further Examination of the Commission etc.
1	(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें। (ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पंजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।	(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates. (b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet
2	अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।	Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.
3	परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।	Do not make any direct/indirect appeal/threat to the examiner.
4	उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।	Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.
5	उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।	Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.
6	प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।	Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.
7	प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।	Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.
8	यदि आप अपने किसी उत्तर को रद्द करना चाहते हैं तो उसे पेन से काट दें तथा उस पर "रद्द" लिख दें, अन्यथा उसका मूल्यांकन किया जा सकता है।	If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.

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परीक्षक के हस्ताक्षर Signature of Examiner(s)	

प्राप्तांक के विवरण (परीक्षक द्वारा भरा जाए)/ Marks Details (To be filled by the Examiner(s))

प्रश्न सं. Q. No.	अंक Marks		प्रश्न सं. Q. No.	अंक Marks	
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		
उप-योग (A) Subtotal (A)			उप-योग (B) Subtotal (B)		
सकल योग (A+B) / GRAND TOTAL (A+B)					



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निर्धारित समय: तीन घंटे

Time Allowed: Three Hours

अधिकतम अंक: 250

Maximum Marks: 250

प्रश्न-पत्र संबंधी विशेष अनुदेश

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions.

There are **TWENTY** questions printed both in **HINDI** and in **ENGLISH**.

All questions are compulsory.

The number of marks carried by a question/part is indicated against it.

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 a medium other than the authorized one.

Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.

Keep the word limit indicated in the questions in mind.

Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.

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.

भारत में कृषि प्रसार से सम्बद्ध मुद्दों का उल्लेख करते हुए, राष्ट्रीय कृषि अनुसंधान प्रसार प्रणाली को सुदृढ़ बनाने में कृषि विज्ञान केंद्रों (KVKs) की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

Stating the issues associated with agricultural extension in India, discuss the role of Krishi Vigyan Kendras (KVKs) in strengthening the national agricultural research extension system. (Answer in 150 words)

10

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
Candidates must not write on this margin

In India, over 50% of population depends on Agriculture which adds to around 16% of GVA. our agricultural system is characterised by low mechanisation and primitive methods.

One such reason is agricultural extension issues that disseminates the information to farmers and support them in better agricultural practices.

Issues

- (1) Infrastructural issues: such as improper irrigation system, low mechanisation.
- (2) poor inputs: Seed replacement rate is low, fertilizer usage is not rational.
- (3) low awareness among farmers and communication gap with govt.
- (4) institutional issues - such as low bank credits.

- (5) failure of land reforms.
(6) low levels of private participation.

[eg] Modal contract farming act 2018 has not been effective.

Role of Krishi Vigyan Kendras:

• Krishi Vigyan Kendras are centres that can help in fostering innovation in the agriculture, and boost productivity through:-

- better farming techniques,
- better interaction with farmers,
- improving R&D in agriculture,
- boosting the quality of inputs used for better productivity,
- Act as a bridge b/w farmer and govt.

Niti aayog strategy for new India @75 envisages transformation of farmers into "Agripreneurs" in which reforms in agriculture extension can play a crucial role

2.

भारत में, खाद्य प्रसंस्करण क्षेत्रक मूल्य संवर्द्धन की अपार संभावनाओं के कारण एक उच्च संवृद्धि और उच्च लाभ के क्षेत्रक के रूप में उभर रहा है। चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

In India, the food processing sector is emerging as a high-growth and high-profit sector due to its immense potential for value addition. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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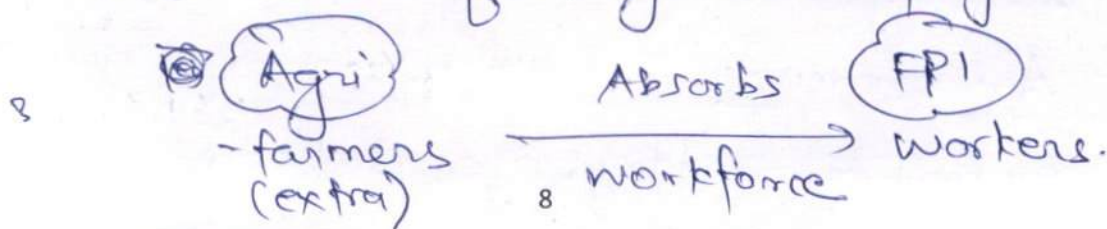
Food processing sector involves processing of agricultural food into better quality products for consumption. It employs around 1.93 million people and contributes to 10% of exports in India.

FPI (High growth - high profit sector) :-

① Rising Demand - With income of people increasing, the demand for better quality products is increasing

eg Demand for packed items in rural areas.

② Employment - 1.93 million people specially has the ability to counter the issue of disguised employment



③ Export potential: presently only 10% but has the ability to diversify

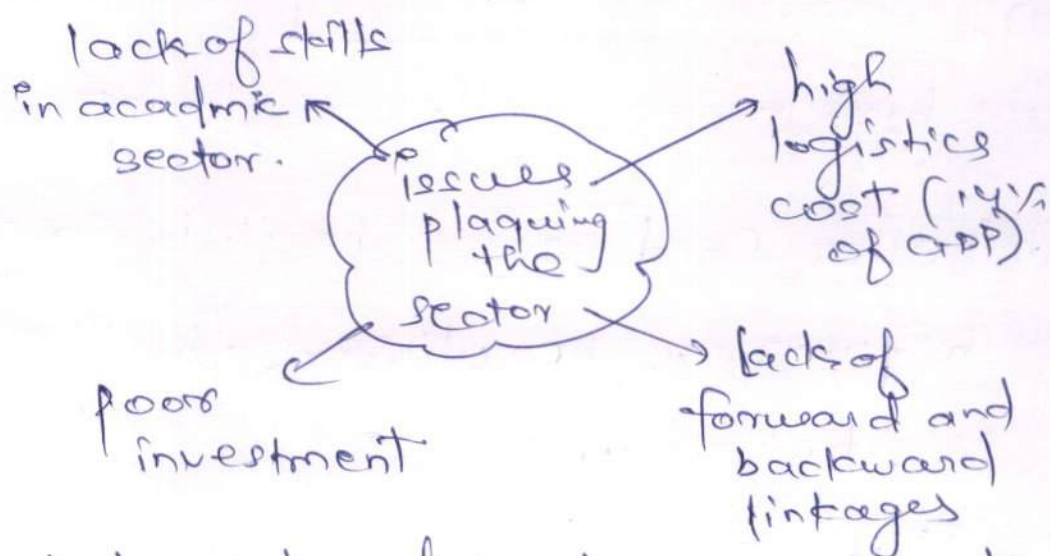
eg India → largest milk producer

↓
But low share in international market due to less processing

④ potential to increase farmers income with better price.

⑤ Quality of food standards increase leading to better health and standards of life

⑥ less wastage of food resources due to increased shelf life



Govt. has released Food processing policy 2019 and has launched SAMPADA scheme for development of sector.

3.

पशुधन आधारित एकीकृत कृषि प्रणाली (IFS) की अवधारणा की व्याख्या करते हुए, इसके लाभों पर चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

Explaining the concept of livestock-based Integrated Farming System (IFS), discuss its benefits.
(Answer in 150 words)

10

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
Candidates must not write on this margin

With increasing vagaries of climate change, agriculture is becoming prone to fluctuation. To increase resilience livestock based Integrated farming system (IFS) is suggested.

Livestock based IFS is the linkage of agricultural practices along with livestock rearing.

Benefits

(i) Income diversification for farmers
∴ high income, better resilience

(ii) Better land use: - The fallow area in farm can be utilised for the livestock rearing

(iii) Improve nutrition - with inclusion of eggs, milk etc in the diet
∴ leading to better health and

productivity

(iv) Asset building for farmers.

(v) With diversification, the chances of getting formal credit are better.

