

NEXT IAS
GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE : GSMAC2403

Test No. : 03

Name of Candidate: ANKIT AGRAWAL Mobile No. .

Roll No. : PTPP 220280 Start Time 6PM End Time 9PM

Date of Examination: 04/08/24 Medium : English ☒ Hindi ☐

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
TOTAL MARKS - 100		

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
TOTAL MARKS - 100		

GRAND TOTAL -/ 250 EVAL CODE: EVAL DTE:

GENERAL INSTRUCTIONS	सामान्य निर्देश
1. Immediately on receipt of the QCA booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet. 2. Candidates must mention all relevant details like Name, Email, Roll No, Mobile, etc. in the space allocated. 3. Candidate is expected to attempt all 10 questions within the given timeline. 4. Answers must be written in the medium authorized at the time of admission. 5. Candidates must write answers for the specific question under the respective question itself. Any answer written outside the space allotted may not be given credit. 6. Please write neatly. Avoid illegible writing. 7. Do not write/mark irrelevant matters in the QCAB.	1. QCA पुस्तिका प्राप्त होने पर कृपया तुरंत जांच लें कि इस QCA पुस्तिका में कोई पृष्ठ या सामग्री आदि गलत छपी हुई या फटी हुई या गायब तो नहीं है। यदि ऐसा है, तो इसे एक नई QCA पुस्तिका से बदल लें। 2. अभ्यर्थियों को सभी प्रासंगिक विवरण जैसे नाम, ईमेल, रोल नंबर, मोबाइल नंबर आदि का आवंटित स्थान पर उल्लेख करना होगा। 3. अभ्यर्थियों से अपेक्षा की जाती है कि वह आवंटित समय-सीमा के भीतर ही सभी 20 प्रश्नों के उत्तर-लेखन का प्रयास करें। 4. प्रत्येक उत्तर, प्रवेश के समय चुनी गयी भाषा के माध्यम में ही लिखे जाने चाहिए। 5. अभ्यर्थियों को विशिष्ट प्रश्न के उत्तर संबंधित प्रश्न के नीचे ही लिखने होंगे। आवंटित स्थान के बाहर लिखे गए किसी भी उत्तर को क्रेडिट नहीं दिया जाएगा। 6. कृपया साफ-सुथरा लिखें। अपठनीय लेखन से बचें। 7. QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS:

Student Concerns / Query	Evaluator's Feedback / Response
1	1
2	2
3	3

Marks Per Ques	Below Average	Average	Above Average
10 Marks	Below 3.00	3.00 - 3.75	4.00 and above
15 Marks	Below 4.50	4.50 - 5.75	6.00 and above

* Subject to change without prior notice.

IMPORTANT QR CODES	
 Topper's Copy	 Common mistake and Correct Filled QCAB
 Copy Scanner App	 Next IAS Test Centre Location

MACRO COMMENTS

The Purpose of evaluation@nextias.com is to provide constructive suggestions on 'How to improve Answer Writing and thereby score better marks.'

STRENGTHS OF THE CANDIDATE

The candidate has a good command over the English language and has written the answer in a clear and concise manner. The answer is well-structured and easy to read. The candidate has used appropriate words and phrases to convey the meaning of the question. The answer is well-written and shows a good understanding of the topic.

AREAS OF IMPROVEMENT

The candidate has a good command over the English language and has written the answer in a clear and concise manner. The answer is well-structured and easy to read. The candidate has used appropriate words and phrases to convey the meaning of the question. The answer is well-written and shows a good understanding of the topic. However, the candidate has not used any examples or evidence to support their arguments. This is a major area of improvement for the candidate. The candidate should use examples and evidence to support their arguments and make their answer more convincing. The candidate should also use a variety of sentence structures and punctuation to make their writing more engaging and interesting.

IMPROVEMENT SUGGESTIONS

The candidate has a good command over the English language and has written the answer in a clear and concise manner. The answer is well-structured and easy to read. The candidate has used appropriate words and phrases to convey the meaning of the question. The answer is well-written and shows a good understanding of the topic. However, the candidate has not used any examples or evidence to support their arguments. This is a major area of improvement for the candidate. The candidate should use examples and evidence to support their arguments and make their answer more convincing. The candidate should also use a variety of sentence structures and punctuation to make their writing more engaging and interesting. The candidate should also use a variety of sentence structures and punctuation to make their writing more engaging and interesting. The candidate should also use a variety of sentence structures and punctuation to make their writing more engaging and interesting.

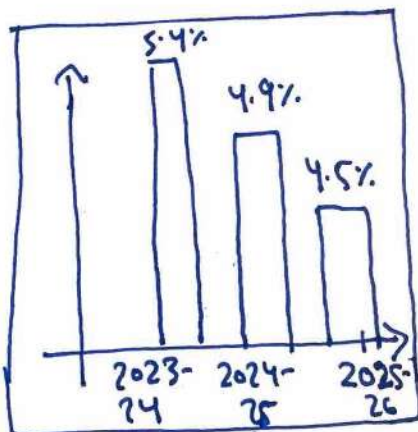
1. भारत में उच्च राजकोषीय घाटे में योगदान देने वाले कारकों पर प्रकाश डालते हुए, ऐसे घाटे के संभावित परिणामों पर चर्चा कीजिए तथा राजकोषीय समेकन (Fiscal consolidation) सुनिश्चित करने के उपाय सुझाइए। (10 अंक, 150 शब्द)
Highlighting the factors contributing to high fiscal deficit in India, discuss the potential consequences of such deficit and suggest measures to ensure fiscal consolidation.
 (10 marks, 150 words)

Finance Minister in Budget 2024-25 announced fiscal deficit target of 4.9% which is much higher than 3% mandated by FRBM Act 2003.

Factors for high Fiscal deficit

① Capital expenditure for multiplier effect → Budget 2023-24 → 33% increase to Rs 10 lakh crore.

② Low Private Investment despite corporate tax cut → Stagnant at 13% since 2013



③ Welfare based subsidies

↳ food, fertilizer and petroleum subsidies contribute to Rs 3 lakh crore.

④ Legacy effect → high fiscal deficit regime during Covid-19 → high revenue deficit.

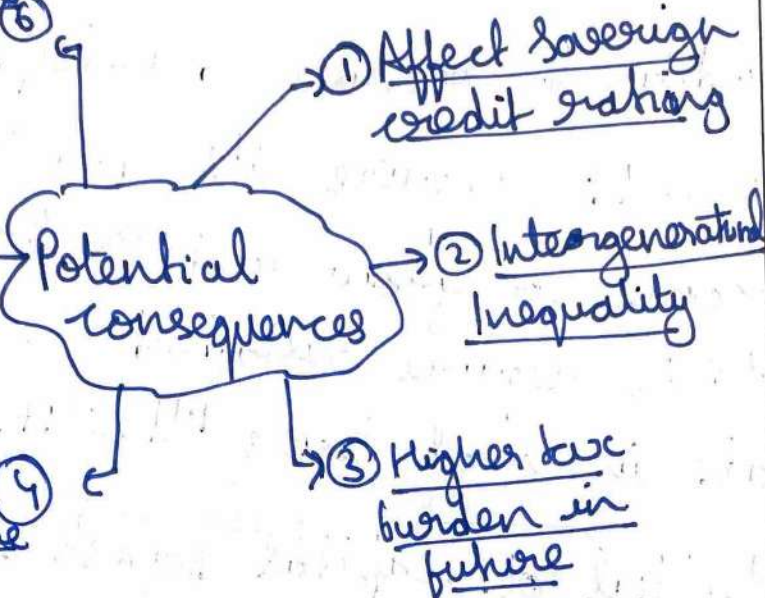
⑤ Low tax to GDP ratio → lowest among BRICS nation at around 14%.

Market Instability

Stock market

Inflationary effect
in economy

Low spending
on Infrastructure
creation



Measures for fiscal consolidation

- ① Rationalisation of subsidies → (eg) Recent move on food subsidy.
- ② Innovative Tax Solutions → GST, new direct tax regime.
- ③ Public-Private partnership → for Infrastructure creation (eg) BOT model for highways
- ④ Reducing Revenue deficit → through focusing on decreasing interest payment.
- ⑤ Review FRM Act → provide more dimensions to escape clause to meet with exigencies. Budget 2024-25 is on path to achieve the fiscal consolidation target by FY 26.

2. 2047 तक भारत के विरासत राष्ट्र बनने की आकांक्षा महत्वपूर्ण पूँजीगत निवेश पर निर्भर है। इसके आलोक में, इस लक्ष्य को प्राप्त करने में पूँजीगत निवेश की संभावनाओं पर चर्चा कीजिए। इस संदर्भ में भारत के समक्ष क्या चुनौतियाँ हैं?

(10 अंक, 150 शब्द)

India's aspiration to be a developed nation by 2047 hinges on significant capital investment. In light of this, discuss the potential of capital investment in achieving this vision. What are the challenges India faces in this regard?

(10 marks, 150 words)

India to become developed nation by 2047 require its per capita income to grow to more than \$12000, which require sustained 8% growth rate in real terms till 2047.

