

NEXT IAS

GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE : GSMAC2403

Name of Candidate: Ketan Shukla Mobile No.

Roll No. : Start Time 2:30 End Time.....

Date of Examination: 22-08-24 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		

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7	10	
8	10	
9	10	
10	10	
TOTAL MARKS - 100		

GRAND TOTAL -/ 250 EVAL CODE: EVAL DTE:

GENERAL INSTRUCTIONS

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.

सामान्य निर्देश

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:

<u>Student Concerns / Query</u>	<u>Evaluator's Feedback / Response</u>
1	1
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2	2
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3	3
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MARKING SCHEME *

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.

<u>IMPORTANT QR CODES</u>	
 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

AREAS OF IMPROVEMENT

IMPROVEMENT SUGGESTIONS

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Pg 1

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)

India is currently having 5.6% Fiscal Deficit, which is expected to reduce to 5.1% in FY25.

Factors contributing to High Fiscal Deficit

- ① High revenue expenditure of the government ₹ 37 Lakh crore in Budget.
- ② Low tax-to-GDP ratio.
[Data] 11.7% { China = 20% }.
- ③ Post-pandemic fiscal challenges.
- ④ High subsidy burden on Government
[Ex] 2.1 Lakh crore ₹ Food subsidy.

Potential consequences of such deficit.

- ① Debt-burden would increase.
[Data] Already 81% Debt-to-GDP.

- ② Sovereign rating would decrease.
- ③ FDI outflow could happen.
- ④ Low fiscal capability for capital expenditure. Ex Infrastructure of Railway.
- ⑤ Inter-generation equity issues.
↳ debt servicing by next generation.
- ⑥ Crowding-out effect → leading to cost push inflation.

Measures for Fiscal consolidation.

- ① Improving tax compliances.
→ Digitisation.
→ Auditing. (random)
- ② Reducing the revenue expenditure, and more focus on Capital expenditure.
- ③ Reducing the public politics and populist measures. [Subramania Balaji Judgement]
- ④ Privatisation of law-making CPSEs.
- ⑤ Mobilising finances from disinvestment.

Above steps would ensure fiscal consolidation, necessary to achieve a sustainable economic growth.

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2.

2047 तक भारत के विकसित 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)

According to World Bank, an 1% increase in CAPEX, leads to 2.5% increase in GDP growth rate in long term.

Potential of Capital investment in achieving developed nation goal by 2047

- ① Capital investment would lead to crowding-in → thus enhancing economic activity.
- ② Employment generation in construction sector.
- ③ Reducing logistics cost due to road & railway infrastructure improvement. Data 14% Logistics Cost
- ④ Regional Disparities would reduce.
- ⑤ Energy self-sufficiency could be

achieved $\Rightarrow$ Solar Park, Green H₂.

- ⑥ Developed nation goal with Border security $\rightarrow$ Border infrastructure.

Challenges India Faces.

- ① Target of Capital expenditure not achieved.

$\Rightarrow$ Rs 9.5 Lakh Crore spent, 10% less than outlay.

- ② Corruption & Red-Tapism in the infrastructure development.

- as pointed out by Mo Road

- ③ Technological insufficiency in the sectors of Energy.

- ④ Import dependence still a challenge.

$\Rightarrow$ Waree Technologies largest Indian solar panel manufacturer, imports 4/5th raw material from China.

- ⑤ Insufficient funds & Budget cutlay.

- ⑥ Repeated delays $\Rightarrow$ Delhi-Mumbai Expressway.

Removing challenges & introducing efficiency in the infrastructure sector necessary.

- Kelkar Committee

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)

Agriculture in Urban areas emerging as Peri-urban agriculture, to reduce the time delay of transportation, and achieve fresh farm produce needs.

Opportunities in promoting peri-Urban agriculture in sustainable manner.

- ① Complementing Food Processing Industries.
- ② Food & nutritional security.
- ③ Lesser pressure on soil Health & land degradation.
- ④ Lesser need of [Storage] facility.
- ⑤ Localised consumption & production, promoting regional growth.
- ⑥ Sustainable practice would enhance

the agriculture productivity.

- ⑦ Reducing issues of Fertilizer-leaching
- ⑧ Reduced issues of Bioaccumulation & Biomagnification.

- ⑨ Employment opportunities to locals.

Challenges

- ① Lack of proper agricultural knowledge.
- ② Faulty practices.
- ③ May not remain sustainable with growing demand.
- ④ Lesser in quantity.
- ⑤ Competition to the traditional agriculture.
- ⑥ Lack of Government support or Policies.
- ⑦ Poor awareness & penetration.
- ⑧ Wastage is very High due to improper Handling.

Alternate agricultural methods are need to encouraged to reduce the land pressure on Agriculture.

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 have a 57% import dependency on oilseeds; and pulse production is also only 26 million tonnes annually.

Major challenges faced by Pulse & Vegetables oils

- ① More perishability of these crops, thus farmers sticking to rice-wheat culture. [Data] more than 75% food grain.
- ② Poor institutional credit access to these crops. [Data] 65% of credit goes to Paddy-wheat [RBI].
- ③ Closed procurement → no financial incentive.
- ④ Lack of Research & Development in these field; HYV seeds lacking. [Data] Only 0.34% of Agri GDP goes to Research.

⑤ Agricultural inertia of farmers.

⑥ Lack of downstream demand.

↳ less no. of food processing industry.

Measures to address these challenges.

① Covering the pulses & vegetable oils in the ~~PMF~~ PM-FBY (insurance)

② Increasing MSP for these crops.

↳ can resort to open procurement.

③ Incentivising demand by encouraging food processing sector. - DALWAI

④ ICAR, IARI must be directed to perform research on HYV seeds of pulses.

⑤ Investment in supply chain & cold storage facility - Dalwai Committee

⑥ Improving mechanisation of vegetable & pulses cropping - FAO.

Self-sufficiency is required to reduce the ~~export bill~~ Import Bill & enhancing security of food.