(vi) Minimise risks:

eg Agriculture → Can rely on livestock.
↓
failure of monsoon

(vii) Can generate more employment & counter disguised employment

Issues → productivity of livestock is low,
→ issue of management within farm,
→ high prevalence of FMD (Foot & mouth diseases).

~~Ques~~ Niti aayog in @75 document envisaged conversion of APMC act to APML Act (Agricultural produce & livestock management act) to promote Livestock base IFS.

4.

जहाँ भारतीय मूल के व्यक्ति (PIO) विश्व भर में उद्यमिता का नेतृत्व कर रहे हैं, वहीं भारत में अभी भी उद्यमिता दर सबसे कम है। चर्चा कीजिए। साथ ही, भारत में उद्यमिता की गति को बढ़ाने के लिए उठाए गए नीतिगत उपायों का भी उल्लेख कीजिए। (उत्तर 150 शब्दों में दें)

While Persons of Indian Origin (PIO) are spearheading entrepreneurship across the world, India still has one of the lowest entrepreneurship rates. Discuss. Also, state the policy measures that have been taken to increase the pace of entrepreneurship in India. (Answer in 150 words) 10

India has the 3rd largest startup ecosystem in the world after US & China, still it is highly underutilised.

Various CEOs of giant tech. companies are Indians.

- Twitter
- Adobe
- Google
- Microsoft

Despite this entrepreneurship rates is low due to:

① Lack of risk taking attitude

- Schooling and upbringing is such that it prevents risk taking

② Lack of proper entrepreneurial training in school or college from the early rate.

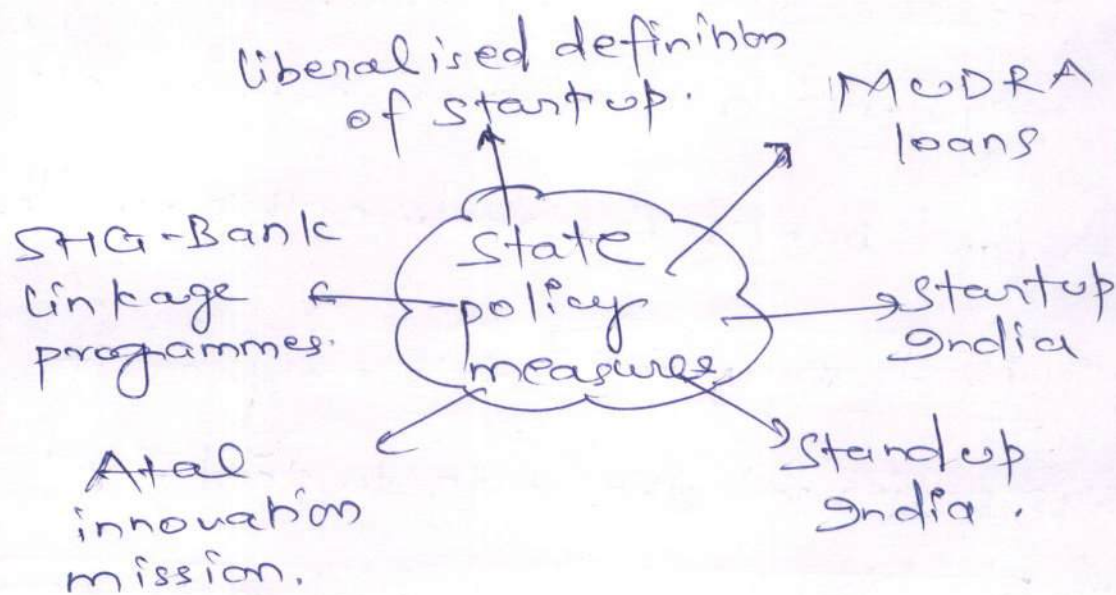
उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
Candidates must not write on this margin

③ Lack of innovation culture: 'confined only to cities like Bangalore, Mumbai etc.

④ lack of investment and funding which demotivates one at early stage

⑤ Lack of institutional support.
eg Over 80% startup fails within first 5 years in India.

⑥ Regulatory compliance is high.
eg India ranks poor in enforcing contracts.



Entrepreneurship can transform the "job seeking" culture to "job creating" culture for an inclusive growth.

5.

'भूमि बैंक' अर्थव्यवस्था को प्रोत्साहन देने और भारत में व्यापार सुगमता (ईज ऑफ डूइंग बिज़नेस) को बढ़ावा देने में महत्वपूर्ण भूमिका निभा सकते हैं। चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

'Land banks' can play a critical role in boosting the economy and promoting ease of doing business in India. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
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Land banks are the space created by the govt. to pool the land where a company can come and set up its plant with less regulatory compliance.

Plays a critical role in EODB !

(i) Starting a business - India faces issues in this part due to excessive regulation and contract enforcement.
→ Land banks can reduce this hurdle

(ii) Land acquisition gets easy as it is easier for the state to pool land

(iii) Less disputes and judicial mechanism

- like less cases that moves to courts. thus reducing delays

(iv) Attract FDI and investment.

(v). create jobs with factories setting up.

Issues:

- effective rehabilitation of the people from which land is pooled.
- still there can be disputes with people
- quality of land to be provided.
- eg can be diversion of agricultural land
- Environment issues: Deforestation, proper EIA mechanism not followed

India presently ranks 63rd in world bank's EODI, Land Banks have the

potential to improve this hence govt. should look forward towards a comprehensive act accomodating the issues as well.

6.

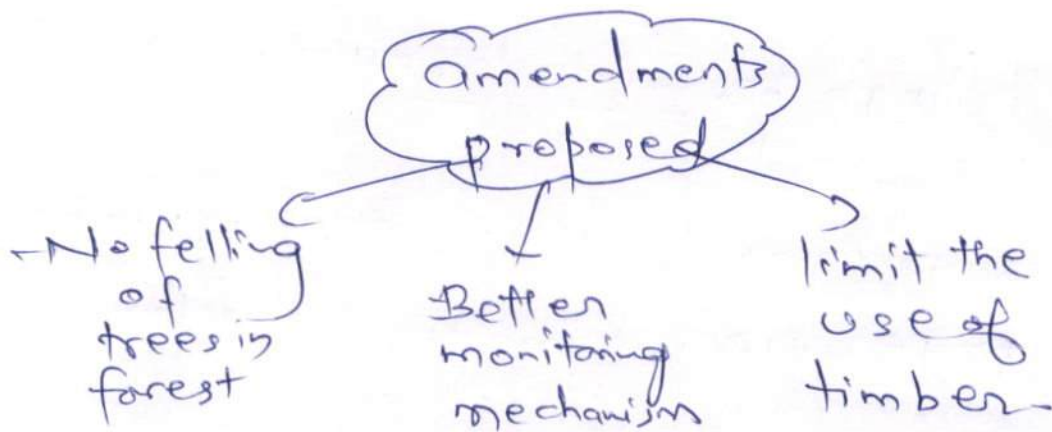
वन संरक्षण अधिनियम (FCA) में प्रस्तावित संशोधन, न केवल वन अधिकार अधिनियम (FRA) के विपरीत हैं, बल्कि इनके कारण भारत को जलवायु परिवर्तन पर अपनी प्रतिबद्धताओं को प्राप्त करने में देरी होने की भी संभावना है। चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

The proposed amendments to the Forest Conservation Act (FCA) are not only antithetical to the Forest Rights Act (FRA), but are also likely to delay India achieving its commitments on climate change. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस वार्ड में नहीं लिखना चाहिए
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Forest Conservation act aims to regulate the use of forest resources by government and prevent misuse.



Antithetical to FRA!

- ① Can affect tribals livelihood of MFP. — affects scheduled area.
- ② Community resources can be compromised

③ leads to conflict b/w tribals & govt. (Delay in EIA process).

Delay climate change efforts

④ Decline in C-sinks -

⑤ Release of CO₂

⑥ Delay in reaching net zero emission - C-stock decline -

Eco-centric approach should be followed for effective management of forest resources -

7.