Potential of capital investment to achieve this vision

① Multiplier effect on economy

↳ eg. Economic survey 2023-24 →

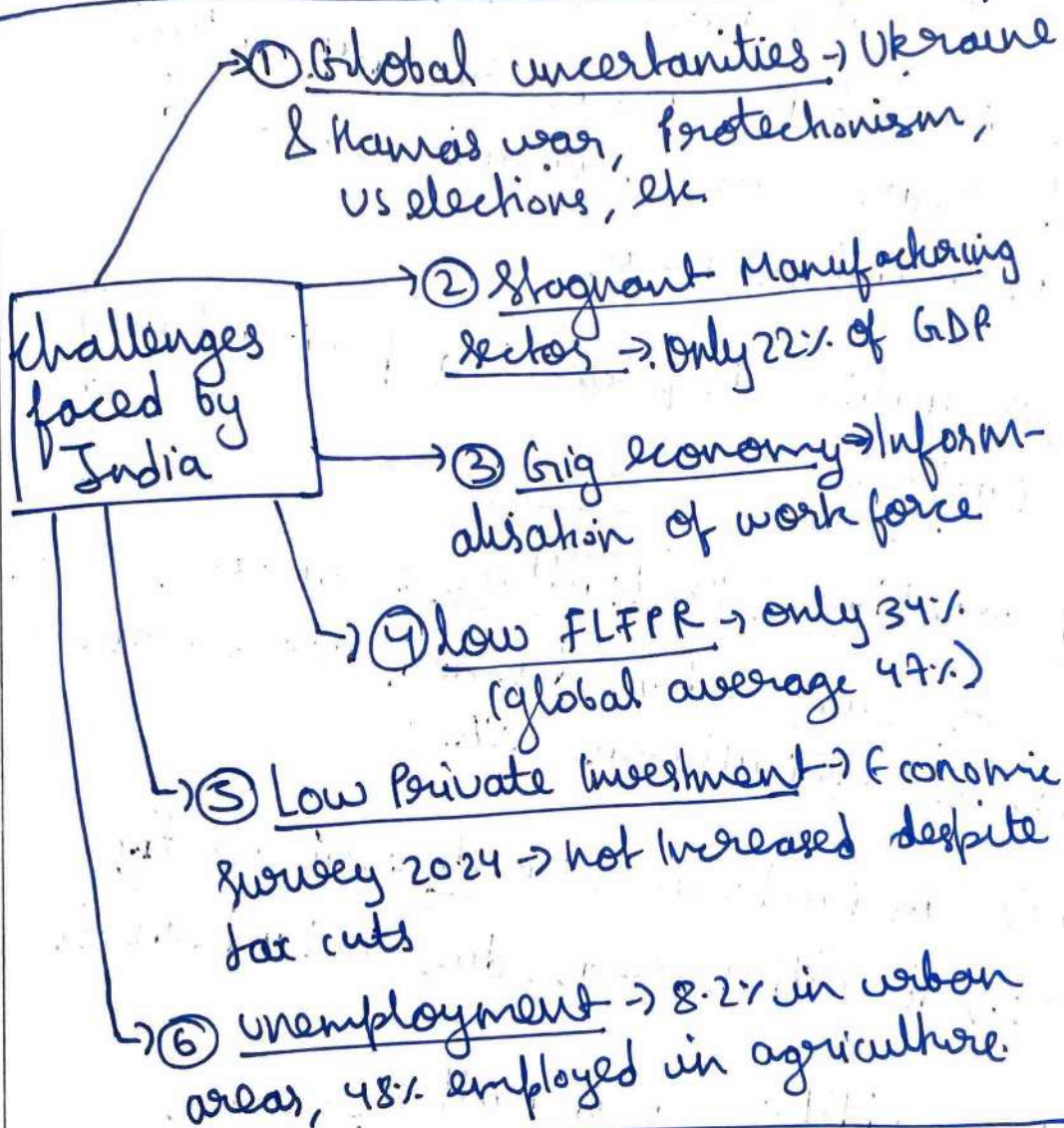
Rs 1 Investment in infrastructure return Rs 2.4 to economy.

② Attract Foreign Investment → India received \$53 billion worth FDI on backdrop of 33% increase in capital expenditure in Budget 2023-24.

③ Export led growth → thorough SEZ, Infra projects like DFC, Bharatmala, Sagarmala, etc.

④ Employment led growth → Capital Investment through PMAWAS, JSM, etc create employment.

⑤ Increased Private consumption → 50% contribution to GDP growth.



To make India Developed nation by 2047, the focus should be on ① Structural reforms, ② Regional growth ③ Export focus through FTAs, ④ Agricultural reforms, ⑤ Skill development at large scale.

3. "नगरीकरण में वृद्धि के साथ, पेरी-अर्बन/परिनगरीय कृषि (Peri-urban agriculture) ताजा कृषि उपज की आवश्यकताओं के लिए एक महत्वपूर्ण योगदानकर्ता के रूप में उभरी है"। इस संदर्भ में, सतत रूप से पेरी-अर्बन कृषि को बढ़ावा देने से सम्बंधित अवसरों और चुनौतियों पर चर्चा कीजिए। (10 अंक, 150 शब्द)

"With growing urbanization, peri-urban agriculture is emerging as a significant contributor to fresh farm produce needs". In this context, discuss the opportunities and challenges associated with promoting peri-urban agriculture in a sustainable manner.

(10 marks, 150 words)

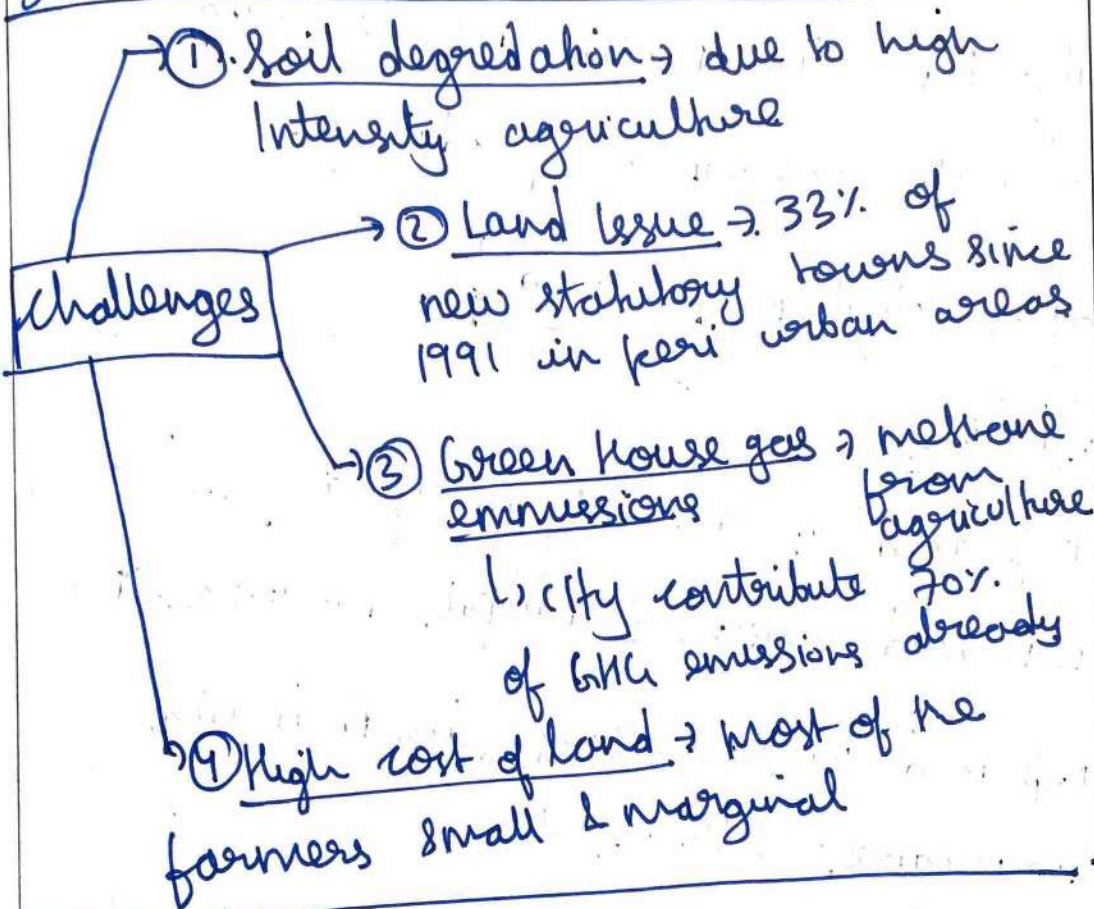
According to World bank, more than 40% of population of India will live in urban areas by 2041 which will create huge demand for food near to urban areas.

Opportunities in promoting peri-urban agriculture:

- ① Promotion of Horticulture → Sunrise sector, huge urban demand, more than 33% of agricultural GVA.
- ② High Agricultural Intensity → currently 150%, It will increase due to land crunch.
- ③ Value addition to agriculture → huge demand of processed food item in urban areas.
- ④ Supply chain development → through urban supermarkets & e-commerce aggregators like Big Basket, Reliance fresh, etc.

⑤ Urban employment → 8.2% unemployment according to Eco. survey 2024.

⑥ Forward & backward linkage → access to credit, fertiliser, certified seed, market easier.



Peri-urban agriculture can ensure food security of urban areas but to make it sustainable there is need to focus on organic farming, addressing land issue through digitalisation of land record, etc.

4. दालों और वनस्पति तेलों में आत्मनिर्भरता प्राप्त करने के लिए भारत के कृषि क्षेत्र के समक्ष कौन सी प्रमुख चुनौतियाँ हैं? इन चुनौतियों के समाधान भी सुझाइए। (10 अंक, 150 शब्द)

What are the major challenges faced by India's agriculture sector to achieve self-sufficiency in pulses and vegetable oils? Suggest measures to address these challenges.

(10 marks, 150 words)

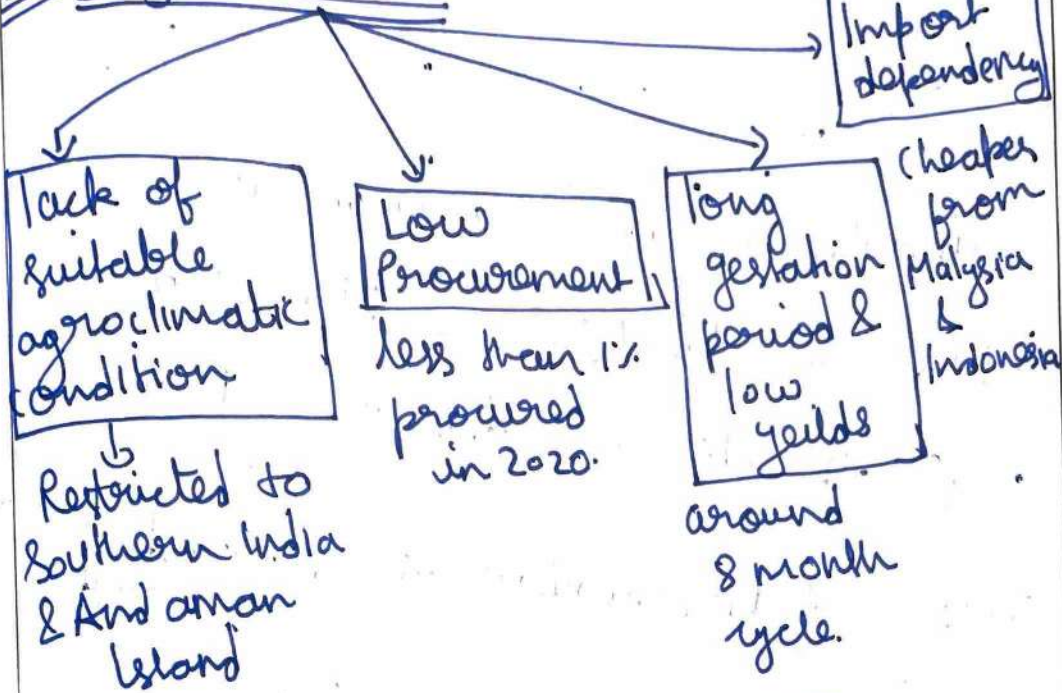
India import around 80% of vegetable oil and is not self sufficient in pulses despite being largest consumer & producer.