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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)

Biomanufacturing & Bio-foundry are concept of using the biological resources for performing task of manufacturing or production of goods. Ex: Biofuel.

Potential in driving India's future toward a sustainable green economy.

- ① low cost production of goods
→ less pollution.
- ② Promotes circular economy.
- ③ "Waste is only a misplaced resource" idea, thus reducing the input raw material cost.
- ④ Biological processes, thus less harmful than conventional.
- ⑤ Lesser water pollution & less water demand in the manufacturing process.

- ⑥ Would reduce the import dependency of raw material.
- ⑦ Increase employment opportunities in new sector of Biomanufacturing & Bio-foundry.
- ⑧ Lesser energy requirements → lower carbon emission.
- ⑨ Can lead to solution of pervasive pollution of plastic waste.
- ⑩ Regional growth promotion due to no condition of "specific raw material".
- ⑪ Produced material also generally biodegradable in nature.

→ No government specific regulatory policies.

Challenges → Access Divide of technology.
 → Research still in nascent stage.
 → Could lead to Hazardous epidemic
 → Genetic Manufacturing could lead to Biodiversity loss.

Thus the Potential of Biomanufacturing & Bio-foundry could be utilized only if we tackle above issues.

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)

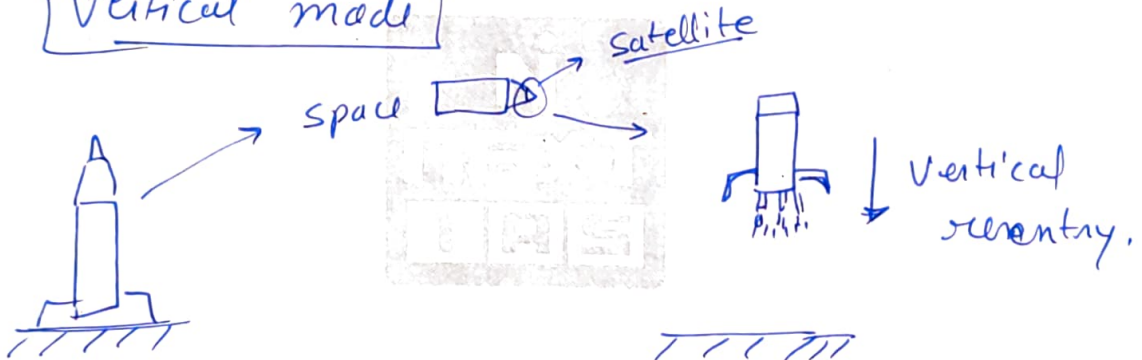
What are the principles behind the working of Reusable Launch Vehicle (RLV)? Explain the significance and potential benefits of use of RLVs in India's space commerce.

(10 marks, 150 words)

Reusable Launch Vehicles (RLV) are the space launch vehicles, from which a substantial part can be recovered for future use.

Principles behind the working of RLVs

① Space-X based principle of re-entry in Vertical mode



- minimizing thrust of air.
- Control system to remain vertical.
- Descent in slow mode.

② Space-Shuttle Based principle.
Horizontal re-entry

- Airplane type re-entry.
- Parachute flag used.

→ difficult to maneuver.



→ space →



→ Horizontal entry.

Significance & Potential Benefits of RLVs in India's space commerce.

- ① Reducing the cost per launch of ISRO.
- ② Incentivise private players due to lower cost.
- ③ Capturing the launch market of world (currently only 2%).
- ④ Encourage the Agglomeration economy of space technology.
- ⑤ Reducing dependence on ~~ex~~ imports for raw materials. (usability increase)
- ⑥ Multiple launches → Making Bhartiya Space station.
 - Gaganyaan.
 - Moon colony.

Pushpak
RLV tested
recently
[2024]

Along with space commerce benefits, RLVs are also environmentally more sustainable.

cost
effectively.

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)

Carbon Credit Trading Scheme is a method of market based mitigation of carbon emission in India.

Key features of CCTS (2023)

- ① Online portal & Database about carbon emissions.
- ② BIS given mandate for validating the carbon credits.
- ③ Trading of excess carbon credits earned in exchange of finances.
- ④ Trading is regulated, and auditing is included in the scheme.
- ⑤ CPCB will be coordinating agency.
- ⑥ Commodification of carbon credits to ensure mitigation in a capitalist approach.

Potential for mitigating GHG emissions in India.

- ① Making Carbon intensive industry financially unprofitable.
- ② Competitive spirit among industries for Carbon sequestration.
- ③ Achieving the NDC target of 2.5-3 Billion Tonnes of Carbon capture.
- ④ Step toward net-zero by 2070.
- ⑤ Quantification of environmental issues.
↳ Would lead to green-economics.
- ⑥ Enhance the research & development toward less carbon-intensive methods.
- ⑦ Ecocentric approach in economic growth.
- ⑧ Curbing the 'Point-source' emissions from industries.

Issues → Green washing
→ Measurement issues.

↳ Lack of institutional capacity of BIS

↳ Pressure on inflation → cost push.

Along with CCTS(2023), there is a need of nature Based solution such as Afforestation & Ocean preservation for achieving SDG-14

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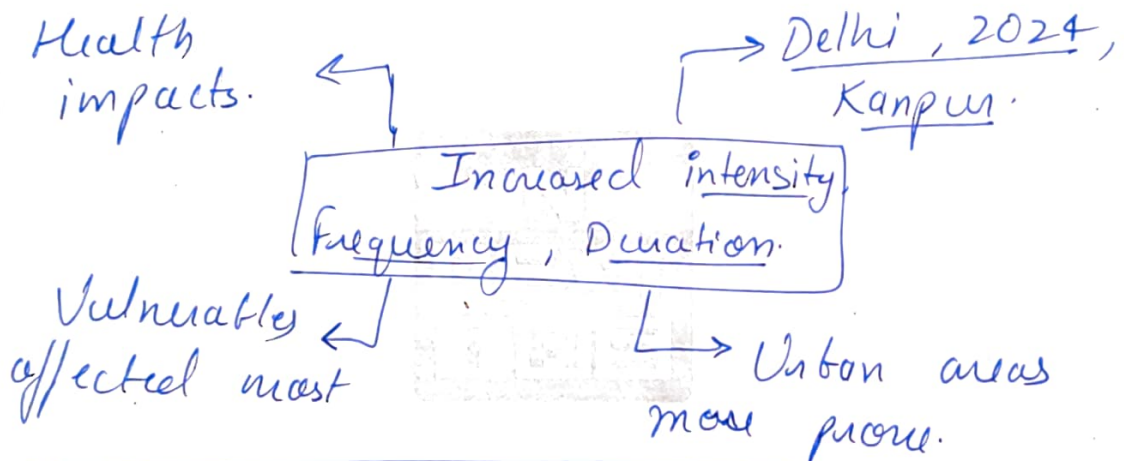
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8.