शहरी क्षेत्रों में बाढ़ की समस्या न केवल नदियों के उफान के कारण है, बल्कि उन अनियोजित तरीकों के कारण भी है जो हमारे नगर, शहरीकरण की प्रक्रिया में अपना रहे हैं। चर्चा कीजिए। इस संदर्भ में, शहरी बाढ़ पर राष्ट्रीय आपदा प्रबंधन प्राधिकरण के दिशा-निर्देशों का उल्लेख कीजिए। (उत्तर 150 शब्दों में दें)

The problem of flooding in urban areas is not only due to overflowing rivers, but also the uninformed ways in which our cities are coping with urbanisation. Discuss. In this context, mention the National Disaster Management Authority guidelines on urban floods. (Answer in 150 words)

10

urban floods are floods due to ^{of water} accumulation and submergence of cities. Many cities like Mumbai, Chennai, frequently faces urban floods.

Reasons

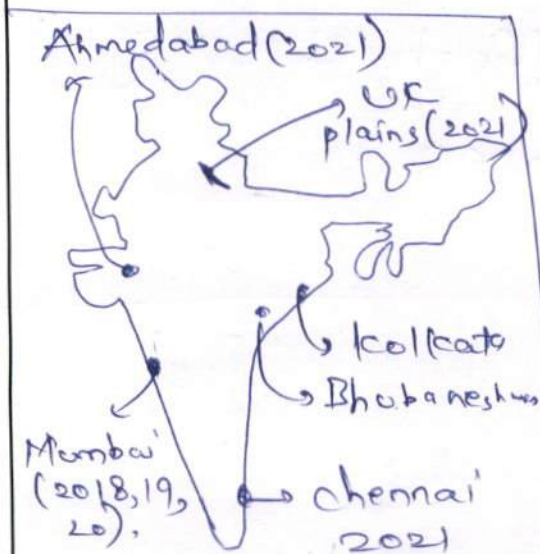


Fig. urban floods in recent times

(i) Improper drainage: cities designed without proper flood consideration

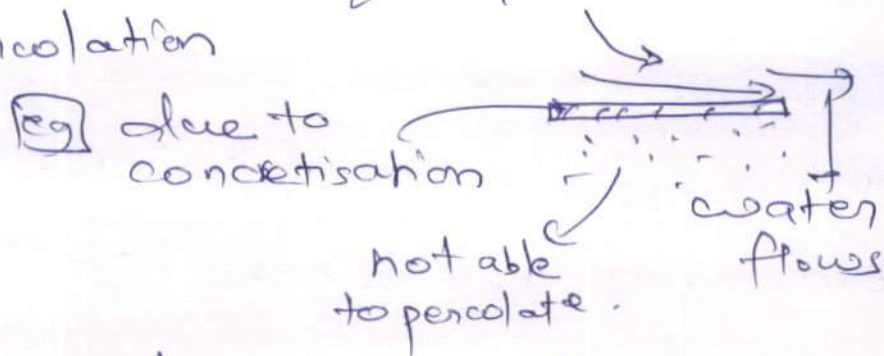
(ii) Encroachment of wetlands:

[eg] Chennai floods 2021 was more due to this factor

(iii) Congestion and clogging: due to which flow of water is reduced

[eg] Clogging of ~~river~~ Mahim Bay in Mumbai.

- (iv) Mismanagement of dams. eg Uttarakhand and.
 (v) Destruction of aquifers. i.e. low percolation



- (vi) Increased intensity of rain in short span. (climate change).

NDMA guidelines:

- ① planned drainage system in cities
- ② No encroachment of wetlands on River banks for city expansion.
- ③ Early warning system should be devised.
- ④ Afforestation and maintenance of aquifers eg NAQUIM (aquifer management)

Mumbai city has set up IFLOWS (an early warning system for urban floods) which can be replicated to other cities.

इसरो अब केवल उपग्रहों के प्रक्षेपण तक ही सीमित नहीं है, बल्कि यह वर्षों से विकास गतिविधियों में अपनी भूमिका को लगातार बढ़ा रहा है। विवेचना कीजिए। (उत्तर 150 शब्दों में दें)

ISRO is no longer confined only to the launching of satellites, but it has been constantly enlarging its role in development activities over the years. Discuss. (Answer in 150 words)

10

Indian Space research organisation
(ISRO) was established in 1960 as
a space agency which has evolved ^{to} more
in recent times

c) Economic :- Data from space satellites is now being used in service delivery
eg Zomato

(ii) Strategic: Help in defense related activities

(iv) International diplomacy → GSA T → South Asian satellites.

(vi) used for land surveys and mapping.

(vii) Disaster management: field survey,
early warning system, prediction
of cyclone paths.

(viii) Involved in promoting research

(eg) YUVIKA programme of ISRO.

(viii) Information dissemination to the
farmers, fishermen regarding resources

(eg) GEMINI app.

(ix) used for exploration of minerals &
resources through techniques like
LIDAR.

(x) Collaboration with other Nations
for R&D, exploration

(eg) NISAR = (ISRO + NASA)

ISRO has now evolved both as hard
power and soft power component
for India.

9.

राज्य और गैर-राज्य अभिकर्ताओं द्वारा महत्वपूर्ण सूचना अवसंरचना (CII) को लक्षित करने के पीछे उत्तरदायी कारणों को बताइए। साथ ही, भारत सरकार द्वारा अपने CII को सुरक्षित करने के लिए उठाए गए कदमों पर भी चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

State the reasons behind targeting of Critical Information Infrastructure (CII) by state and non-state actors. Also, discuss the steps taken by the Indian government to secure its CII. (Answer in 150 words)

10

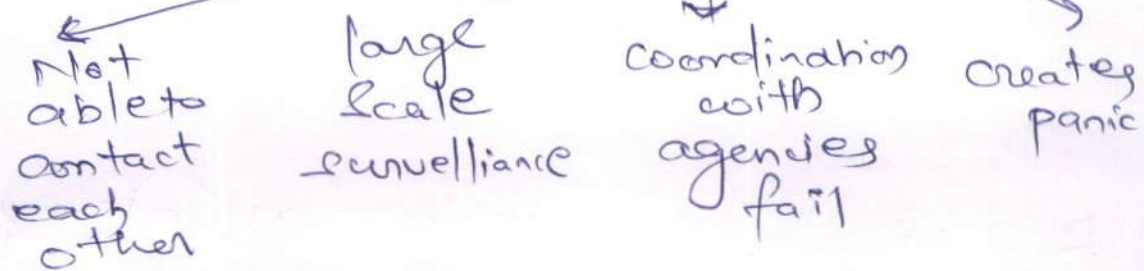
उम्मीदवारों को
इस हार्डिंग में
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Critical Information Infrastructure (CII)
is the important infrastructure failure
of which can affect the administration
as well as threaten the national
security. eg Attack on Kudankulam
Nuclear plant

Reasons for targeting CII:

- (i) Can create panic on large scale.
- (ii) Can lead to failure of administrative
machinery.
- (iii) Can affect law and order situation.
- (iv) Can leak sensitive information.
- (v) Can cause energy crisis: eg electric
grid
- (vi) Can affect privacy of people on
a large scale.

eg Attack on Communication Lines



Steps by Indian govt:

- (i) National centre for protection of critical infrastructure
- (ii) Deployment of CERT-In team.
- (iii) Mandatory reporting of frauds by IT companies (IT Act 2008)
- (iv) National level hackathons to innovate.
- (v) IAC as an innovation centre for coordination.

With rising IT influence, it is also essential to upgrade the cyber security infrastructure. India has recently finalised its cyber security policy in 2010.