Major challenges faced

I Pulses

- ① Replaced by rice-wheat system in semi-arid region of Punjab, Haryana & UP
- ② Replaced by cash crops in Peninsula (sugarcane, cotton, etc)
- ③ Low procurement → despite MSP only 20% produce procured.
- ④ Regional disparity → grown in poorest regions of India has low intensity
↳ Malwa, Bundelkhand, Maharashtra, etc.
- ⑤ Lack of certified seeds → only 3% seed replacement rate for pulses

II Vegetable oil



Measures to address challenges

- ① MSP effectiveness & Procurement
- ② Certified seed kits to small farmers
- ③ Contract farming can be done on Pilot basis
- ④ Agroclimatic planning promotion
- ⑤ Balancing domestic Incubation & Import duty hikes
- ⑥ Genetic crops in oil seed to reduce gestation & improve yields

Self sufficiency in oil seeds and pulses can further promote food security along with diversification of cropping pattern.

5. भारत को एक सतत हरित अर्थव्यवस्था बनाने में जैव-विनिर्माण (Biomanufacturing) और जैव-फाउंड्री (Bio-foundry) की संभावनाओं का मूल्यांकन कीजिए। (10 अंक, 150 शब्द)
- Evaluate the potential of biomanufacturing and bio-foundry in driving India's future towards a sustainable green economy. (10 marks, 150 words)

Sustainable green economy is crucial to objective of Net zero by 2070 as set by India in COP 26.

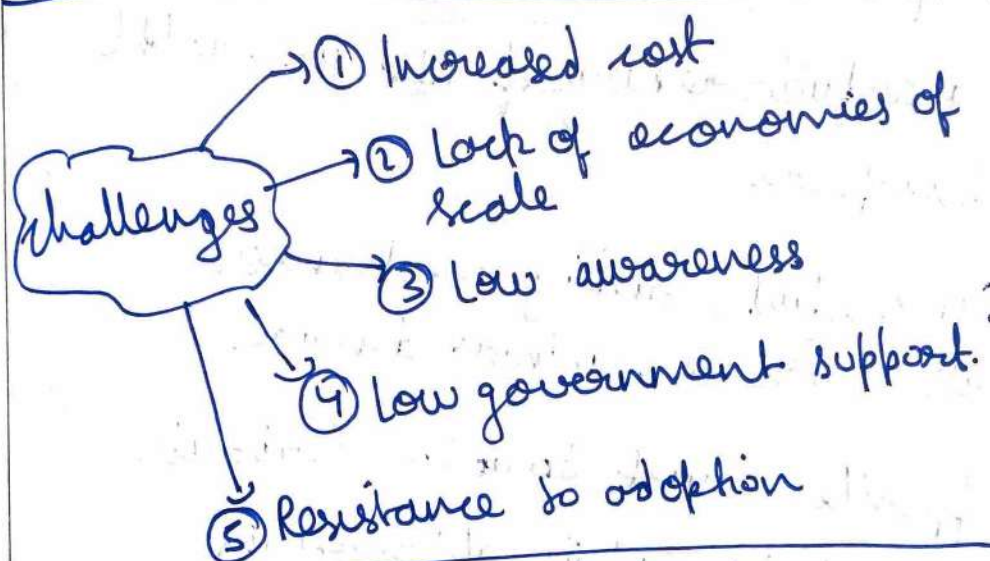
Potential of Biomanufacturing & foundry

- ① Clean Energy & Energy Security
 promotion of Biofuels like ethanol.
 ↳ National Biofuel mission
- ② Agricultural resilience to climate change
 ↳ Bio genetic crops that are drought resistant & are low energy intensive.
- ③ Decarbonisation of steel & fertilizer sector
 ↳ bio foundry can promote carbon capture & storage.

④ Reduce use of bricks → brick kiln major polluter industry and large green house gas emission.

⑤ Green jobs → particularly in tier 3 & 4 towns and rural areas.

⑥ Export competitiveness → make Indian export resilient to measures like CBM



To promote biomanufacturing & bioeconomy in India, Government support along with Industry-Academia linkage is crucial which can take future toward sustainable green economy.

6. पुनः प्रयोज्य प्रक्षेपण यान (RLV) की कार्यप्रणाली के पीछे क्या सिद्धांत हैं? भारत के अंतरिक्ष वाणिज्य में आर.एल.वी. के उपयोग के महत्व और संभावित लाभों की व्याख्या कीजिए। (10 अंक, 150 शब्द)
- What are the principles behind the working of Reusable Launch Vehicle (RLV)? Explain the significance and potential benefits of use of RLVs in India's space commerce. (10 marks, 150 words)

ISRO has successfully demonstrated the reusable launch vehicle which can give boost to space tourism along with cost cutting in space operation.

Principle behind working of RLV

- ① Successful reentry of RLV in earth's atmosphere
- ② Successful landing mechanism with zero or minimal damage.
- ③ Opposite thrust ~~to~~ to stabilise the velocity while approaching earth.
- ④ Use of space balloons or horizontal landing similar to air craft.
- ⑤ Multiple ejection of load to reduce the overall weight of vehicle.

Significance & Potential Benefits

- ① Reduced cost → of satellite missions, interplanetary mission, etc.
- ② Reduced space debris → avoiding Kessler syndrome.
- ③ Space tourism promotion → estimated to be \$100 billion market by 2030.
- ④ Economic viability of startups in space sector.
- ⑤ More manned mission to space → expanding understanding of universe.

Reusable launch vehicle can help Indian space sector to capture world space market which is more than \$400 billion currently.

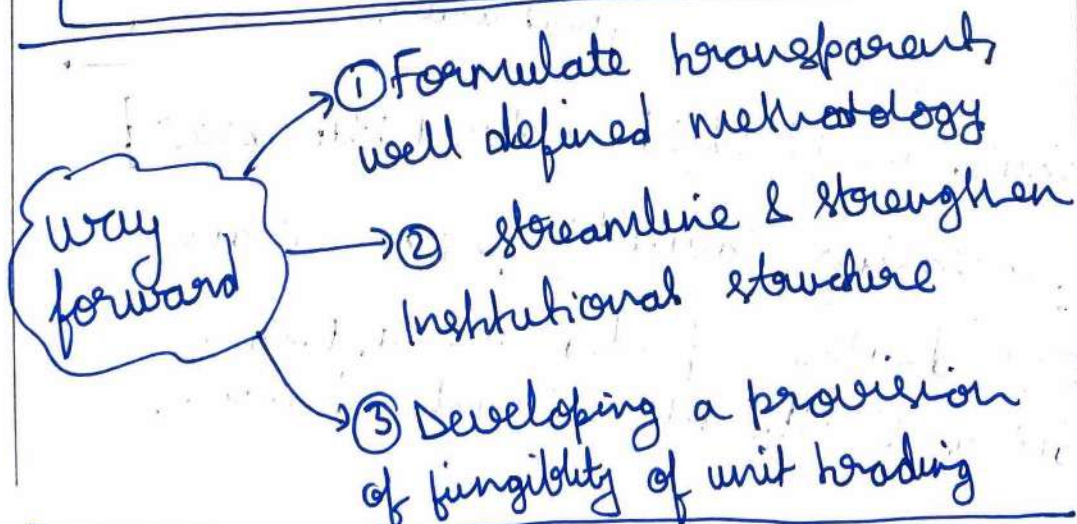
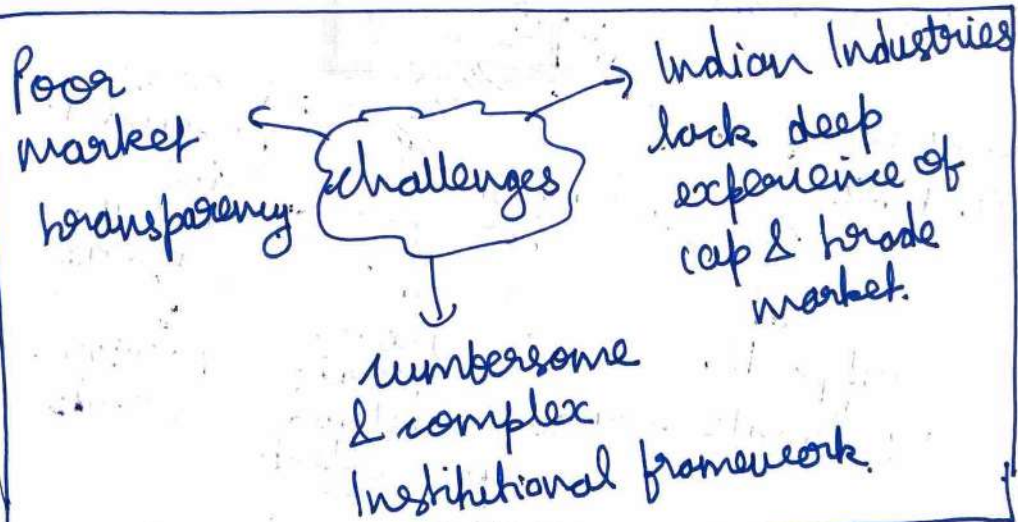
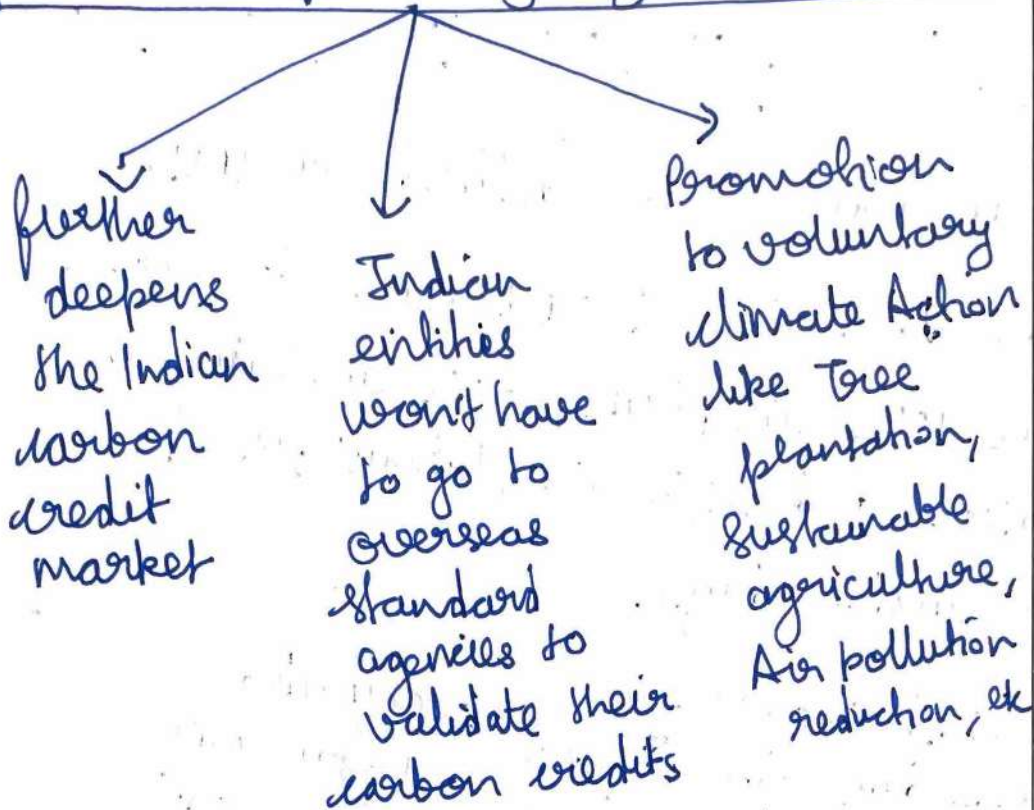
7. कार्बन क्रेडिट ट्रेडिंग स्कीम (CCTS) 2023 की प्रमुख विशेषताओं का परिक्षण कीजिए। भारत में हरित गृह गैस (Greenhouse gas) उत्सर्जन को कम करने की इसकी संभावनाओं का विश्लेषण कीजिए। (10 अंक, 150 शब्द)
Examine the key features of the Carbon Credit Trading Scheme (CCTS) 2023 Analyze its potential for mitigating greenhouse gas emissions in India. (10 marks, 150 words)