पिछले दशक में हीट 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)

Heatwaves refers to the increase in temperature of a region above 40°C (37°C for hilly), with a deviation of 4°C from average temperature.



Time to include 'Heat waves' as notified Disaster.

① Multi-faceted impact of Heat-waves.

- Health
- Biodiversity.
- Water-stress.

② Reducing the effective labour hours.

[ILO]: upto 1.5 Hrs of labour loss due to heat waves (Per day)

- ③ Heat-strokes → may cause even deaths or permanent Damage.
- ④ Concern of ~~fires~~ fires at various places.
 → Forest (Russian Forest Fire) of 2010
 → Landfills
 → Industry.
- ⑤ Vicious cycle of poverty.
 → Reduced productivity at work
 → Physical stress.
 → Health expenditure.
- ⑥ Deepening the water crisis
Data only $1300 \text{ m}^3/\text{person/year}$ will be available by 2030.
- ⑦ Glacial melting as a By-product.
Ex 2003: Europe's Mountains melted 15% glaciers.

→ still having a vague definition.

→ environmental phenomena,

Issues in notifying

not much to be done to prevent

→ Adaptation require structural changes.

→ Almost every district affected → NDMA don't have such capacity.

Kamal Kishan's recommendation could be followed to tackle Heat waves.

9.

भारतीय सशस्त्र बलों द्वारा हाल ही में तैयार किए गए 'साइबर-अंतरिक्ष अभियान (Cyberspace operations) के लिए संयुक्त सिद्धांत' से पारंपरिक ऑपरेशनों के साथ-साथ ग्रे 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)

"Joint doctrine for cyberspace operations" is a progressive step toward countering the cyber-warfare in the era of continuous cyber attacks.

Strengthening Cyber-security postures.

① Conventional operations:

- (i) Hacking & cracking into the cyber space of another nations.
- (ii) Preventing cyber-attack on critical infrastructure.
 (Ex) [2024] Attack on C-Edge Banking Technology
- (iii) Capability to have a mutually assured destruction idea with China & Pakistan.
- (iv) Countering the propaganda warfare during war.

- (v) Securing the critical information and communication.
- (vi) Preventing collapse of digital services in times of war.

Star ② Gray-zone warfare

- (i) Countering the constant Behavioral manipulation via social media.
- (ii) Effective measure against narrative warfare in global news.
- (iii) Capability to affect the information & communication network of enemy.
- (iv) Secret information extraction. Ex Pegasus.
- (v) Collaborating with various like-minded nations for intelligence sharing.
Ex 5 eyes.
- (vi) Daily monitoring of any adverse consequences of digital attack/warfare.

Along with Cyberspace doctrine, India needs a Space-warfare doctrine and National security doctrine to counter all security threats.

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)

India shares the longest border with Bangladesh; and Pakistan is always in state of Proxy-war, thus there is a requirement of increasing capacity & mandate of BSF.

Necessity

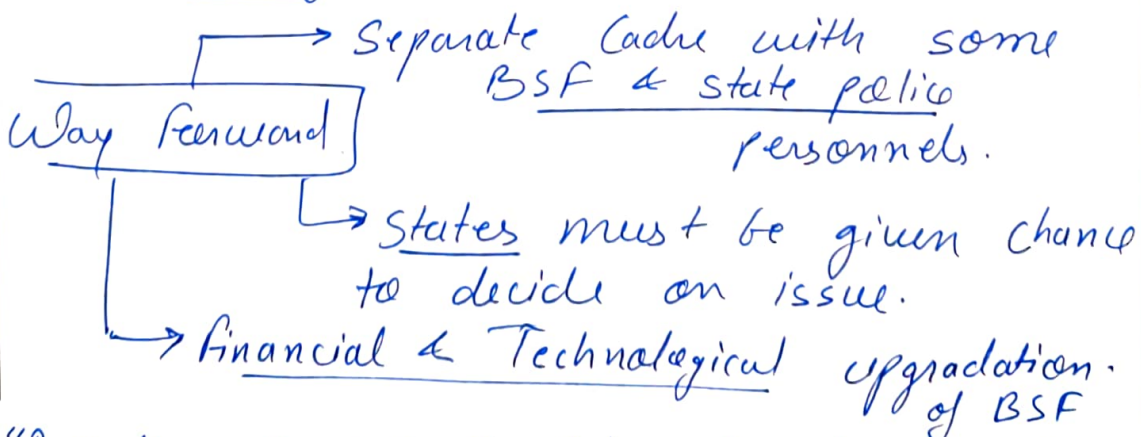
- ① Countering the illegal arms trade, and drug trafficking cross border.
- ② Illegal immigration Issues. MHA-2023 Report
- ③ Cross-border criminals having nexus with local police.
 ↳ BSF need to take necessary steps.
- ④ Riverine Border with Bangladesh, Local Police lacks capability to monitor border.
- ⑤ National security comes under Union list → thus BSF could be extended

with expanded mandate.

- ⑥ Breaking the Organised-criminal and terrorism nexus.
- ⑦ HUI radical groups (Bangladesh) and LeT (Pakistan) allegedly involved in Human trafficking. → BSF could tackle it.