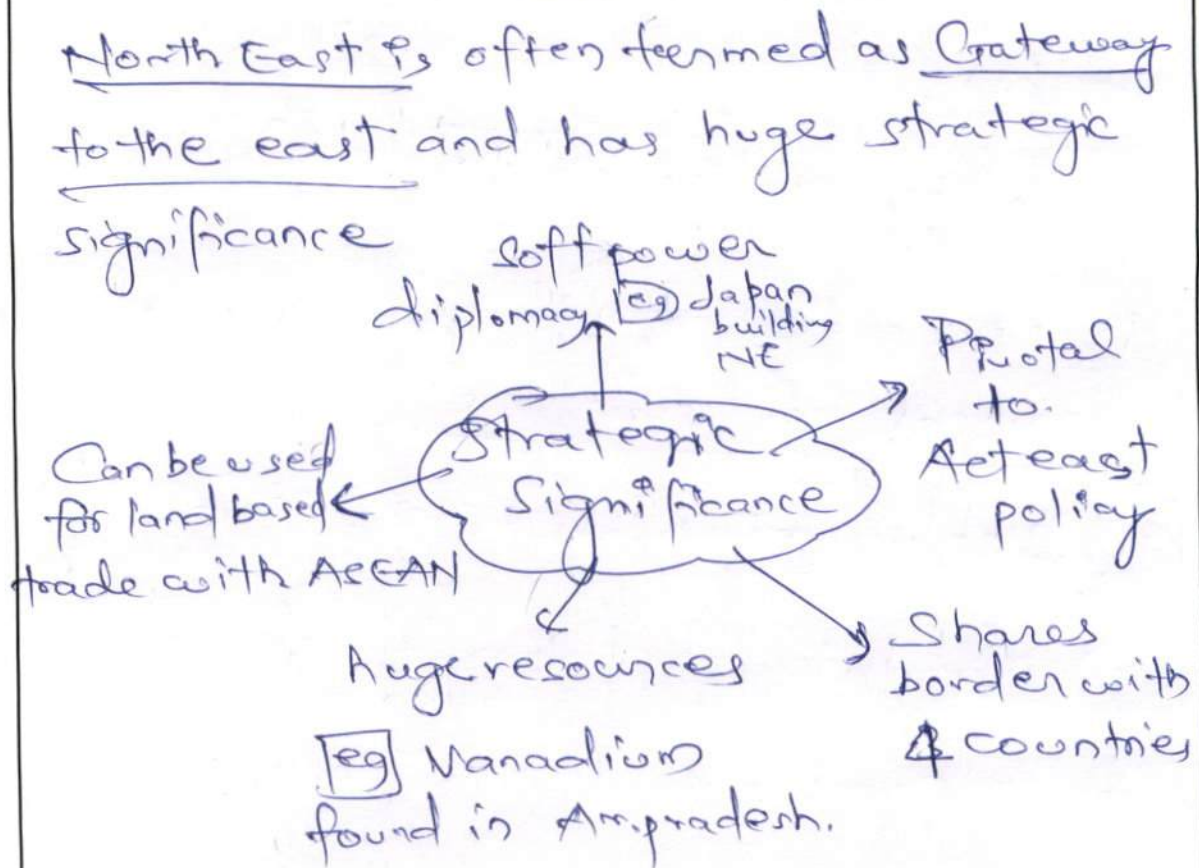
10.

पूर्वोत्तर भारत के रणनीतिक महत्व के बावजूद, इस क्षेत्र को कई सुरक्षा खतरों का सामना करना पड़ता है। चर्चा कीजिए। साथ ही, क्षेत्र में शांति और स्थिरता सुनिश्चित करने के लिए सरकार द्वारा उठाए गए कदमों का भी उल्लेख कीजिए। (उत्तर 150 शब्दों में दें)

Despite the strategic significance of North-East India, the region faces several security threats. Discuss. Also, state the measures taken by the government to ensure peace and stability in the region. (Answer in 150 words)

उम्मीदवारों को
इस हार्डिप में
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Issues faced

- (i) internal insurgency due to groups like ULFA, NSCN etc
- (ii) illegal migration affecting demography
- (iii) Rising conflicts due to increased illegal migration.

(iv) Insurgency from cross border.

eg extremist taking refugee.

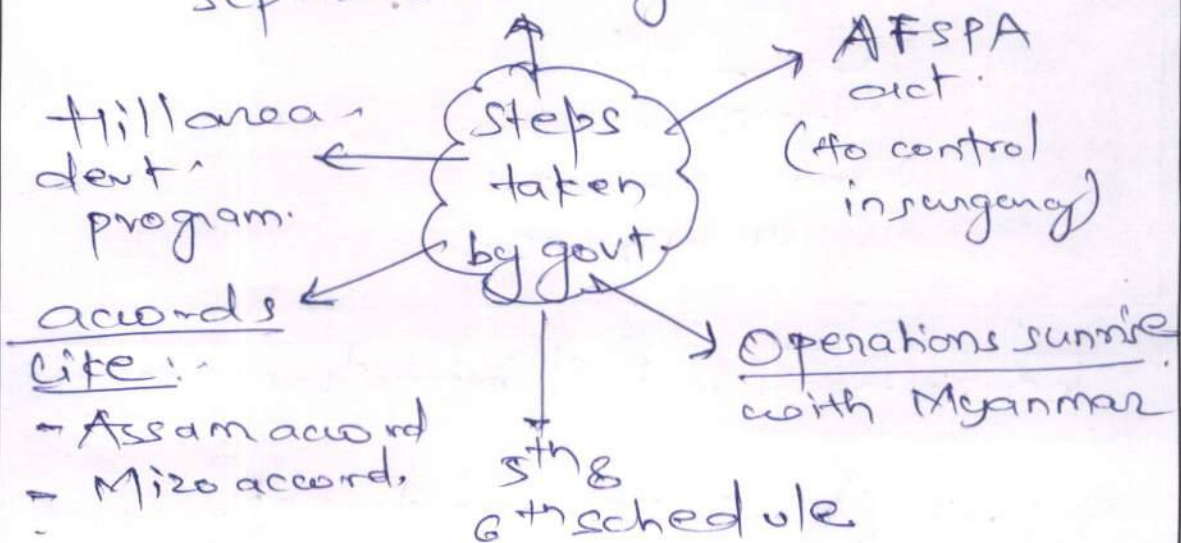
(v) Border disputes. eg Ar. Pradesh is claimed by china.

(vi) Difficult and Rugged terrain.
in the region.

(vii) Dissent of people due to Human rights violation. eg Recent killing of 14 civilians by Army in Nagaland.

(viii) poor connectivity and threat of China to capture chicken's neck.

separate ministry (MODONER).



Govt. should strengthen the border infrastructure as well as develop the area to get the best results in north-east

11.

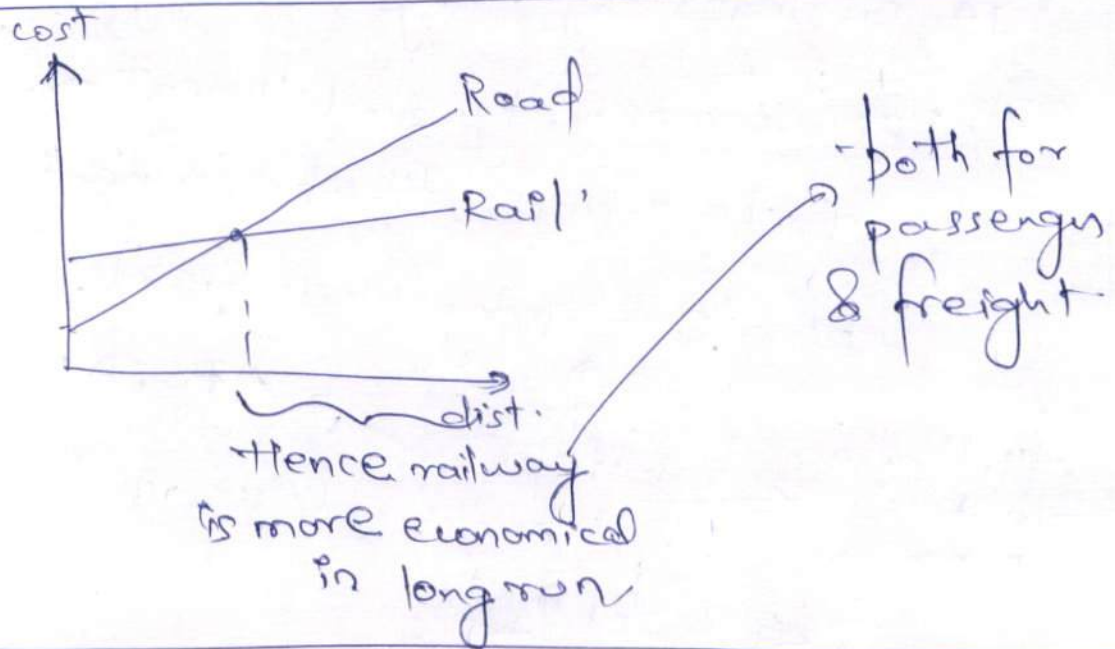
भारतीय रेलवे को लंबे समय से अल्प निवेश की समस्या का सामना करना पड़ा है, जिसने इसके परिचालन के प्रमुख क्षेत्रों पर प्रतिकूल प्रभाव डाला है। इस संदर्भ में, बुनियादी ढांचे के तीव्र निर्माण में रेलवे के समक्ष आने वाली चुनौतियों पर चर्चा कीजिए। साथ ही, इस संबंध में सरकार द्वारा उठाए गए कदमों का भी उल्लेख कीजिए। (उत्तर 250 शब्दों में दें)

