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16 AUG 2024

NEXT IAS

GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE: GSMAC2403

Name of Candidate: Vinay D Mobile No

Roll No.: PTIP 220124 Start Time 9:00 AM End Time

Date of Examination: 16/08/2024 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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5	10	
6	10	
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 भ्रष्ट 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 10 प्रश्नों के उत्तर-लेखन का प्रयास करें।
4. प्रत्येक उत्तर, प्रश्न 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। अव्यवस्थित लेखन से बचें।
7. QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS:

FOR OFFICE USE ONLY

Student Concerns / Query

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Evaluator's Feedback / Response

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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.

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

AREAS OF IMPROVEMENT



IMPROVEMENT SUGGESTIONS

④ lack of investments in high output sectors → Manufacturing at 16% of GDP only.

Potential Consequences :

- ① low investments and Gross fixed Capital formation.
- ② Job less growth → due to lack of skills
- ③ lowering the Credit rating of government
(eg): Indian G-sec is present in BBA category
- ④ Investors Confidence will reduce
↳ FDI, FPI will be affected.
- ⑤ Infrastructure Creating compromised.

Measures
for
fiscal
Consolidation

- ① freebie culture to essential subsidies
(eg): E-vouchers for health
- ② private investments
↳ Budget [2024-25] highlights this.
- ↳ ③ skilling of youth → PM Kaushan Vikas 4.0

Hence fiscal deficit should be
guided to 4.5% GDP as recommended by
"Janam Singh Panel."

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)

Capital investments is called a virtuous growth cycle in an economy as it generates infrastructure, jobs and opportunities for the citizens.

Potential of Capital investment :-

- ① Brings in idle assets from gold and land investments.
(eg) :- National monetisation pipeline.
- ② Building new projects → road, railways Connectivity to rural areas.
- ③ Employment opportunities in various sectors (eg) :- Potential of Textiles
- ④ Financial inclusion → through investments in small savings, G-secs

Challenges India face in this regard

① lack of deep bond market in India.

(eg): 90% Indians hesitant to invest in shares → prefer Gold (ICICI report)

② Obligations on government → revenue expenditure takes high share

③ Private Investments. → minimal

(eg): preferring real estate over R&D

④ Significant risks. → PSB NPA's → 5%
↳ slowdown in economy.

⑤ Inflation → hovering at 5.2%.

⑥ Job less growth → Investment by middle class suffers.

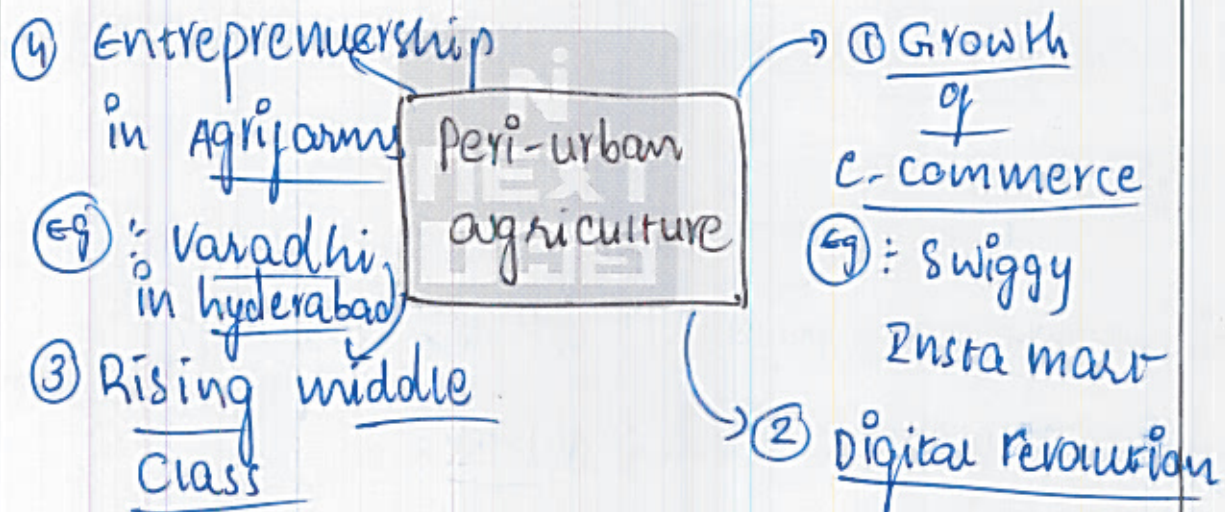
As said in Budget 2024-25, Private sector should take the baton of investment to ensure Viksit Bharat aim by 2047.

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)

India's urban areas cater to 34% of population with NITI Aayog predicting 50% population by 2050.



opportunities in promoting peri-urban agriculture

① Growing demand due to awareness about health choices

⑤ FIT India campaign,

② Choice of Consumers → availability

of fresh produce.

③ farmgate to fork model $\rightarrow$ no intermediaries between farmer and consumer.

④ Reduce wastage of food $\rightarrow$ around 40% wastage as per FAO

⑥ Employment opportunities to peri-urban population.

challenges : ① land availability $\rightarrow$ as real estate thrives in urban areas

② Lack of technology $\rightarrow$ like vertical farming, organic techniques.

③ High cost of sustainable produce.
 $\rightarrow$ 20% greater than normal crops.