Ministry of Power notified CCTS 2023 to develop the Indian carbon market framework under the Energy Conservation Act 2001

Key features of CCTS 2023

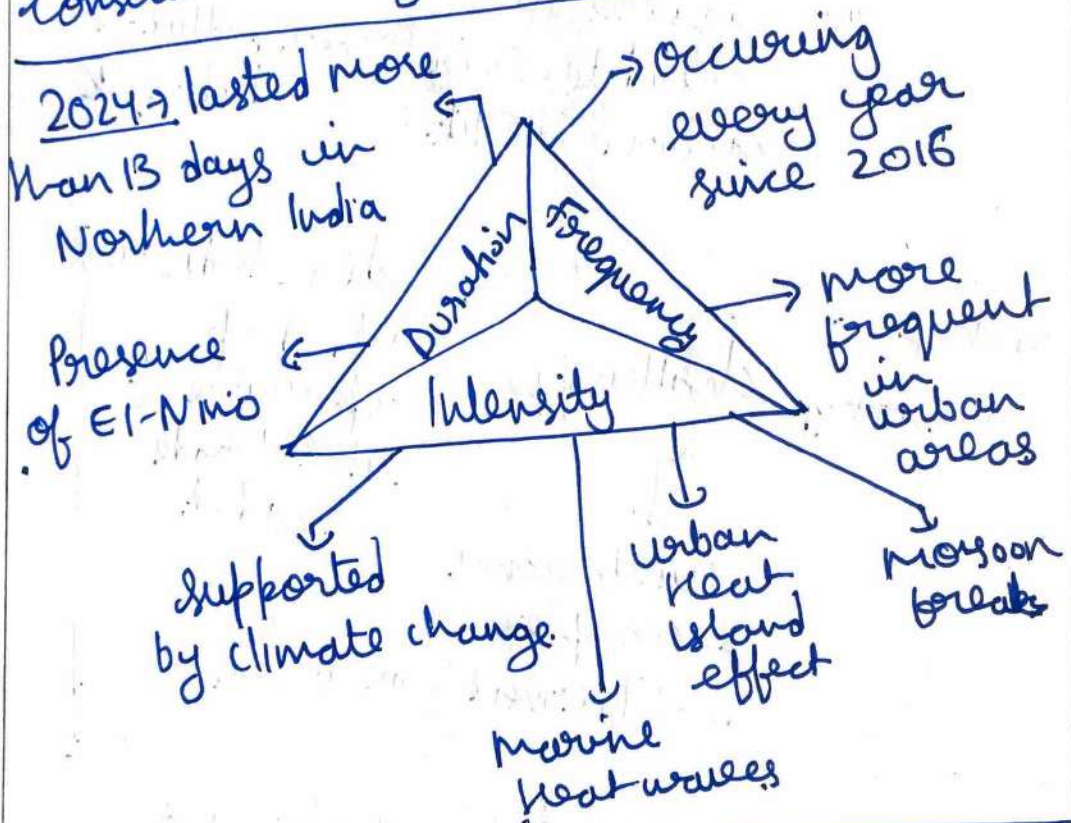
- ① Specifies the structure of the Indian carbon market
- ② Creation of accredited carbon verification agencies
- ③ Compliance mechanism for obligated entities and sectors
- ④ Provided institutional framework
 - ↳ National steering committee
 - ↳ BEE as administrator
 - ↳ Grid controller of India Limited as the registry of obligated or non-obligated agencies.

Potential for mitigating GHGs in India



8. पिछले दशक में होट वेव की बढ़ती गहनता, आवृत्ति और अवधि के मद्देनजर, क्या "हीट वेव" को अब आपदा प्रबंधन अधिनियम, 2005 के तहत एक अधिसूचित आपदा के रूप में शामिल किया जाना चाहिए? (10 अंक, 150 शब्द)
In light of the increased intensity, frequency and duration of heat waves in the last decade, do you think the time has come to include "heat waves" as a notified disaster under the Disaster Management Act, 2005? (10 marks, 150 words)

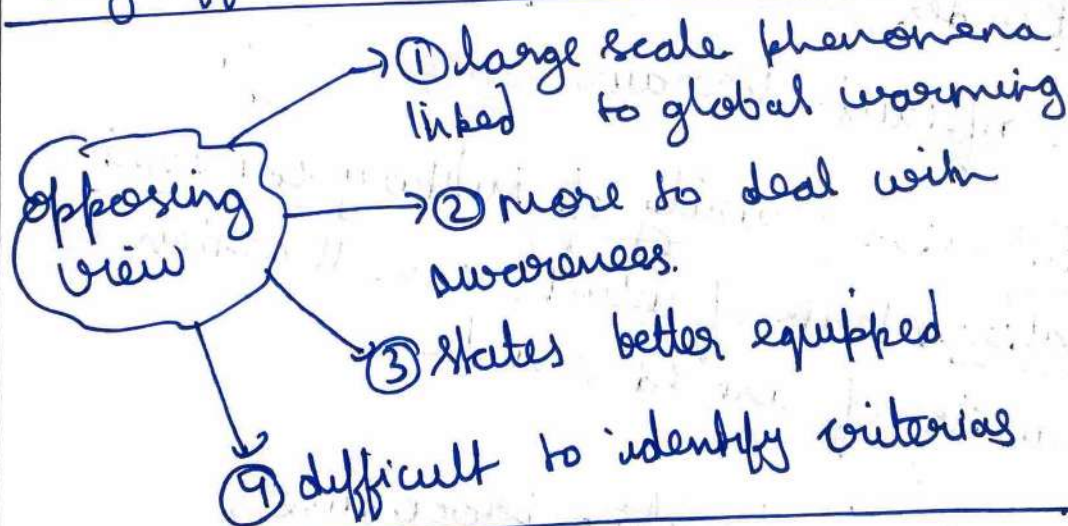
Heat waves are defined by IMD. has deviation of temperature to more than 40°C in plains, 30°C in hilly region and 35°C in plateau for 2 consecutive days.



Should be Notified under DMA 2005.

- ① Increasing casualties → more than 1500 deaths reported in UP, Bihar, Odisha, Chhattisgarh & Jharkhand alone.

- ② Becoming uniform across country → No more a localised phenomena.
- ③ Complexity associated → According to Down to earth, wet bulb temperature can cause mass death in coastal regions
- ④ Funding requirements → mitigation & adaptation measures like water, hospital air conditioning, etc.
- ⑤ Lack of warning mechanism → different states issue guidelines which has lag effects.



Heat waves has impact on economy, health & Biodiversity
 Thus national level plan with flexibility
 to states should be thought upon.

9. भारतीय मशख बल का हाल ही में तैयार किए गए 'साइबर-अंतरिक्ष अभियान' (Cyberspace operations) के लिए संयुक्त सिद्धांत में पारस्परिक ऑपरेशनों के साथ-साथ ये जोन युद्ध दोनों के लिए साइबर-सुरक्षा स्थिति मजबूत होगी। परीक्षण कीजिए। (10 अंक, 150 शब्द)

Recently formulated 'joint doctrine for cyberspace operations' by Indian armed forces will lead to strengthening of the cyber-security posture for both conventional operations as well as gray zone warfare. (Examine.) (10 marks, 150 words)

According to CERT-IN, there has been rising incidence of cyber attack against armed forces system and on critical infrastructure.

Joint Doctrine for cyber space operation

I Strengthen conventional operations

- ① Border surveillance → 24/7 and in difficult terrain
- ② Effective security of military communications → leak of which can threaten security of armed members.
- ③ Standard operating procedure → clarity of command center, swiftness of action, rapid response, etc.
- ④ Tackle the ground support of terrorism → recruitment & finances nowadays

happening in cyber space.

II. Strengthening gray zone warfare

a) Propaganda countering → attempts to social engineering can be acted upon sooner than later.

b) Protection of critical infrastructure → Mumbai Grid Attack, AIIMS Attack, etc.

c) Support to State Police → In case of terror. attack coordinated through cyber space.