Potential Issues:

- ① Federal tensions (Ex) Bengal, Punjab
- ② May lead to BSF force exercises
 - Human rights concern.
 - Lack of trust on BSF.
- ③ BSF not having technological capability to tackle such issues.
- ④ Issue of ~~to~~ non-cooperation from state police.
- ⑤ Diverting away attention from Border security.



"A nation projects its international strength in proportion to its internal cohesion" - Prakash Singh

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)

Despite having an economic growth of 8.2% in financial year 2024, India suffers from severe unemployment & under-employment.

PLFS: 3.2% Unemployment.

Structural unemployment

→ unemployment due to skill-gap in the workforce.

→ changing demand of skills and new sectors

Ex Technology of AI.

→ Shifting from traditional manufacturing to modern (Mechanisation)

Relevance in the context of India's current economic situation.

- ① India's transitioning toward secondary sector & tertiary from Agriculture. [Skill gap]
- ② Modern technologies of Artificial Intelligence, Software.
↳ causing structural unemployment.
- ③ Lack of appropriate training & skill development in education system.
[Data] Only 5% workforce is skilled.
- ④ Manufacturing shifting toward modern methods
→ mechanisation } causing
→ Robotics } structural
→ Automation } unemployment.
- ⑤ Traditional employment being replaced by more skilled workforce.
[Ex] Teaching being done online.
- ⑥ Mechanisation of farming would be leading to unemployment of labourers in rural areas.
[Data] 40% mechanisation in Indian Agri.

NEXT IAS

Candidates
write on thisPolicy measures to promote Job growth.

- ① Enhancing capability of ITIs for skill development according to the needs of industry.
 [Ex] 1000 ~~ITIs~~ ITIs being revamped in Budget FY 25.
- ② Industry - Academia linkages.
 - [USA Model]
- ③ Promoting & supporting the traditional skills, and its commodification.
 [Ex] PM Vishwakarma Model.
- ④ Upgradation & Technological enhancement of MSMEs [UK Sinha Committee]
 ↳ would absorb workforce.
- ⑤ Promoting women skills via SHGs, NIRD Institutions - self employment.
- ⑥ Subsidizing Corporates for internship to youth - [Budget FY 25]

Job growth is need of hour to utilize the Demographic Dividend.

2. 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 डैडमे 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)

MSMEs are the lynchpin of industrial activity in India, contributing to 30% of GDP output.

Role of MSMEs in fostering regional growth in India.

① Compliment the industrial activity in the lesser industrialized regions.
Ex) Uttar Pradesh, Bihar.

② Job growth even in the remotest of regions.
Ex) 11 Crore employed in MSMEs.

③ Consumption of the local raw-material → putting money in hand of locals.

④ Agglomeration economy in the nearby regions.

Ex) Industrial Corridor of Yamuna Expressway.

⑤ Credit access to under-served regions

⑥ Complementing the economic growth in Hilly terrain areas.

↳ Uttarakhand's Pharmaceutical MSMEs.

⑦ North-East Region's low connectivity hampers mainstream industry

↳ MSMEs help in locally produced goods & traditional art/Handicrafts.

↳ Bamboo Baskets. MSME.

MSME contributing to achieve industrial diversification & Technological advancement

① MSMEs can be utilized as nascent form of Big future industry.

→ mass scale production of local goods.

→ export promotion of Handicrafts.

→ Achieving self sufficiency.

② Diversification toward products

such as Toys, Watches, Electronics
etc.

③ Providing subsidized credit for
technological advancement
↳ could lead to increased productivity.

④ Changing the parameters of MSME
categorisation → could reduce dwarfism
phenomena - Economic Survey.

⑤ MSME-Academia collaboration. could
lead to cost effective technological
progress.

⑥ Dedicated MSME clusters for end-to
end production of goods.
↳ Semiconductors, Displays.

⑦ Regulated market & supply chain
of MSME → could attract FDI
in diverse sectors.

MSMEs facing issues of lack of Digitization
& poor institutional credit, along with
payment delays must be resolved,
as recommended by UK Sinha Committee

NEXT IAS

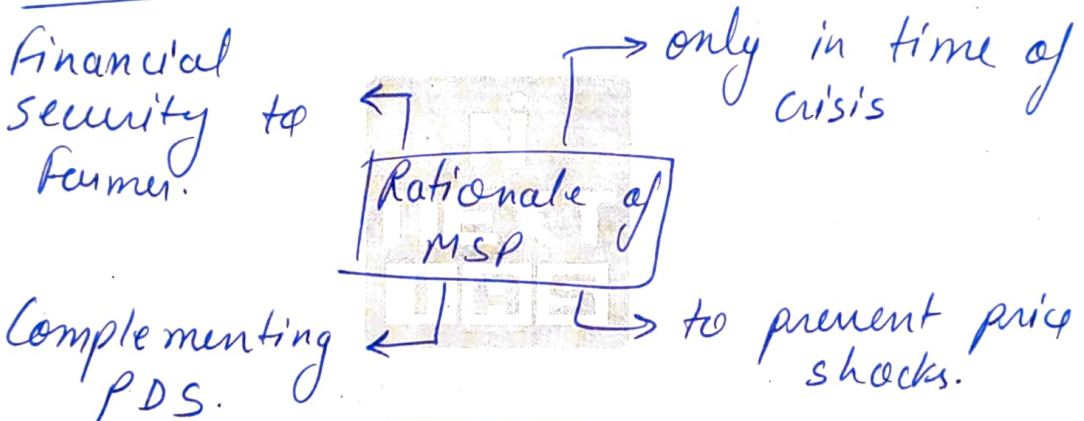
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13. "MSP का एकमात्र उद्देश्य किसानों को आकस्मिक मूल्य परिवर्तन के आघात से बचाना है"। क्या आपको लगता है कि MSP को वैधानिक बनाने से किसानों को आकस्मिक आघातों से बचाया जा सकेगा? MSP आधारित खरीद को प्रभावी बनाने के लिए अन्य कौन से उपाय किए जा सकते हैं? (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 is announced by CCEA on the recommendation of CCAP every year before the sowing season, for 22 crops.