Indian Railways has suffered from chronic under-investment, which has adversely impacted key areas of its operations. In this context, discuss the challenges faced by the railways in speedy creation of infrastructure. Also, mention the steps taken by the government in this regard. (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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15

India has one of the longest rail network in the world and is very essential for transport due to its cheap nature.

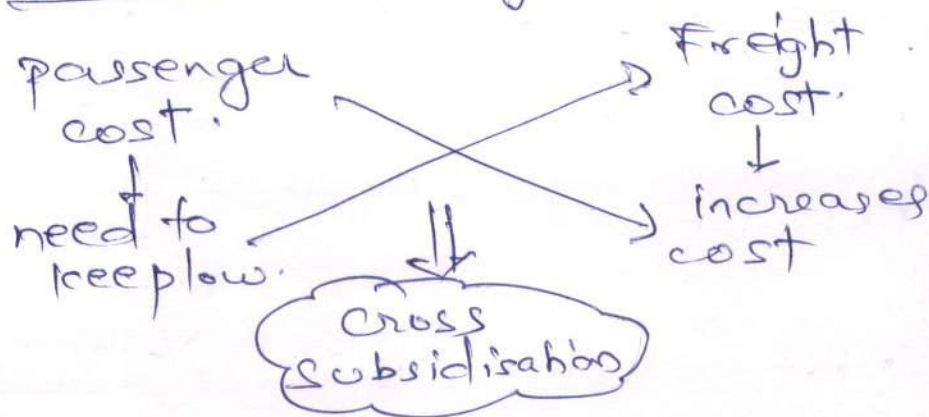


Issues faced in Rail infrastructure:

(i) Lack of private investment.

(ii) Railway has long been under govt. control due to its critical nature

(ii) Unattractive freight prospects.



(iii) Lack of revenue generation

- low passenger income
- low freight usage

(iv) High operating cost ratio - around.

0.98 - due to which revenue is very less

(v) less budgetary allocation to rail

(vi) Issue of poor management.

eg Delays in trains.

(vii) lack of modern technology in rail architecture.

(viii) Huge maintenance cost hence less Capital generation.

Steps by govt:

(i) Dedicated freight corridors to promote freight

[eg] 2 DFCs are functional



(ii) National Rail Vikas Yojana

(iii) Krishi rail to improve the agricultural connectivity

(iv) Increasing private participation

[eg] Tejas express leased to private company

Way forward:

→ enhance private participation in other areas [eg] Coach building

→ Diversification of services

→ Rationalisation of fares

Improving Rail infrastructure can help bring down logistics cost to 8% of GDP (presently - 14%)

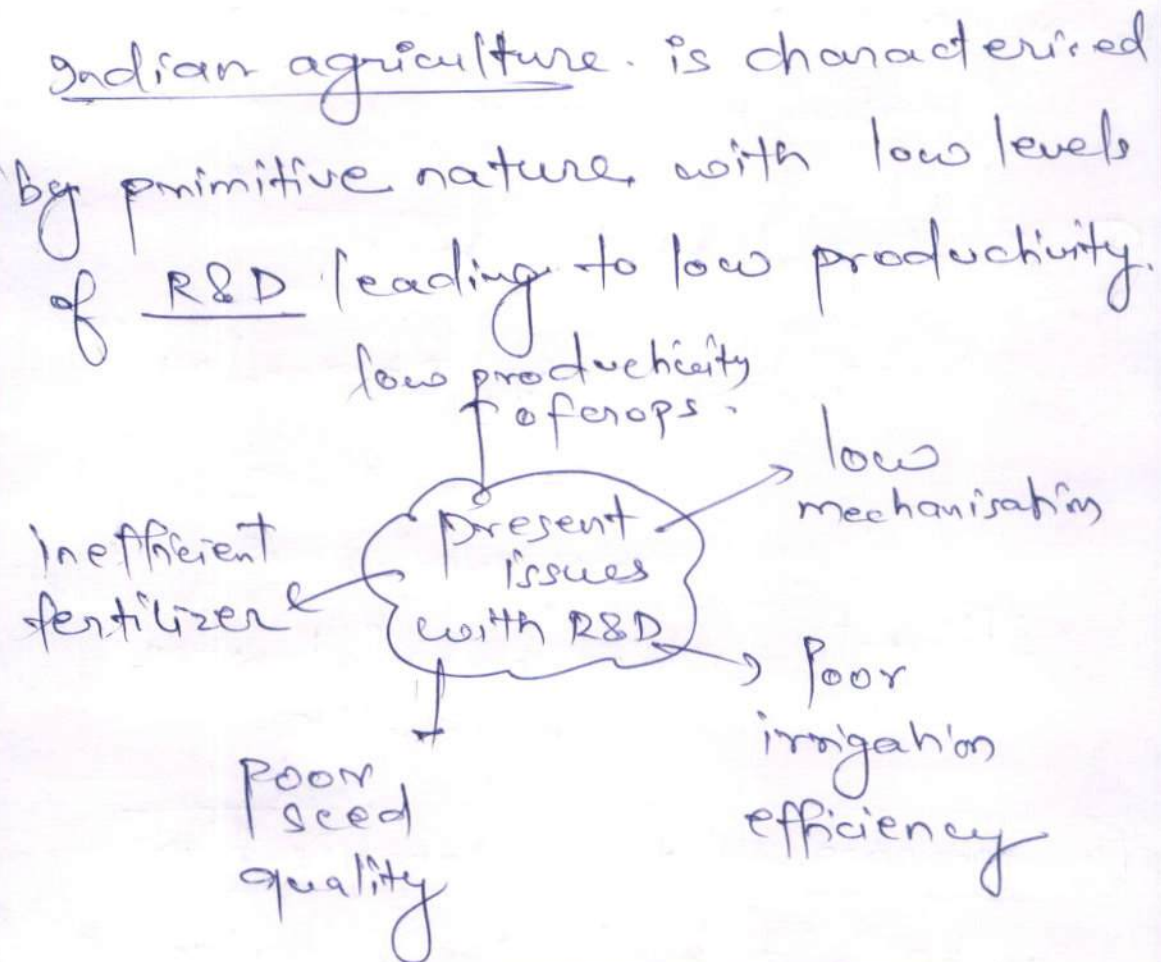
12.