To fully leverage the joint doctrine these further steps should be to capacity building of forces through specialised training

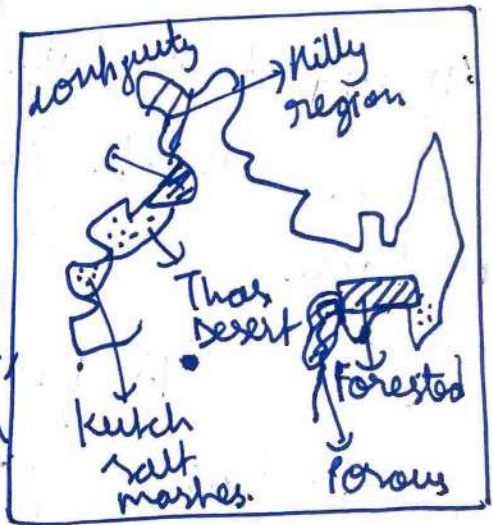
10. पाकिस्तान और बांग्लादेश से सटे राज्यों में सीमा सुरक्षा बल (BSF) के प्रादेशिक क्षेत्राधिकार के विस्तार की आवश्यकता एवं संभावित मुद्दों पर चर्चा कीजिए। (10 अंक, 150 शब्द)
- Discuss the necessity and potential issues surrounding the extension of the Border Security Force's (BSF) territorial jurisdiction in states adjacent to Pakistan and Bangladesh. (10 marks, 150 words)

Recently Punjab has objected to increased deployment of BSF in the state.

Necessity for extension of BSF

① Geography → difficult terrain and porous borders

② Unique security challenges → insurgency in Bangladesh border, cross border terrorism in Kashmir.



③ Separatist movements → Khalistan movement supported by Pakistan, Kashmir issue.

④ Drug menace → Golden triangle & recent Punjab → more than 10000 rps transferred recently due to nexus.

⑤ Radicalisation attempts → of border villages by overground workers.

⑥ illegal migration → breaching local tensions (eg) Manipur, Assam, Bengal.

Reduced attention to Pakistan & China border → 2.5 front war.

④ overlap of functions with state police

Potential Issues

① Against federalism state law & order under state list

② Policing state Anxiety & fear among citizens

③ Fear of Human Right violations as reported in North East & Chhatisgarh.

Army & BSF are needed for extreme professionalism to deal with extreme situation thus any step of extension should be on care by core basis and with consultation with state governments.

11.

भारत की आर्थिक विकास की कहानी प्रायः बेरोजगारी की निरंतर चुनौतियों से प्रभावित होती है। संरचनात्मक बेरोजगारी की अवधारणा का विश्लेषण कीजिए और भारत की वर्तमान आर्थिक स्थिति के संदर्भ में इसकी प्रासंगिकता पर चर्चा कीजिए साथ ही समावेशी रोजगार को बढ़ावा देने के लिए नीतिगत उपाय सुझाइए। (15 अंक, 250 शब्द)

India's economic growth story is often overshadowed by the persistent challenges of unemployment. Analyze the concept of structural unemployment and discuss its relevance in the context of India's current economic situation. Suggest policy measures to promote inclusive job growth. (15 marks, 250 words)

According to IMF, India is the bright spot in global economy despite global uncertainty. However, PLFS Survey 2023-24 project unemployment at 4.1%.

Concept of Structural Unemployment

Structural unemployment is defined as non-availability of jobs due to inherent nature of economy, technological evolution and skilling issues:-

① Low contribution of manufacturing:-
Stagnant at 22% of GDP since last decade.

② Low value addition in agriculture:-
48% employment but only 18% of GDP & 14% of GVA.

③ Quality of jobs in service sector
is of poor quality

↳ 90% in informal sector.

④ Seasonality and casual nature
of jobs → agriculture, more than 70%
job are casual

⑤ Jobless growth → automation, investment
in technology & building but not on
production increase. (Economic survey)

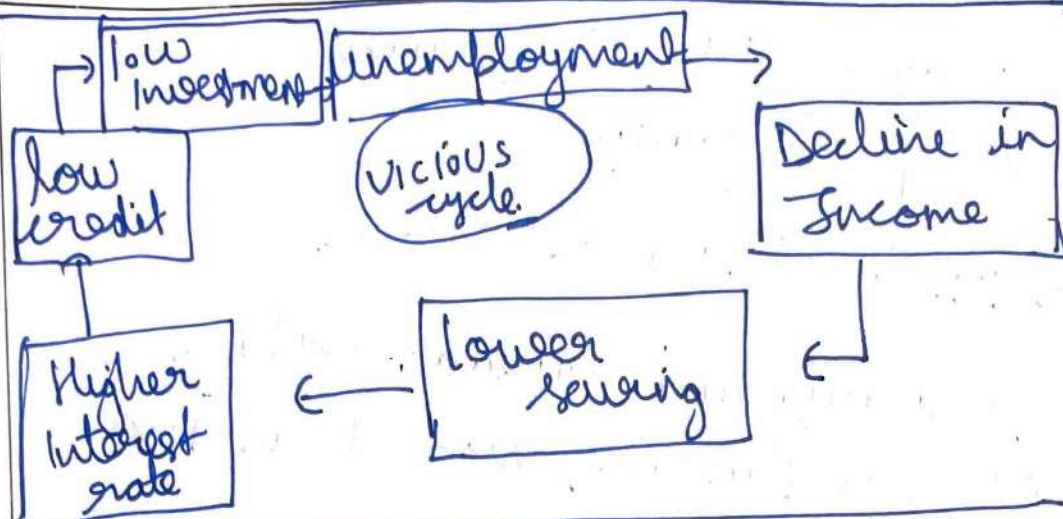
⑥ Export slowdown → competition from
China & S.E. Asia, (eg) only 2% of global
trade in goods.

⑦ Skilling issue → India Skill Report → only
50% graduate employable & only 2%
attained formal skilling.

Relevance in India's current Economy

① Stagnant GDP growth → stuck at average
of 6.5%.

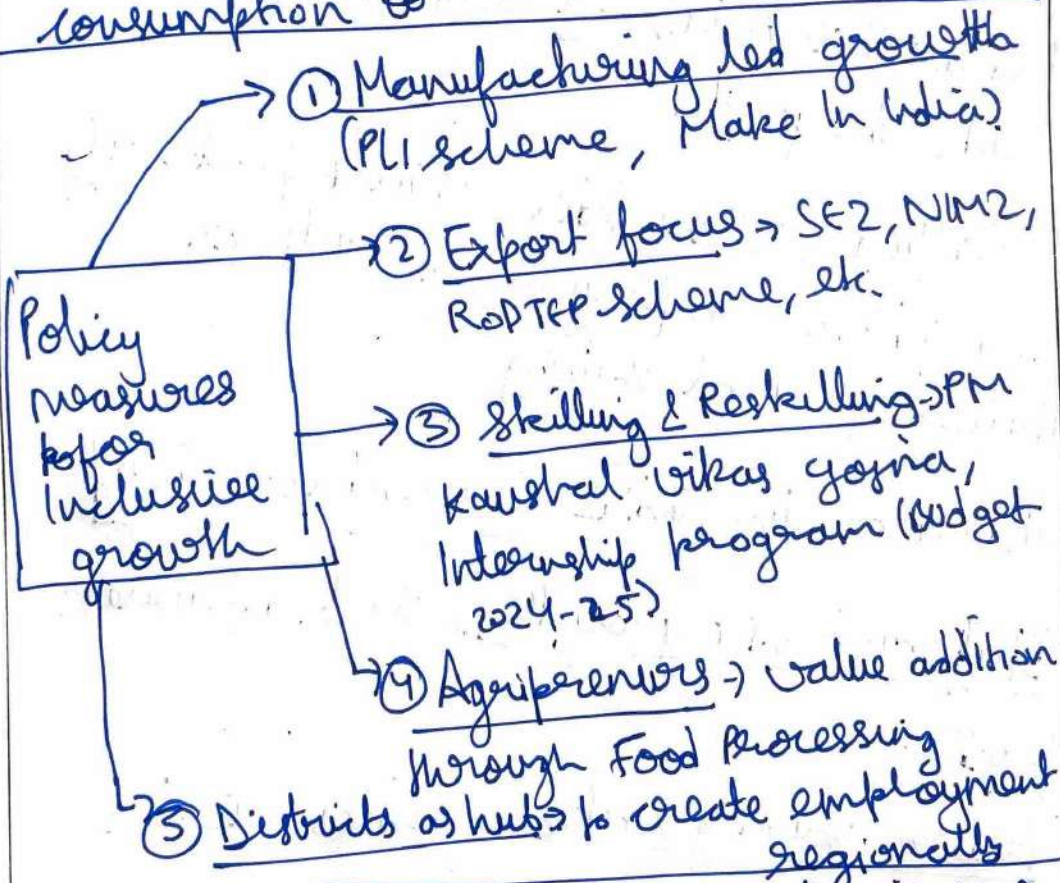
② Lower saving rates → creates vicious
cycle as shown:



③ Rural growth decline → dependent on remittance by urban workers

④ Demographic Disaster → More than 60% population in working age.

⑤ lower purchasing power → Impact private consumption



Inclusive growth is one of the key pillars of Developed India by 2047.

12. भारत में क्षेत्रीय विकास को बढ़ावा देने में सूक्ष्म, लघु और मध्यम उद्यमों (MSMEs) की भूमिका पर चर्चा कीजिए। औद्योगिक विविधीकरण और उन्नत प्रौद्योगिकी प्राप्त करने में डैडी किस प्रकार योगदान दे सकते हैं?

(15 अंक, 250 शब्द)

Discuss the role of Micro, Small, and Medium Enterprises (MSMEs) in fostering regional growth in India. How can MSMEs contribute to achieving industrial diversification and technological advancement?

(15 marks, 250 words)

MSME contributes to 38% of employment, 28% GDP and more than 20% of exports thus can play a major role in regional growth in India.

Role in Fostering Regional growth

- ① Asset creation → at local level.
↳ multiplier effect on regional economy
- ② Local employment → curb rural-urban migration → eg. 21 crore migrants from rural & semi-urban areas.
- ③ Industrial ecosystem → Agglomeration effect eg. Jamshedpur & Rourkela industrial cluster.
- ④ Promote connectivity → Incentivise government to provide market access
eg. Tamil Nadu Government decision to build Airport in Tumkur.