Legalisation of MSP insuring farming from sudden price shock.

- ① Providing income security to farmers. for 22 crops.
- ② If legalisation of all crop MSP done, then crop diversification can be promoted.

- ③ Would prevent farmers from evils of informal money lending.
- ④ Demand / surplus production would not affect price to farmers.

However, legalising MSP would do more harm than good.

- ① Traders may not have financial capacity to Buy at legal prices.
→ unsold grains/crop.
- ② May lead to Black-marketing of procurement → more exploitation of farmer.
- ③ If Government buy at the price, then it would cost ₹ 18 lakh Cror.
→ fiscally not possible.
- ④ Issues of 'Market-distortion' allegation in WTO.
- ⑤ Would affect the inflation.
→ cost push inflation.
- ⑥ May affect the Food processing industry.

Other measures to make MSP-led procurement effective.

- ① Can follow the price-gap method of government support. (Payment)
 - ② Infrastructural development of cold storage & supply chain.
→ no distress selling at or below MSP.
 - ③ Encouraging Food processing Industry to enhance demand pull
↳ less dependence on MSP.
 - ④ Cooperative Based Storage & procurement
Ex: PM announced 70 million tonne storage in cooperative Basis.
 - ⑤ Modifying the essential commodities act to enhance private players' participation.
 - ⑥ Rationalising APMC markets & enhancing regulating oversight.
- MSP-led procurement need an overhaul to double the income of farmers.

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

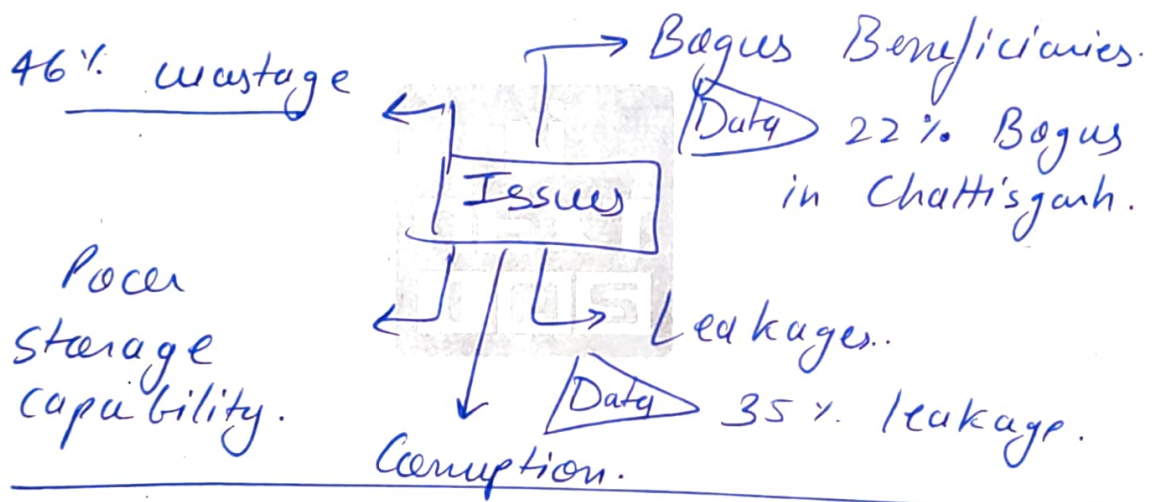
Discuss the role of the Food Corporation of India (FCI) in the Public Distribution System (PDS) to ensure food security in India. Suggest necessary reforms in the functioning of FCI to enhance its efficiency and effectiveness. (15 marks, 250 words)

Food Corporation of India is a statutory organisation, responsible for procurement & distribution of foodgrains to enhance food security.

Role of FCI in the PDS for Food Security

- ① Procurement from APMC market traders. (Middleman) of foodgrains.
- ② Transportation of the procured grains.
- ③ Storage facility to ensure lesser wastage from being rotten away.
- ④ Distribution to the states PDS shop/distributors.
- ⑤ Maintaining the database of PDS shops & its sales.

- ⑥ Checking the beneficiary list and updating it (SECC Data)
- ⑦ Ensuring no leakages or corruption in the PDS distribution.
- ⑧ Technological advancements for ensuring food security. Ex Fertilisation



Necessary reforms in the functioning of FCI.

- ① Infrastructural revamping to increase storage capability & reducing wastage.
- ② Digitalization of Supply chain & Beneficiary data.

- ③ Timely Audits to reduce corruption.
- ④ End-to-End computerisation.
— Shanta Kumar Committee
- ⑤ Encouraging selling of the surplus
foodgrain in market.
- ⑥ Social Audit for transparency &
Accountability by NGOs.
- ⑦ Technological upgradation for targetting
specific nutritional poverty.
 - Fortification.
 - Folic Acid.
 - Iron deficiency in women.
- ⑧ Outsourcing the distribution network.
↳ Private players for efficiency.
- ⑨ Collaboration with Food Processing
industry. → for perishable products.

FCI has been a pillar for ensuring
food security of 80 crore citizen, providing
subsidized foodgrain

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)

Indian Agriculture productivity is 60% of that of China, and food security is also showing challenges.

Global Hunger Index: 111 Rank.

Role of nanotechnology on enhancing agricultural productivity & food security

- ① Nano fertilizers such as Nano-Urea & Nano-DAP for improving productivity.
- ② Nano-sensors for precision farming & irrigation.
- ③ Nano-technology based food fortification in India. (Food security)
- ④ Soil study in controlled experiments using nano-technology.

- ⑤ Molecular fingerprinting. possible due to nano-tech. (used for chemical study of water, crop)
- ⑥ Neem coating of Urea. could be enhanced using nano-technology.

Recent Developments in nano-fertilizer & nano-pesticides.