किसानों की आय को दोगुना करने के भारत के उद्देश्य को साकार करने हेतु कृषि प्रणाली के अंतिम बिंदु तक के दायित्वों पर ध्यान देने के साथ अनुसंधान और विकास (R&D) के लिए एक परिवर्तनकारी दृष्टिकोण आवश्यक है। विवेचना कीजिए। (उत्तर 250 शब्दों में दें)

A disruptive approach to research & development (R&D), with a focus on last mile obligations of the agricultural system is necessary to realize India's objective of doubling farmer's income. Discuss. (Answer in 250 words)

उम्मीदवारों को इस हिसाब से नहीं लिखना चाहिए
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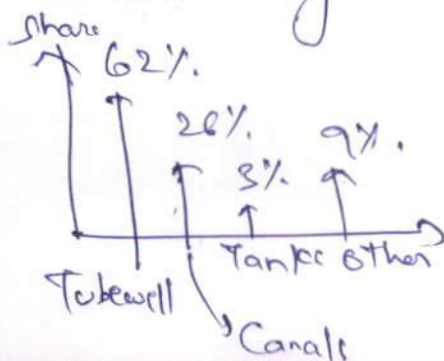
15



Disruptive approach to R&D in Agriculture

Can enhance:-

(i) Irrigation usage :: presently 48% area irrigated.



→ Overreliance on tube well.

→ η is less (efficiency).

- with better R&D

• increase in efficiency, less water wastage, better soil condition

(eg) Israel → high water use efficiency in Ag → ∴ productive even in desert

(ii) Quality of inputs improve:

↳ Seeds - HYV, Bt seeds

- better resilience

- more productive

- Efficient → less harmful, more productive
fertilizers

(iii) Increase in farm mechanisation:-

Can be more productive in extensive farming

(iv) Better food processing ability -
increased quality & shelf life.

(v). Improve logistics [eg] Cold value
chain infrastructure to transport perishable products.

(vi) innovation in agricultural marketing
eg. use of e-NAM
- real time stock monitoring.

उम्मीदवारों को
इस कक्ष में
नहीं लिखना
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(vii) improvement in livestock management
& productivity (eg) Rashtriya Gokul
mission.

Ways to ensure:

- promote agricultural research in
universities through scholarship.

- increase R&D budget

present 0.6% $\rightarrow$ 2% GDP

(increase in Ag.
as well)

- better collaboration with private
sector.

eg) Krishi Vigyan Kendras established
by govt.

Govt. has setup NAHEP (National
Agricultural higher education Programme)
to ensure better R&D in Agricultural
sector.

13.

भारत की विद्युत वितरण कंपनियों और विद्युत ग्रिड को जीवाश्म ईंधन से अक्षय ऊर्जा के अधिक संधारणीय रूपों में संक्रमण हेतु सुधारों से गुजरना होगा। चर्चा कीजिए। (उत्तर 250 शब्दों में दें)

India's power distribution companies and electrical grids must undergo reforms to transition from fossil fuels to more sustainable forms of renewable energy. Discuss. (Answer in 250 words) 15

उम्मीदवारों को इस हद्दिए में नहीं लिखना चाहिए
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India has recently committed to "net zero emissions by 2070" as well as

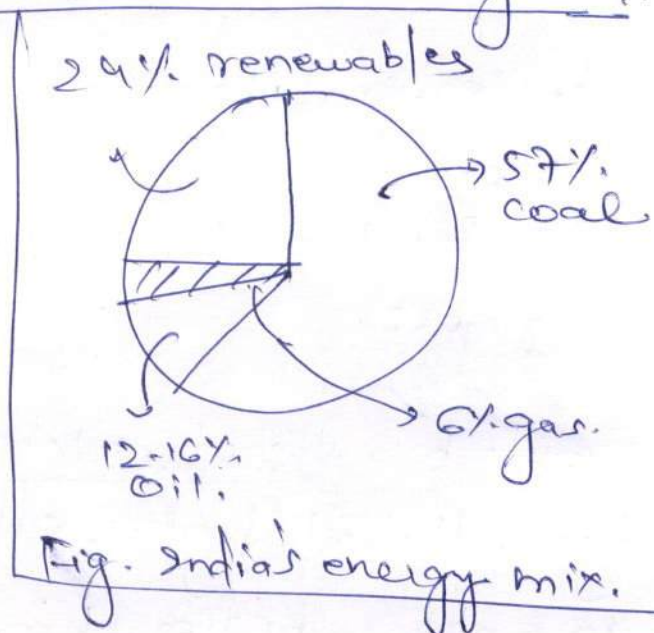
reduction in absolute emissions in COP 26, UNFCCC Glasgow Summit

This would require to change the present energy mix scenario into a more sustainable one

Reforms in discoms and electric grids:

(i) Diversify energy sources

More focussed attention to renewables.



(ii) larger share of renewables in grid. [eg] presently not included in

main grid due to stability issues.

(iii) Reduce wastage of electricity.
[eg] Transmission losses.

(iv) Reduce theft of electricity

[eg] In Uttarakhand 30% electricity
is lost to theft.

Case study: Smart metering:

- Real time monitoring of electricity
grid and control through server.

Reduce
theft

less
wastage.

Better
compliance

(v) Investment in discoms sector
to revamp their losses. [eg] UDAY
Scheme

→ This can make scope for newer

renewable purchase obligations:

(vi) private investment through (PPP)
models to bring innovation in
grids as well as better
management.

(vii) Demand supply management:

- Rationalisation of demand by increasing efficiency

[eg] WALA scheme → shift to LED-

- Rationalisation of power

[eg] Gram Jyoti Yojana, Gujarat 2004

- o Separate electricity to feeder & households

(viii) Establishment of hybrid parks
to bring stability to grid.

With responsible consumption and better reforms in the discoms and grid we can achieve SDG 7 of clean & affordable energy by 2030.

14.

भारत में आगत-सघन (इनपुट इंटेंसिव) कृषि की प्रथा में, इसकी अस्थिरता और नकारात्मक परिणामों के कारण, बृहद पैमाने पर बदलाव की आवश्यकता है। इस संदर्भ में, निम्न बाह्य आगत संधारणीय कृषि (LEISA) के महत्व पर चर्चा कीजिए। (उत्तर 250 शब्दों में दें)

The practice of input-intensive agriculture in India needs a massive overhaul due to its unsustainability and negative consequences. In this context, discuss the significance of Low External Input Sustainable Agriculture (LEISA). (Answer in 250 words)

15

उम्मीदवारों को इस हार्गिर् में नहीं लिखना चाहिए
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~~As~~ As per Agricensus 2015 - Average landholding size is 1.08 ha due to which India follows an intensive agriculture model.

Issues with input intensive agriculture:

(i) pressure on soil which decreases productivity in long run

[eg] Soil Salinisation in Punjab

(ii) Irrational use of fertilizer

[eg] $\text{Ideal NPK} = 4:2:1$
India = $6.8:4.2:1$

→ This leads to pollution.

(iii) problem of overirrigation

[eg] excessive use of tubewells in north India.

→ It leads to dual problems!:

ground
water
depletion

Soil
Salinisation

(iv) low level of farm mechanisation

(v) Declining productivity & Yield of
crops

(vi) Decline in export standards of
the agricultural products

Significance of LEISA:

(i) It helps in cultivation of nutritious
crops,

hidden
→ tackle hunger

(ii) Better export standards and
food processing abilities

[eg] Increasing demand for organic
products in abroad.

(iii) Better health of farmers

- less exposed³⁶ to fertilizers, pesticides

eg) farmers death in Maharashtra due to pesticide exposure.

(iv) Better health of public

↳ low levels of Bioaccumulation & Biomagnification.

(v) Better health of soil.

↳ less salinisation

- Better recovery.

(vi) less wastage of water and improved efficiency.

(vii) Low input cost to farmers ↗

Better income.

(viii) Less emission from agriculture ↗
Environment friendly.

Govt. is actively pushing for LEISA methods. One such prospect is promotion of ZBNF. (Zero budget Natural farming).

15.