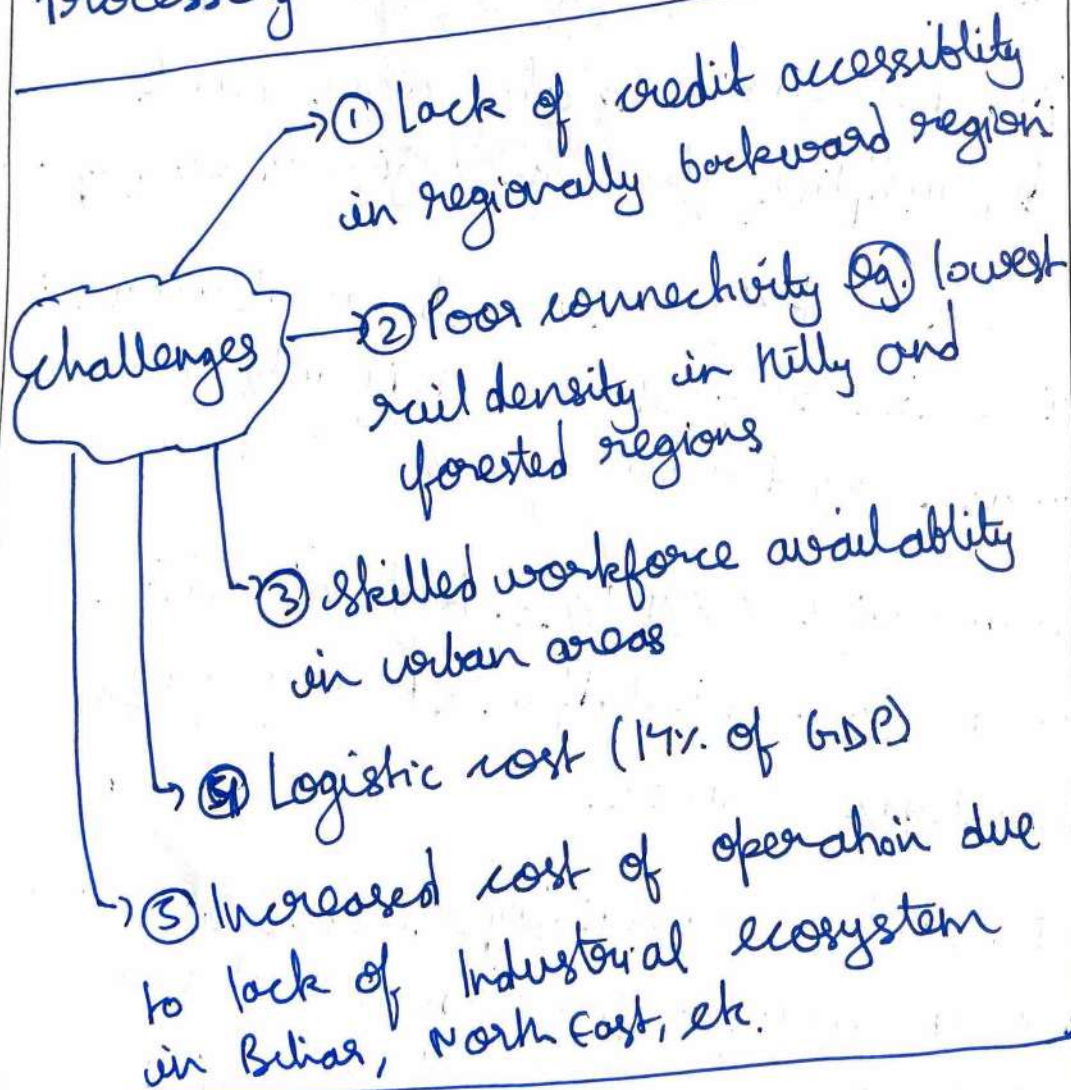
NEXT IAS

Candidates must not
write on this margin

⑤ Increased FDI and Private Investment
↳ eg. currently skewed in favour of Gujarat, Maharashtra, Delhi & Karnataka
>60% of total FDI.

⑥ Increased female labour force participation → currently only 34%.

⑦ Value addition in agriculture → Food processing MSME



Contribution in Industrial Diversification & Technological Advancement

- ① Development of Allied sectors
 (eg) Auxiliary Industries near Pune for automobile sector.
- ② Agricultural products → agricultural Industries like food processing
- ③ Footloose small scale Industries → (eg) Gems & jewellerys, Toys, etc.
- ④ Technology disruption → IT based startups, process disruption.
 (eg) Formalisation of Handicraft market P-Tal, Crompton, etc.
- ⑤ Market access to small industry → local retailers (service MSME) promote diversified product.

MSME can help in objective of growth with job creation and are also decentralised model of industrialisation. MSME can help fulfill the objective of sustainable & inclusive regional growth.

NEXT IAS

Candidates must not write on this margin

13.

"MSP का एकमात्र उद्देश्य किसानों को आकस्मिक मूल्य परिवर्तन के आघात से बचाना है"। क्या आपको लगता है कि MSP को वैधानिक बनाने से किसानों को आकस्मिक आघातों से बचाया जा सकेगा? MSP आधारित खरीद को प्रभावी बनाने के लिए अन्य कौन से उपाय किए जा सकते हैं? (15 अंक, 250 शब्द)

"The sole point of MSP is to protect farmers from sudden price shock". Do you think legalization of MSP can insure farmers from sudden price shocks? What are the other measures which can be taken to make MSP-led procurement effective? (15 marks, 250 words)

MSP provide minimum guaranteed price to farmers for 23 crops which include 15 cereals, 7 commercial & 2 other crops. It is recommended by CACP every year before start of Kharif season.

Insuring Farmers through legalisation of MSP

① Price stability of crops → from vagaries of monsoon, and other environmental shocks.

② Improved market intelligence → regarding cropping pattern through assurance of demand.

③ Procurement can reach to every region & every crop

↳ currently 90% procurement in Green Revolution belt and for rice & wheat crop.

④ Losses post Harvest loss → MSP will ensure procurement by FCI which is responsible for storage & transportation.

① Market distortion → affect private sector, WTO objection

② Disincentive to Food Processing sector → 10% of manufacturing exports

③ Lack of capacity of FCI
↳ storage issue, rising debt

Challenges
of
legalising
MSP

④ Inflation → food basket major contributors to CPI based inflation.

⑤ Regional disparity → APMC penetration low in eastern & North Eastern India.

Making MSP-led Procurement effective

Government constituted Sanjay Agrawal committee to revisit MSP policy

① Decentralised Procurement → Shantha

Kumar committee advocated for state procurement & through other central agencies

② Diversification of crop → procurement of oil seed & pulses which are more remunerative.

③ Putting ceiling and legalising it → crop wise and region wise to ensure crop & regional equality.

④ Public-Private Partnerships in storage, transportation & procurement.

⑤ M.S Swaminathan Committee Recommendation
↳ 1.5 times the cost of production for all 23 crops.

⑥ Other Innovative steps → reviewing PM Fasal Bima Yojna, contract farming, etc.

PM Modi said that agricultural reforms can make India global leader in Agriculture which should start with reforms in Agricultural marketing.

14.

भारत में खाद्य सुरक्षा सुनिश्चित करने के लिए सार्वजनिक वितरण प्रणाली (PDS) में भारतीय खाद्य निगम (FCI) की भूमिका पर चर्चा की जाए। भारतीय खाद्य निगम की दक्षता और प्रभावशीलता को बढ़ाने के लिए इसकी कार्यप्रणाली में आवश्यक सुधारों को सुझाए। (15 अंक, 250 शब्द)

Discuss the role of the Food Corporation of India (FCI) in the Public Distribution System (PDS) to ensure food security in India. Suggest necessary reforms in the functioning of FCI to enhance its efficiency and effectiveness. (15 marks, 250 words)

Public distribution system involves two stage process where central government is responsible for procurement, storage & distribution through FCI.

Role of FCI in PDS to ensure food security

- ① Procurement of crops → through APMC or open-ended procurement.
- ② Transport and storage → FCI godowns are used for storage, maintains buffer stocks.
- ③ Distribution to states → at central issue price.
- ④ Responsible for maintaining quality → through scientific storage particularly of perishable items.

Challenges faced by FCI

- ① Skewed Procurement → only 0.2% of oilseed procured, only 20% pulses procured that too 70% from Malwa region & UP
- ② Unscientific storage → First-in - First-out method, Rodent & pest attack
- ③ Corruption charges → 13000 bags of wheat shipped off from godown of FCI in Punjab
- ④ Huge Debts → Budget of 2022-23 fulfilled debt obligation of FCI through off-budget borrowing.
- ⑤ Lack of capacity → less than 50% capacity (around 140 million tons)
- ⑥ Open-ended procurement → procure more than required for buffer stock.
- ⑦ Food Inflation → due to supply-demand mismatch in open market
Ex. July Inflation more than 11%.

Necessary Reforms in FCI

- ① Decentralised Procurement by state agencies as suggested by Shanta Kumar Committee.
- ② Public-Private Partnership → for creating storage capacity
- ③ Involvement of cooperatives → outsourcing its activities to SHGs & cooperatives
 (eg) largest grain storage scheme in budget 2024-25.
- ④ Limits on off-budget borrowing → fiscal prudence within FCI.
- ⑤ Social audit → to avoid corruption & theft of crops from godowns
- ⑥ Diversification of procurement → oilseed, millet, pulses, etc.

Institutional strengthening

is crucial to make agriculture, supply chain robust for its value addition and growth engine of economy.

15. भारत में कृषि उत्पादकता और खाद्य सुरक्षा बढ़ाने में नैनो प्रौद्योगिकी की भूमिका पर चर्चा कीजिए। नैनो-उर्वरकों और नैनो-कीटनाशकों के उपयोग के हाल के विकास/प्रगति और संभावित लाभों एवं जोखिमों पर प्रकाश डालिए।

(15 अंक, 250 शब्द)

Discuss the role of nanotechnology on enhancing agricultural productivity and food security in India. Highlight recent developments and potential benefits and risks of use of nano-fertilizers and nano-pesticides.

(15 marks, 250 words)

With stagnant Net Sown area (49%) and rising population (140 crore), the role of new age technologies like nano technology become crucial in ensuring food security by raising agricultural productivity.