- Nano-Urea.
- Nano-DAP
- ICAR research on Nano-pesticides.
- Nano-fertilizer. to be integrated with irrigation (Fertigation).

Potential Benefits

- ① Increased productivity upto 60% as compared to traditional fertilizer.
- ② Less costly. in application.
- ③ Higher absorption rate by the roots of plant.

- ④ Easier to use and carry.
- ⑤ Reduces changes of percolation of fertilizer in the ground.

Risks

- ① Under-researched: Thus unknown long term issues
- ② May cause self-replication due to nano-technology.
- ③ Could harm the farmer due to skin absorption.
- ④ Nascent stage of development.
- ⑤ Access-divide: Poor vs Rich
Awared vs illiterate
- ⑥ Resistance to change among the farmers.

Above issues need to be addressed to achieve food security via nano-technology.

2023 का भौतिकी का नोबेल पुरस्कार क्वांटम डॉट्स के संश्लेषण की खोज के लिए एकिमोव, रुस 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 the objects with all three dimension of quantum level.



Application of Quantum Dots.

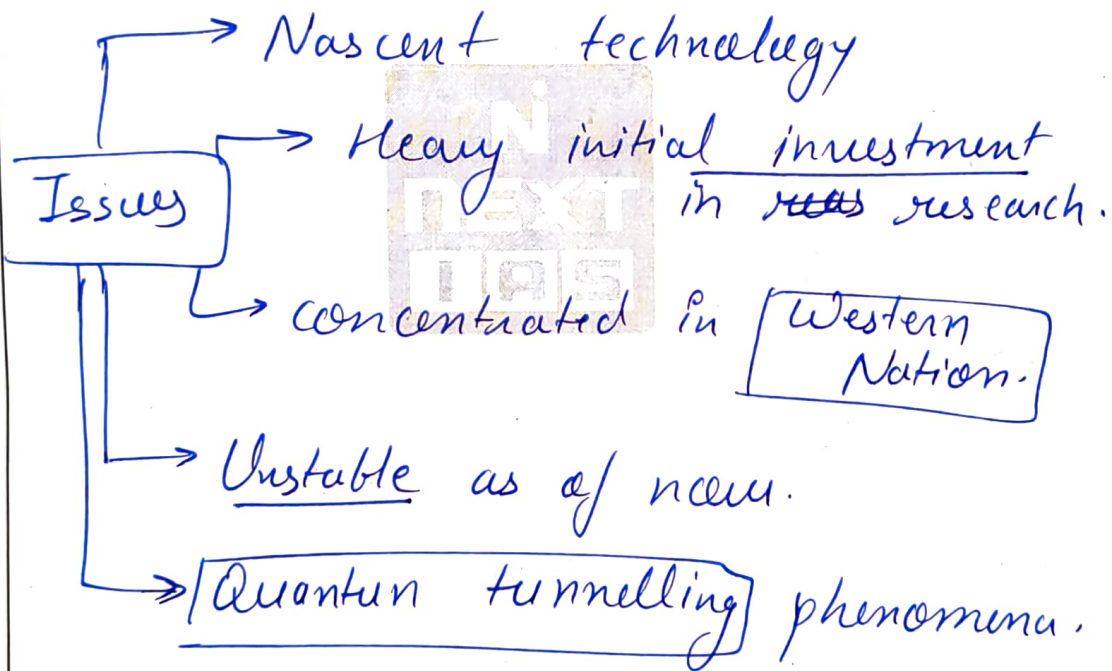
- ① Due to colour changing ability, could be used in Television screens.
- ② Used as a method of communication as Quantum communication.
- ③ Used in medical field due to its ability to run through body with minimal immune rejection.
- ④ Used as a tool to research on the subatomic particles.

- ⑤ Bombardment experiments. to research for the Higg Field.
- ⑥ Producing vibrations of atto second level of time periods.
- ⑦ Quantum Dots can be used to complement the nano-technology in various fields.
- ⑧ Quantum computing as a prime application of Quantum Dots.
- ⑨ Encryption & Decryption of the data using quantum Dots.
- ⑩ Could be used to make Quantum well & Quantum Wire through Bottom up approach.
- ⑪ Developing & experimenting newer medicine using Quantum Dot

and its medium.

(12) [Quantum Dot] as a tool for research on Human Body cells & sub-cellular entity.

(13) Used for [Quantum printing] and research on [Quantum teleportation].



[Inter-disciplinary] approach much be utilized for research on such a new technology, and thus achieving scientific advancement together.

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)

India's legislation such as Wildlife Protection Act (1972) provides for protected areas such as National Parks, Wildlife Sanctuaries etc.

Role of Protected areas in Biodiversity conservation.

- ① Limiting the Human interference in the biodiverse areas.
- ② Prohibiting killing & hunting of various wild animals.
~~for~~ Elephant, Tiger.
- ③ Reducing the destruction of the ecosystem due to felling trees & industrial activity.
- ④ Affirmative actions for increasing the number of animals which are vulnerable.

Ex) Project Tiger, Crocodile.

⑤ Bio-diversity Conservation Sites.

Under Biodiversity Act: to promote flora & fauna & biodiversity.

⑥ Giving Tribal rights of coexistence, to make biodiversity conservation using traditional knowledge.

⑦ Reducing instances of Forest fires.

⑧ Preserving even the biodiversity under water. Ex) Palk Bay Conservation reserve.

⑨ Complimenting SDG-14, 15 (Water, Land life)

Effectiveness of National Parks, Wildlife Sanctuaries, Biosphere reserves.

① Increased the population of Tiger By more than 100% in last 20 years.