हाल ही में जारी IPCC की छठी आकलन रिपोर्ट (AR6) - 2021 को मानवता के लिए 'कोड रेड' माना गया है। इस संदर्भ में, भारत पर विशेष ध्यान देते हुए इस रिपोर्ट में उजागर की गई विभिन्न चिंताओं की विवेचना कीजिए। साथ ही, इस रिपोर्ट द्वारा प्रदत्त उपचारात्मक उपायों को भी सूचीबद्ध कीजिए। (उत्तर 250 शब्दों में दें)

The recently released IPCC Sixth Assessment Report (AR6) - 2021 has been deemed as 'code red' for humanity. In this context, discuss the various concerns raised in the report with special focus on India. Also, enlist the remedial measures given by the report. (Answer in 250 words) 15

IPCC in its 6th Assessment report
WG I has pointed out that the global rise in temperature has already reached 1.09°C above pre-industrial levels.

Concerns with respect to India:

① Rise in natural calamities:

→ Vagaries of monsoon

↓
 - delay

- Concentration in time & space leading to floods

→ Rise in supercyclones frequency

[eg] Amphan (2020), Nisarg (2020), Tauktae (2021).

→ Glacial lake outburst floods

[eg] Uttarakhand (2015).

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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⑪ Sea level rise: around 1.3 mm/year in Indian Ocean.

this leads to coastal submergence affecting habitat

[eg] Monroe Thuvuthu known as "sinking village" in Kerala

→ leads to coastal erosion,

⑫ Affects agricultural yield and productivity

⑬ Affects health of individuals

- heat strokes
- rise in epidemics (mosquito borne diseases).

⑭ leads to water scarcity

[eg] 21 cities on threat to zero ground water by 2030 (Niti Aayog's Cwmi).

Remedial measures.

→ It suggests a 2 pronged strategy to combat this:-

(i) Adaptation

- resilient agriculture
- better disaster management

Coastal
areas

manage
health (epidemics)
system -

= future rehabilitation programmes -

eg Tuvalu - Aus agreement to host
climate refugees -

(ii) Mitigation

- adherence to climate targets.
- Afforestation
- use of climate engineering tools
 - reflectors in space
 - ↑ albedo of surface
- technologies like CCUS (Carbon Capture Utilisation & storage)

climate change is global connected phenomenon, hence global consensus and cooperation is necessary as highlighted in, COP 26 Glasgow summit.

16.

भोपाल गैस त्रासदी से लेकर विशाखापत्तनम में गैस रिसाव तक कई रासायनिक आपदाओं ने भारत में खतरनाक रसायनों (HAZCHEM) द्वारा उत्पन्न जोखिमों को ध्यान में लाया है। इसके दृष्टिगत, भारत में रासायनिक आपदा प्रबंधन (CDM) की तैयारियों के साथ-साथ इसमें व्याप्त कमियों की भी विवेचना कीजिए। (उत्तर 250 शब्दों में दें)

Multiple chemical disasters from the Bhopal gas tragedy to gas leak in Visakhapatnam have brought into focus the risks posed by hazardous chemicals (HAZCHEM) in India. In view of this, discuss the preparedness as well as gaps in Chemical Disaster Management (CDM) in India. (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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chemical disaster refers to disaster caused by leakage of chemical based material posing threat to people in Vicinity:-

Chemical disasters witnessed:-



→ last year (2020) almost 116 industrial disasters took place in India.

(Many comprised of chemical disasters as well)

Risks posed:-

① Huge threat to immediate surroundings

→ Can cause death.

② Exposure can have long term health effects → affects present potential.

- effect on the offsprings } affects future potential

③ Economic losses - due to factory closure, evacuation of people, labours loss.

④ It affects the image of company thus loss of livelihood.

India's preparedness:-

→ Notified disaster in NDMA 2005.

→ Standard operating protocols in place for factories.

→ Signatories to CWC (Chemical weapons convention), Basel conventions etc.

→ QRT (Quick response teams) deployed in every city.

→ Mock drills done in factories.

Gaps:

① Lack of oversight mechanism.

② Issue of unskilled handlers

↓
Standard procedures not followed.

③ Large scale prevalence in unorganised sector

eg) e-waste → chemicals → exposed to
garbage collectors

④ Lack of awareness regarding
chemical issues.

⑤ Lack of health infrastructure -
to deal with such cases

Specific

guidelines
needs to
be formulated



Skill the
health
professionals

Strict
compliance related
to accessibility

Isolation
of such
industries

Chemical disaster is a category of
man-made disaster which with
proper efforts can be eliminated completely.

17.

महामारी के समय सार्वजनिक स्वास्थ्य से संबंधित वस्तुओं और सेवाओं के उदारीकरण की बढ़ती मांग ने वर्तमान बौद्धिक संपदा व्यवस्था के संबंध में महत्वपूर्ण मुद्दों को उठाया है। विवेचना कीजिए। (उत्तर 250 शब्दों में दें)
 The growing demand for liberalisation of public health-related goods and services amidst the pandemic has raised critical issues with regard to the current intellectual property regime. Discuss. (Answer in 250 words)

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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Intellectual property regime (IPR)

helps a company or individual to protect its innovation from being used by other entities.

eg Patents

↓
 for 20 years

It protects innovation and motivate individuals for research. However, its utility in public health related issues can be some times challenging.

Challenges:

① Ethical issues:

personal life vs profit motive.

② responsibility to promote pharmaceutical companies as well.

eg Demotivating them can reduce research.

iii emergency situation needs to be handled soon.

↳ otherwise it can harm other sector as well.

iv Such issues can affect stability of nation in long run.

high cost of research in vaccines.

high cost of vaccines

Witnessed during COVID

flooding of medical supplies

Vaccine nationalism

During COVID, various nations called for compulsory licensing of vaccines to make them cheaper in WTO.

Way forward:

i Interaction with developed world. eg funding for vaccines.

② high ethical standards in medical professionals

eg Dr. Jonas - refused to patent polio vaccines for public welfare

③ Temporary concession can be given in such cases.

India has mooted the idea of patent pooling as an innovation to balance IPR as well public health welfare.

18.

भारत में रक्षा प्रौद्योगिकियों के स्वदेशीकरण में उप-इष्टतम परिणामों के लिए उत्तरदायी कारणों पर प्रकाश डालते हुए, उन उपायों का सुझाव दीजिए जो रक्षा क्षेत्र में स्वदेशीकरण की गति को तीव्र कर सकते हैं। (उत्तर 250 शब्दों में दें) (P)

Highlighting the reasons behind suboptimal results in indigenization of defence technologies in India, suggest measures which can accelerate the pace of indigenization in the defence sector. (Answer in 250 words) (2)

15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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India import majority of its arms from foreign nations

(eg) Rafael - France
S-400 - Russia
MIG - Russia
aircraft

This makes it vulnerable to outside demands and policies

(eg) CAATSA of USA prevents arms trading with Russia.

This calls for need to indigenise defence technology.

However there are various issues:

① low level of private participation in defence industry

(eg) India - < 15% ; US > 50%

② Lack of R&D budget and environment in India

[eg] India = 0.6% GDP (need 2%)

US - 2%

China - 3%

③ Lack of investment as well as govt. interventions in the sector.

[eg] Red tapism

Regulatory compliance

④ Lack of innovation culture and start-up in this sector.

⑤ Lack of budgetary constraints

Requires huge allocation

Funds also required for social sector

Hence public sentiments against it.

⑥ Lack of collaboration in defence architecture.

Measures to improve

- ① promote PPP in defence tech.
- ② Increase FDI limit for participation
- ③ outsourcing the parts to other sector.
- ④ Rise in R&D budget (2% GDP)
- ⑤ promote defence startup.
(tax incentives etc)
- ⑥ Separate dedicated division in Ministry of defence to promote this

To enhance the sovereignty and security of the country, India should follow the spirit of Atma Nirbhar Bharat in defence sector -

19.