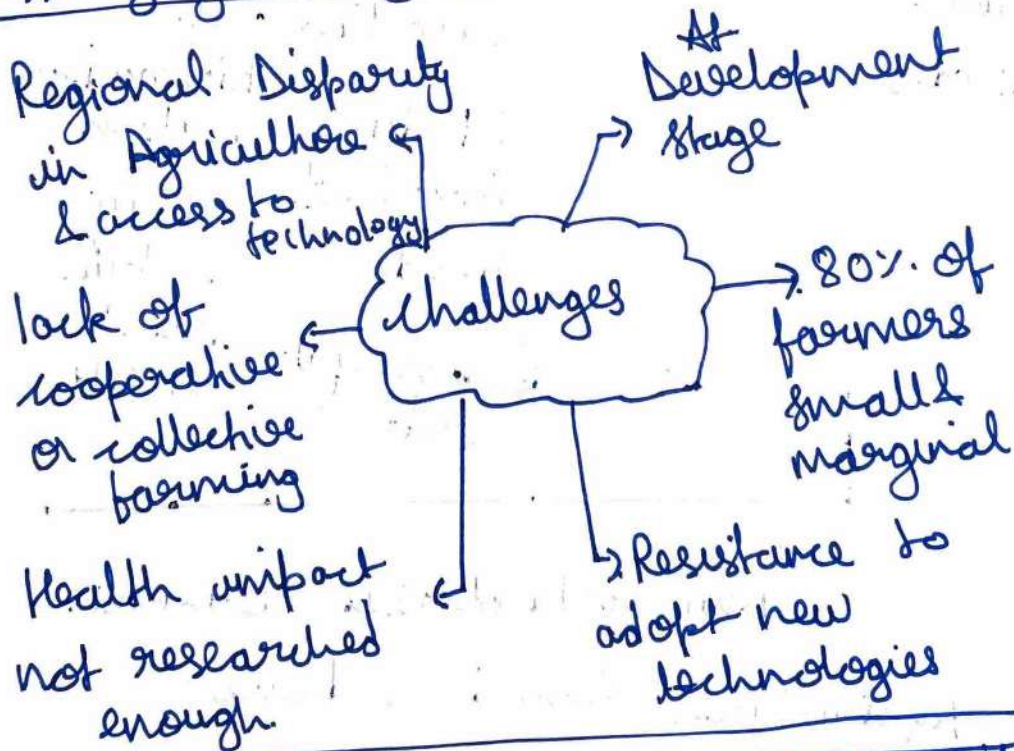
Role of Nano technology

① Nano-fertilizers → Nano-urea can rationalise excessive use of urea in Indian agriculture (70% of fertilizer mix)

↳ low cost → one bottle of Nano urea has same effect as one bag of urea.

② Nano-pesticide → Precision targeting of weeds & insects → reduce agriculture pollutants and increase yield by reducing input cost.

- ③ Use of Nano sensors → to identify soil health can help in estimating irrigation requirement & fertilizer use
- ④ Nano-bots can be used for saving water use in water-intensive crops thus improve crop water productivity
- ⑤ Nano technology for seeds → remove defects and improve gestation period, long growing season & higher yields.



Recent Developments & Potential Benefits
& Risk

NEXT IAS

Candidates must
write on this margin

Nano-technology	Recent Development	Benefits	Risk
① Nano-fertiliser	Nano-Urea	① less quantity required ② cheaper ③ more effective ④ can be produced at mass scale.	① Health Impact not certain ② ~~can~~ can impact food security if yield failure
② Nano-Pesticides		① Precision targeting ② Reduce growth of weeds ③ less input cost.	① chances of Biomagnification ② May contain Toxic elements

Any technological intervention in Agriculture should be done first as pilot study to increase trust and adoption by farmers.

16.

2023 का भौतिकी का नोबेल पुरस्कार क्वांटम डॉट्स के संश्लेषण की खोज के लिए एकिमोव, ब्रस और बावेन्डी को संयुक्त रूप से दिया गया। इस संदर्भ में क्वांटम डॉट्स के अनुप्रयोगों पर चर्चा कीजिए। (15 अंक, 250 शब्द)

The Nobel Prize in Physics of 2023 was jointly awarded to Ekimov, Brus and Bawendi for the discovery of synthesis of quantum dots. In this context, discuss the applications of quantum dots. (15 marks, 250 words)

Quantum dots are man made semiconductor particles, whose sizes are normally not more than 10 nanometers.

Application of Quantum Dots

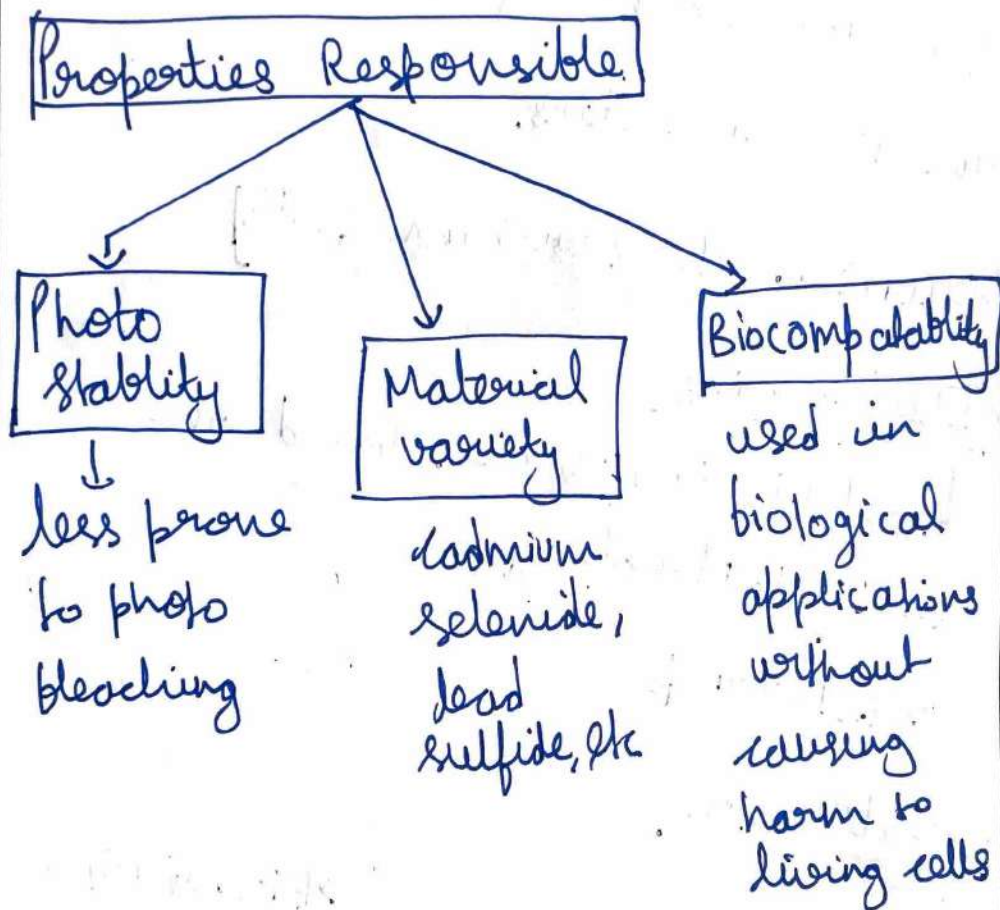
① Electronics

↳ Television screen based on QLED technology
↳ LED lamp.

② Healthcare

↳ Cancer treatment
 ↳ Targeted drug delivery
 ↳ Nano medicine
 ↳ Biochemists & doctors use them to map biological tissues

- ③ Quantum computing
- ④ Solar cell manufacturing
- ⑤ Tiny sensors and encrypted quantum communication



Quantum dots properties can be changed by changing their size. Thus it has varied application in several sectors.

[Faint, illegible handwritten text, possibly bleed-through from the reverse side of the page]

17.

भारत में जैव विविधता संरक्षण में आरक्षित क्षेत्रों (Protected areas) की भूमिका का मूल्यांकन कीजिए। भारत की जैव विविधता को संरक्षित करने में राष्ट्रीय उद्यान, वन्यजीव अभयारण्य और बायोस्फीयर रिजर्व (जैवमंडल निचय) कितने प्रभावी रहे हैं? (15 अंक, 250 शब्द)

Evaluate the role of protected areas in biodiversity conservation in India. How effective have national parks, wildlife sanctuaries, and biosphere reserves been in preserving India's biodiversity? (15 marks, 250 words)

There are more than 90000 animal species including insects and 45000 plant species in India which makes it one of the 10 mega biodiverse region. The Role of protected area becomes Important for its conservation:-

Role of Protected Areas in Conservation

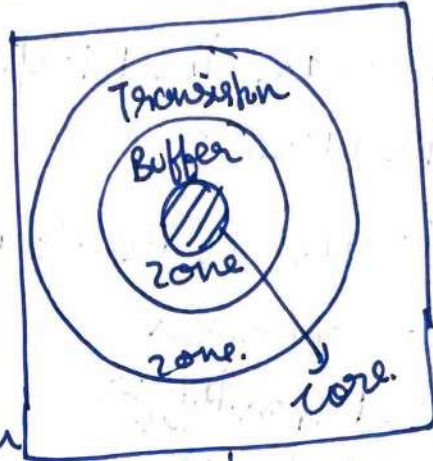
- ① Area based approach → conserve biodiversity hotspots like Western Ghats.
- ② Species based approach → relocation & rejuvenation of cheetah through conservation of Kuno National Park.
- ③ Legalised framework for biodiversity conservation → Wildlife Protection Act provide for National parks & wildlife sanctuaries.

④ Integration of human activities for sustainable conservation → Biosphere reserves

↳ a) Core → Inviolable, total protection

↳ b) Buffer → Research purpose

↳ c) Transition → Tourism & economic activities regulated.



⑤ Integrated approach → to conservation

Management of prey base

eg. Chital in case of leopard & cheetah.

Census & Monitoring

eg. Tiger census.

Scientific Intervention

eg. Caphie breeding, Translocation project eg. Sahasra Tiger.

Effectiveness of Protected Areas in Preserving India's Biodiversity

① Positives

a) Project tiger success → Increase to more than 3000 tigers from 1500 in 2011.

b) Sustainable Development → reduction in Human-wildlife conflict.

c) Increase in Biosphere reserve → affiliated with UNESCO.

d) Focus on Eco-tourism → eg. Nilgiri

eco-tourism

State Responsibility ⑤

funding issue,
Poor monitoring

lack of
Perspective
taking ④
death of
cheetahs in
Kuno

Forest fires ③
Inside National
Park eg. Simlipal
2024.

challenges

Public Resistance

① eg. Non-
Implementation
of eco-sensitive
zone in
Western Ghats

② Poaching &
Smuggling
Pangolin, Ivory
bark of elephant,
etc.

To further increase effectiveness of protected area there is need for integrated wildlife management along with fund & support.

18. भारत में पार्टिकुलेट मैटर (PM_{2.5} and PM₁₀) और ओजोन प्रदूषण के उच्च स्तर होने के क्या कारण हैं? पार्टिकुलेट मैटर और ओजोन प्रदूषण को कम करने के लिए सरकार द्वारा किए गए विभिन्न प्रयास कितने प्रभावी रहे हैं?