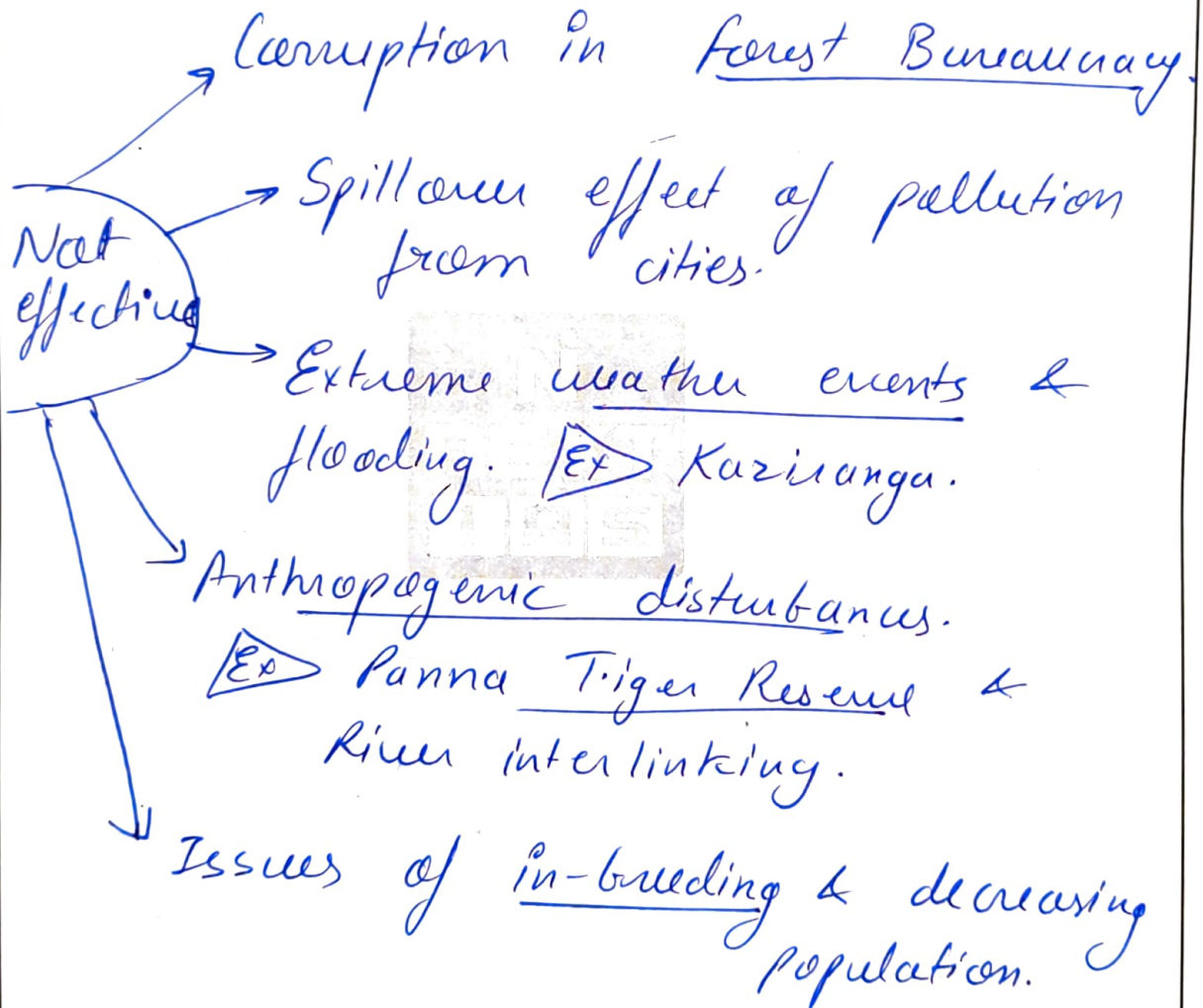
② Reducing instances of Alien invasive species

③ Strict penalty for deforestation

Ex) Shankuntalam group industries.

④ India Keeping status of Biodiversity Hotspot as per IUCN.

⑤ Cross-border collaboration for Biodiversity Ex Sunderban.



K. Kasturirangan's recommendation of minimizing interference with sensitive areas is the method for protecting Biodiversity

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 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)

Delhi experiences more than 10 times PM_{2.5} pollution, as permitted by WHO as safe level.

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

① Vehicular pollution causing 17% of total GHG emission, along with
→ SO₂ → Unburned Carbon.
→ NO₂ → Black Soot.

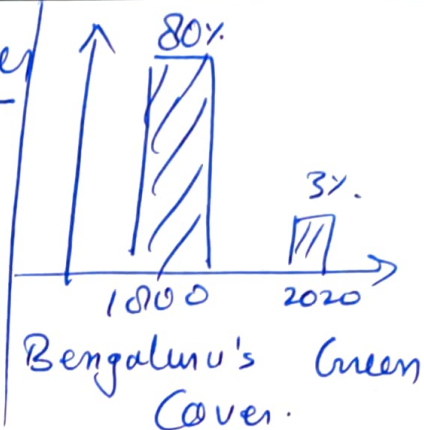
② Industrial activity along with usage of Coal.

③ Data 55% Energy demand met by Coal.

③ Construction activity: Major source of PM_{2.5}, PM₁₀.

④ Broad Day sunlight & Vehicular emission ⇒ together make ground level Ozone.

⑤ Lack of Green cover to absorb the Particulate matter.



⑥ Lack of effective compliance of Pollution rules & laws.

⑦ Inadequate capacity of CPCB & SPCB for curbing pollution.

⑧ Renewable technology still costly to shift to. (30% costlier)

Government steps efficacy in mitigating PM 2.5, 10 & Ozone pollution.

Positives → Strict legislations of Air Pollution Act (1981)

→ Statutory Bodies → CPCB
→ SPCB
→ CAQM.

→ National Clean Air Programme.

→ 50% cities experience improved

air quality.

→ Smog Tower in Delhi

→ Push for Electric Vehicles & Renewable energy (205 GW)

Issues in efficacy.

→ Implementation issues. due to poor compliance.

→ Development vs environment debates.

→ Population pressure [Ex] Gurgaon, Kanpur.

→ Huge investment cost to shift source of power of industry.

→ Health impacts not taken in account of policy making.

[Data] Lancet: 7 year life decrease in metro cities due to pollution.

Need of the Hour is to collaborate with international players for renewable technology & Decarbonisation at a speedy spirit.