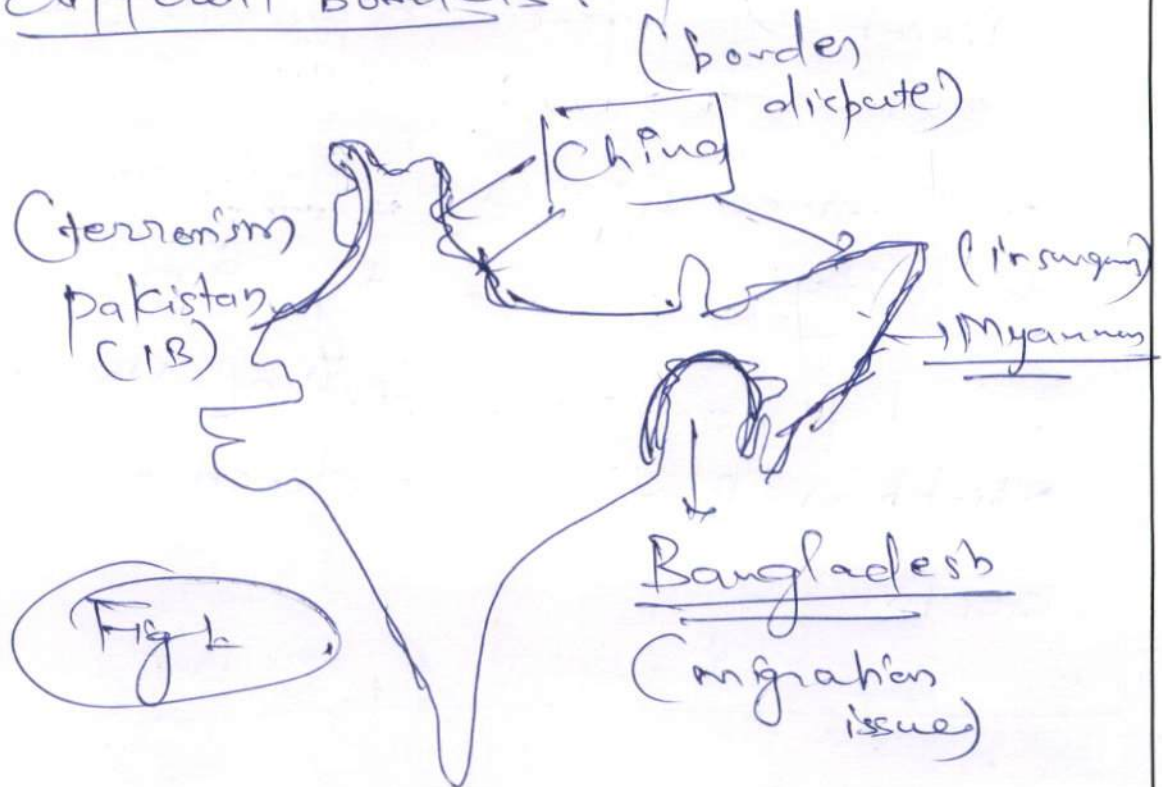
अंतर्राष्ट्रीय सीमाओं की रक्षा के लिए विभिन्न केंद्रीय सशस्त्र पुलिस बलों की अवधारणा के पीछे के कारकों पर चर्चा कीजिए। साथ ही, भारत की सुरक्षा सुनिश्चित करने में इन बलों के योगदान पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दें)

Discuss the factors behind conceptualization of different Central Armed Police Forces for guarding the international borders. Also, highlight the contribution of these forces in ensuring security of India. (Answer in 250 words)

15

Central Armed police forces are constituted by the Centre apart from Army to deal with the internal security framework.

factors for different CAPFs for different borders:-



(i) Different nature of problems:-
as highlighted in Fig 1.

[eg] BSF protects → Pak, Ban.
(terrorism)

- ITBP (China), Nepal

- Assam Rifles. (Northeast)

② Different demography
with different tribals living in
North east
(5th & 6th schedule issues)

③ Difficult topography
↓
- requires different skillset

[eg] BSF - plains → not much
effective in Northeast

Contribution of these force in security

① Development of Border infrastructure

[eg] Maitree bridge by
Indian Army

② Maintaining peace along border.

③ Ensuring confidence building
with locals → participate with
them to point infiltrators

④ protect people living in border
areas

⑤ Development in border areas
↓
Sensitive area → difficult to
develop

CAPF plays a crucial role thus
modernisation (Shekatkar Committee)
can improve their potential.

20.

धन शोधन (मनी लॉन्ड्रिंग) गतिविधियों के लिए आभासी परिसंपत्तियों के दुरुपयोग के संदर्भ में, उनकी सुभेद्यता पर चर्चा कीजिए। साथ ही, उन सुधारात्मक उपायों का भी उल्लेख कीजिए, जो आभासी परिसंपत्तियों के उपयोग से उत्पन्न जोखिमों को कम करने के लिए अपनाए जा सकते हैं। (उत्तर 250 शब्दों में दें)

Discuss the vulnerability of virtual assets in terms of their misuse for money laundering activities. Also, state corrective measures that can be taken to mitigate the risks posed by the use of virtual assets. (Answer in 250 words)

15

उम्मीदवारों को इस हशिप में नहीं लिखना चाहिए
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The recent surge in cryptocurrency has brought the debate to the utility of virtual asset and the potential for misuse.

Misuse potential :-

① Can be used for illegal activities

money
laundering

organised
crime

terrorism

② Can increase the financial frauds

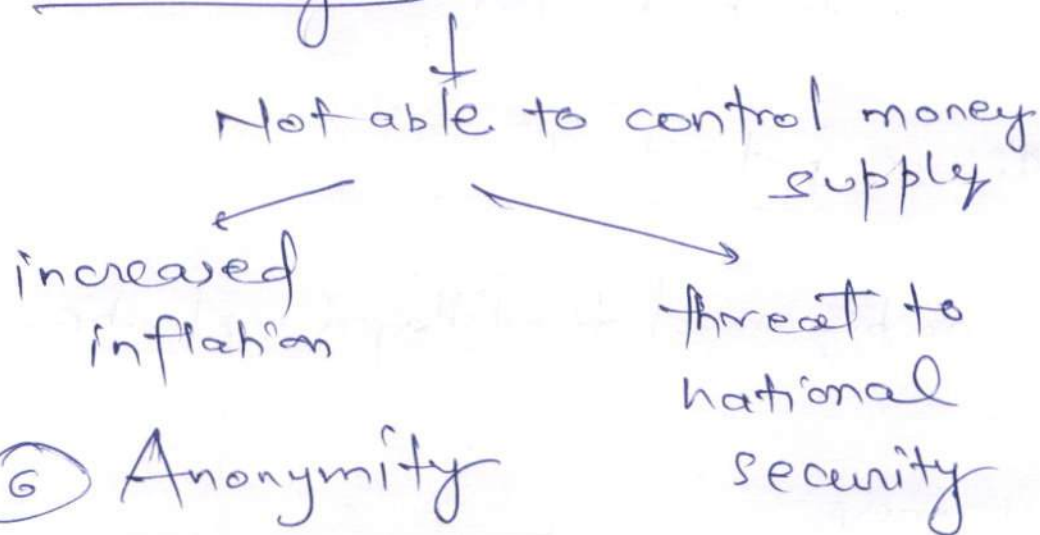
eg Some cryptocurrency crashed overnight after twitter news to ban them

③ No legal mechanism hence

difficult to regulate.

④ low awareness of people and thus can be coerced and tricked into virtual assets -

⑤ Potential to render monetary authority useless -



⑥ Anonymity

Corrective measures :-

① A comprehensive law to regulate

② More research on use of such assets

③ Allocation of Non fungible tokens to create recognition and trace them.

④ Introduction of course in university

(eg) IIT Madras started Blockchain course.

Govt. has recently table Cryptocurrency and official digital currency bill to regulate these assets -

उम्मीदवारों को इस हानि में नहीं लिखना चाहिए
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SPACE FOR ROUGH WORK

AL