(15 अंक, 250 शब्द)

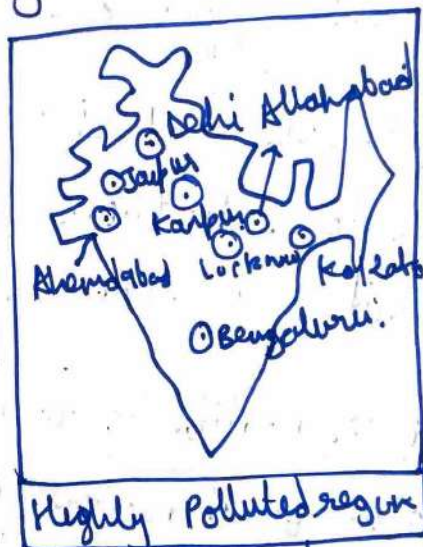
What are the causes of high levels of particulate matter (PM_{2.5} and PM₁₀) and ozone pollution in India. How effective are the various steps taken by the government to mitigate particulate matter and ozone pollution?

(15 marks, 250 marks)

According to recent report by climate trends, more than 85 cities under National clean Air program are far from achieving its objective of reducing PM_{2.5} & PM₁₀ pollutants.

Causes of High levels of PM_{2.5}, PM₁₀ & Ozone Pollution.

① Natural causes



a) climate of region → PM_{2.5} & 10 and Ozone more prominent during winter season & smog formation

b) Wind pattern → In summers due to Loo over northern India → dust particle concentration

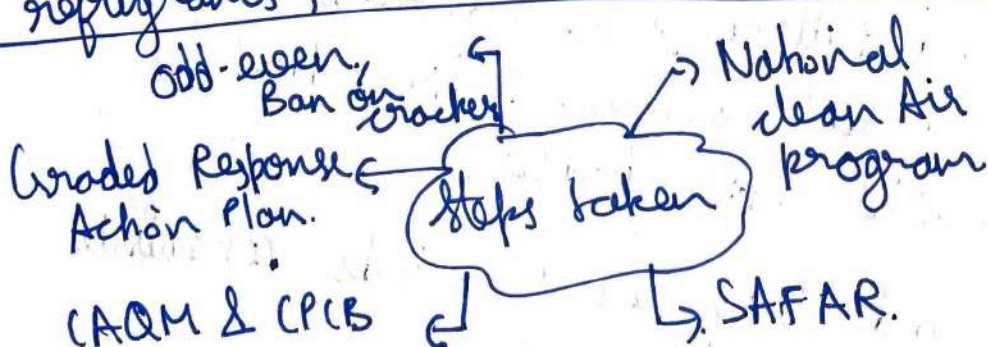
c) Thunderstorm → high winds concentrate PM_{2.5} in urban areas.

d) Secondary Pollutant during summer season

Ozone = VOC + Summer + Carbon
Heat Monoxide

II) Anthropogenic causes

- ① Construction → creates PM₁₀ pollutant
↳ Real estate boom in urban areas
- ② Transportation → releases NO_x, CO, etc.
which promote ozone formation
- ③ aerosol emission → PM_{2.5} & PM₁₀
due to industrial emissions, eg Sulphur
dioxide by thermal power plants.
- ④ Poor quality of roads → Heavy vehicle or
rain breakdown it into finer particles
of PM_{2.5}
- ⑤ Other factors → Household Induced
Indoor pollution, use of CFC in
refrigerants, etc.



Effectiveness of steps taken:

Positives	Challenges
① Increased adoption of e-vehicle in urban areas. ② Use of carbon capture technologies in Thermal plants ③ Awareness generation through monitoring & reporting (eg. Digital boards in Traffic Junctions) ④ Reduction in PM10 according to report by Climate boards	① AQI still at hazardous level crossing 300 in major Indian cities ② 12% of total death due to air pollution (Lancet Studies) ③ Focus on PM10 and lack of focus on $PM_{2.5}$ as seen in Budgetary allocation of NCAP to road construction

Supreme Court in one of the recent cases suggested that right to clean environment is part of Right to life under Article 21.

19. अंतर्राष्ट्रीय नारकोटिक्स नियंत्रण बोर्ड (INCB) रिपोर्ट 2023 दक्षिण एशिया में मादक पदार्थों की तस्करी के बढ़ते खतरे को प्रदर्शित करती है, जिसका कि भारत एक प्रमुख केंद्र है। भारत के संदर्भ में इस चुनौती के विभिन्न आयामों का विश्लेषण कीजिए। साथ ही, इसमें निपटने के लिए बहु-आयामी दृष्टिकोण भी सुझाइए। (15 अंक, 250 शब्द)

The International Narcotics Control Board (INCB) Report 2023 highlights a growing menace of drug trafficking in South Asia, with India being a major hub. Analyze the various dimensions of this challenge with respect to India. Also suggest a multi-pronged approach to address it. (15 marks, 250 words)

According to INCB report, India has emerged as one of the hotspots of both transit route and consumption of both narcotics due to its location & demography.

Various Dimensions of challenges

① Located between golden triangle & golden crescent.

② Insurgency in border areas of these hubs

↳ North East India.
(Manipur, Nagaland & Mizoram)

↳ Jammu & Kashmir.



③ Trafficking through online medium

↳ Dark web, use of crypto currency, etc.

- ④ Linkages with organised crime syndicates and terrorist organisation
↳ (eg) Dawood Ibrahim company in Mumbai raise revenue through drug supply in India
- ⑤ Difficult to track → due to use of Drones in western borders and maritime route in peninsular India.
- ⑥ Inefficiency of NCB → lack of fund & functionaries, Political interference
- ⑦ India being pharmacy of world vulnerable to drug trafficking by mix-up in supply chain by China.
- ⑧ Youth demography → 60% population below age of 60, more prevalent in urban areas of Mumbai, Bengaluru, Delhi.
- ⑨ Intelligence issue → lack of coordination among agencies.

Multi-Pronged Approach

- ① Security measures → strengthening border security through IBM setup → use of sensors & satellite for 24/7 surveillance
- ② Institutional measures → strengthening capacity of state police, NCB, etc.
- ③ Social media monitoring → use of AI to identify patterns of transactions
- ④ International & Regional cooperation → World Drugs organisation, conformity of laws, Joint operation with neighbouring countries
- ⑤ Legal measures → increase jurisdiction of Narcotics & Psychotropic substance Act to all Indian citizens abroad
- ⑥ Community level intervention → to address demand side through awareness & community policing
Narcotics use need to be curbed to stop demographic dividend becoming demographic disaster

20.

वामपंथी उग्रवाद के प्रति भारत की प्रतिक्रिया (कारवाई) में नक्सलवाद के मूल कारणों को दूर करने के लिए कठोर सुरक्षा उपायों के साथ-साथ सामाजिक-आर्थिक नीतियों और संवाद जैसे नरम दृष्टिकोणों/उपायों (Soft approaches) को एकीकृत करने की आवश्यकता है। चर्चा कीजिए। (15 अंक, 250 शब्द)

India's response to left wing extremism needs to integrate soft approaches like socio-economic policies and dialogue along with hard security measures to address the root causes of Naxalism. Discuss. (15 marks, 250 words)

According to Ministry of Home Affairs, the incidence of left wing extremism (LWE) has declined by more than 85% due to both security & developmental measures.



India's Response to LWE

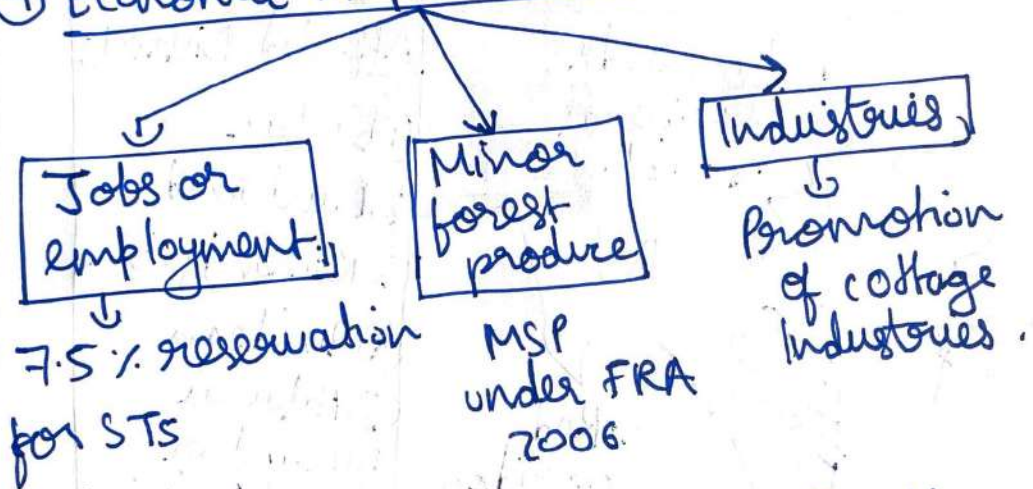
① Soft Approaches

- ① Governance Measures → to address democratic deficit in LWE regions
- eg. PESA 1996, Schedule 5 & 6 of constitution

② Connectivity → to remove Isolation
 (eg) PM Gram Sadak yojna, Bharatmala
 has special provision for LWE affected
 areas

③ Basic Amenities → reduce relative
 deprivation which leads to marginalisation
 (eg) PM Awas, Jal Jeevan Mission, ROSINI

④ Economic empowerment



⑤ Social empowerment → Van Bandhu
 Kalyan yojna, PM PUTG mission, etc.
 focuses on quality of life → Eklaaya
 model schools, PM-JAY, etc.

⑥ Surrender & Rehabilitation Policy → of
 Odisha, Chhattisgarh & Andhra Pradesh

⑦ Land rights & right to rehabilitation → root
 cause of LWE → FRA 2006

II. Hard Security Measures

- ① To ensure law & order → CAPF forces supplement effort of state police
- ② Specialised forces → trained in guerrilla warfare (eg) Greyhound forces of Andhra Pradesh, Bastar Battalion.
- ③ Cutting financial & arms supply → Digital Payments like UPI, demonetisation, IMLA
- ④ Social media monitoring → to curb recruitment & propaganda setting
- ⑤ Joint command centers → in Gaya & Jagdalpur to coordinate efforts.
- ⑥ Drone & other technologies → for surveillance.

Government through SAMADHAN doctrine managed to integrate socio-economic & hard security measures which has shown results in form of declining violence.