19.

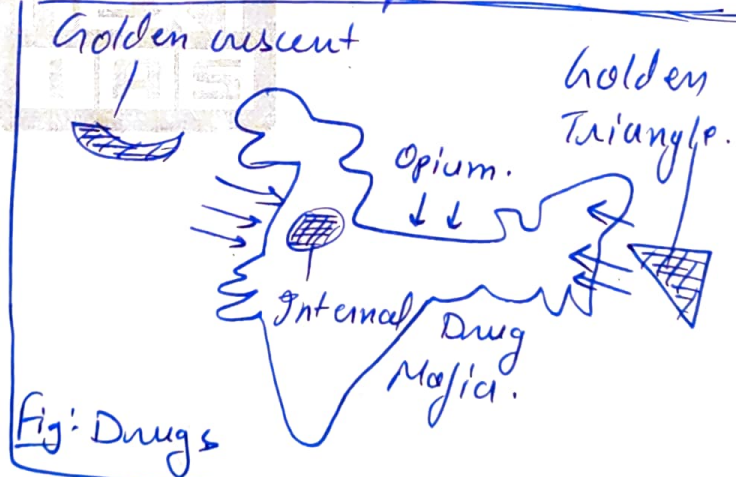
अंतर्राष्ट्रीय नारकोटिक्स नियंत्रण बोर्ड (INCB) रिपोर्ट 2023 दक्षिण एशिया में मादक पदार्थों की तस्करी के बढ़ते खतरे को प्रदर्शित करती है, जिसका कि भारत एक प्रमुख केंद्र है। भारत के संदर्भ में इस चुनौती के विभिन्न आयामों का विश्लेषण कीजिए। साथ ही, इससे निपटने के लिए बहु-आयामी दृष्टिकोण भी सुझाइए। (15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

Drug trafficking is a serious internal security threat to India, as signified by NCB's data of 300% increase in usage of opium, and 170% in Heroin. [2022]

Drug Challenge with respect to India

① Proximity to Golden Crescent & Golden Triangle



② Internal Organised criminal networks. Ex Punjab

③ Open Border with Nepal → Major source of Drug trafficking.

④ Challenge to Human resource &

Demography for India.

Data > 60% working age.

⑤ Challenge of synthetic drugs in India.
Ex > Methamphetamine.

⑥ Technological development causing security concerns of drug delivery.
Ex > Drones used in POK Border.

⑦ Dark-web as a new tool for marketing & payments.
↳ lesser traceability.

⑧ Maritime border being used for Drug delivery. Ex > Operation Pongee [2024].

Measures for a multi-pronged approach.

① Investigation drives in the most affected areas such as Jammu, Punjab, North East

② Dismantling the organised criminals who indulge in cross-border transportation.

- ③ Recruiting talent who knows to track & Hack Dark-web sites.
 (Ex) TOR Browser experts.
- ④ Extradition Treaties (Ex: Afghanistan) & Mutual Legal Assistance treaty.
 (Ex: UAE) for trans-national cooperation.
- ⑤ NGOs & CSOs collaboration for rehabilitation & recovery of addicts.
- ⑥ Strengthening the NDPS Act by plugging loopholes.
- ⑦ Building capacity of NCB
- ↓
 Human
Resource

↓
 Technology

↓
 Mandate.
- ⑧ Financial flow must be tracked.
 (Ex) AUSTRAC model of Australia.
- ⑨ Removing all the social media content addressing glorification of Drugs.
 (Ex) NetzDG model of Germany.
- Health of Youth is key factor for National Development. - Economic Survey.

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।

① (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.

②

(15 marks, 250 words)

Naxalism is the extremist ideology which vows for ~~for~~ violent means to dismantle the current political structure, and establishing a new one based on Communism.

Response should be integration of soft & Hard security.

Socio-economic approach:

① Development of infrastructure at the affected areas.

→ Bastar railways.

→ Road Requirement Plan.

② Skill development : to increase capability to ensure economic growth.

→ employment

→ Social security

(Ex) ROSHINI Scheme.

③ Aspirational District Program to

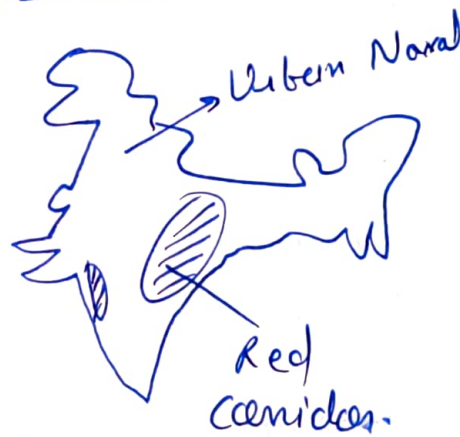


Fig: Naxalism.

ensure equitable development.

→ less feeling of deprivation.

④ Enhancing the local government rights Ex PESA Act. 1995

↳ to ensure political representation & removing feeling of 'silence'

Hard security measures requirement:

⑤ Security related expenditure. (SRE)
reimbursement

↳ enhancing state's capacity.

⑥ CAPF & CRPF deployment

↳ feeling of security & elimination of violent ideologies.

⑦ Tri-state Battalions to ensure inter-state coordination

⑧ Enhancing police station & fortifying it

↳ ensuring Hard security maintenance.

Further integrated approach required

- ① Effective functioning of Civic Action Programme in the region.
- ② Political inclusion of the leaders in the state assembly & Parliament.
- ③ Technological upgradation of Security forces - MHA Annual Report
- ④ Civil society presence as a soft measure.
- ⑤ Rehabilitation measures for former naxal cadres (soft measure)
- ⑥ Surgical strikes on the maceist leaders (Hard measures)
- ⑦ Police to be provided with extra powers to maintain law & order.
- ⑧ Efficient implementation of FRA Act & LARR Act - Xaxa Committee

"We must recognise that Naxalism is not only a security challenge, but a development deficit challenge" - Manmohan Singh