④ Divide on class lines. $\rightarrow$ ghettoization and lack of availability for poor.

Hence, peri-urban agriculture hold key to ensure sustainability (SDG-13) and nutritional security (SDG-2).

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 imports >80% of its
oil palm needs from South East Asia
and is also import dependent to
meet pulse demand

Major challenges :

- ① pulses : ① Cereal Centric Agriculture
- ② High loss of pulse crops to pests.
↳ Around 25%
- ③ vagaries of nature → failure of
monsoon and droughts (eg) : ELNINO
- ④ lack of processing infrastructure
↳ storages and warehouses
- ⑤ Vegetable oils : low emphasis
on oil palm production

- ⑥ lack of Extension services to farmers
↳ only 40% receive as per NSO
- ⑦ fear of unknown → farmers tend to
grow rice and wheat.
- ⑧ lack of Agri Entrepreneurship and low
private investment → only 2% startups
in Agri sector

Measures :

- ① Top to TOTAL → 22 Crops included
in Krishonnati Abhiyan → viability
Gap
funding
- ② National mission on edible oils —
oil palm → Target to increase
production to 10 MMT by 2026
- ③ Warehouses and Cold storages for
pulses → Decentralisation to states
Hence Shanta Kumar panel
recommendations of expanding MSP
to oilseeds can help achieve sufficiency

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 hold a promise to ensure SDG-13 of climate action and sustainable production and consumption patterns SDG-12

India's
future
to

Sustainability

→ ① Panchamrit goes in Cop 26

→ ② Green economy
↳ Key Pillar of Budget

2023-24

↳ ③ Life Mission to provide midset change.

Potential of Biomanufacturing and Bio-foundry. :-

① usage of biodegradable material in production (eg) :- Bio-plastics

- ② Circular economy → Recycled products have wider usage
- ③ Agriculture → sustainability through innovations like bio-sensors
- ④ limits the consumption of fertilizers
(eg): present N:P:K → 18:3:1
- ⑤ Bio-foundry → caters to conscious citizens needs.
- ⑥ Helps reduce pollution → of Oceans, rivers → Reduce siltation
- ⑦ Reduces GHG emissions due to lowering fossil fuels (eg): Bio-CNG
- ⑧ Waste to wealth → 500 new plants under Gobardhan

However challenges remain like high cost of technology, lower consumer demand which has to be addressed through strong policy action

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 are the spacecrafts that can be used again for future space expeditions. Recent RLV-LEX tech demonstration was done by ISRO.

Principles behind Reusable launch vehicle

- ① Reentry of the space shuttle into the earth orbit. after deliver of satellite.
- ② usage of thrusters to come out of space
- ③ helps in cost efficiency

Significance and benefits in space Commerce

- ① Growing demand for space economy

\$50 bn by 2030

- ② RLV helps in reducing cost of space expeditions.
- ③ sustainability → circular economy in space
- ④ Reduce the space debris
- ⑤ Avoiding Kessler Syndrome → protects the space satellites.
- ⑥ RLV helps in ensuring 'peaceful and humane use of space'
- ⑦ can be used by launch on demand
- ⑧ helps in carrying out space exploration, Research and development

Issues

- ① primitive stages of development of technology.
- ② Complex procedure of reentry
- ③ Threat of failure → harming Astronauts

Hence, more research is needed in a technology that is set to revolutionise H.O. Operations of space ✓

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 Credits refers to the right to emit 1 tonne of CO₂ emissions.
It emerged in the Kyoto protocol of UNFCCC Rio Convention.

Key features
of
CCTS 2023.

- ① participation of industries in trade.
- ② CERC ~~sto~~ to be the "regulatory authority" managing the prices.
- ③ Bureau of Energy Efficiency (BEE) will be the monitoring Authority
- ④ seamless transfer of credits with options of market trade.
- ⑤ strict checks and balances to prevent Green Washing

Potential to mitigate GHG emissions.

- ① Incentivise the "sustainable technologies".
(Eg): solar parks can generate carbon credit.
- ② Motivate Industries to diversify their energy basket → usage of hydrogen in cement production.
- ③ Helps in reducing emissions → contributing to panchamrit goal of reducing 1 billion tonnes of CO₂ by 2030
- ④ Cooperation on global efforts of Net zero as a leader of global south.
- ⑤ Potential of "transfer of technology" by developed world.

India has emerged as a major carbon credits market and hence present regulation helps in reversing the global boiling trends

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)

Heat waves are abnormal
high temperatures of $>40^{\circ}\text{C}$ in plain
and $>30^{\circ}\text{C}$ in hilly regions. that
affect the socio-economic wellbeing of
citizens.

Increasing
Intensity,
frequency
and
duration

① last 7 years are
the highest recorded
hot years successively.

② Increasing fossil
fuel use, Global
warming.

③ Climate changes, marine
heat waves,
El NINO events

Benefits of notifying Heat waves in DM
Act

① Statutory obligations to prevent

Heat wave action plans of states

② Mobilisation of resources from NDRF funds to bring relief.

③: Cloud formations, Greening of urban areas.

③ Institutional mechanism → to ensure Coordination and reduce suffering

NDMA → SDMA → DDMA under PM

④ Awareness generation about heat waves and preventive measures.

⑤ Response force to ensure implemen-
tation of action plans.

Way forward.

① Structural measures

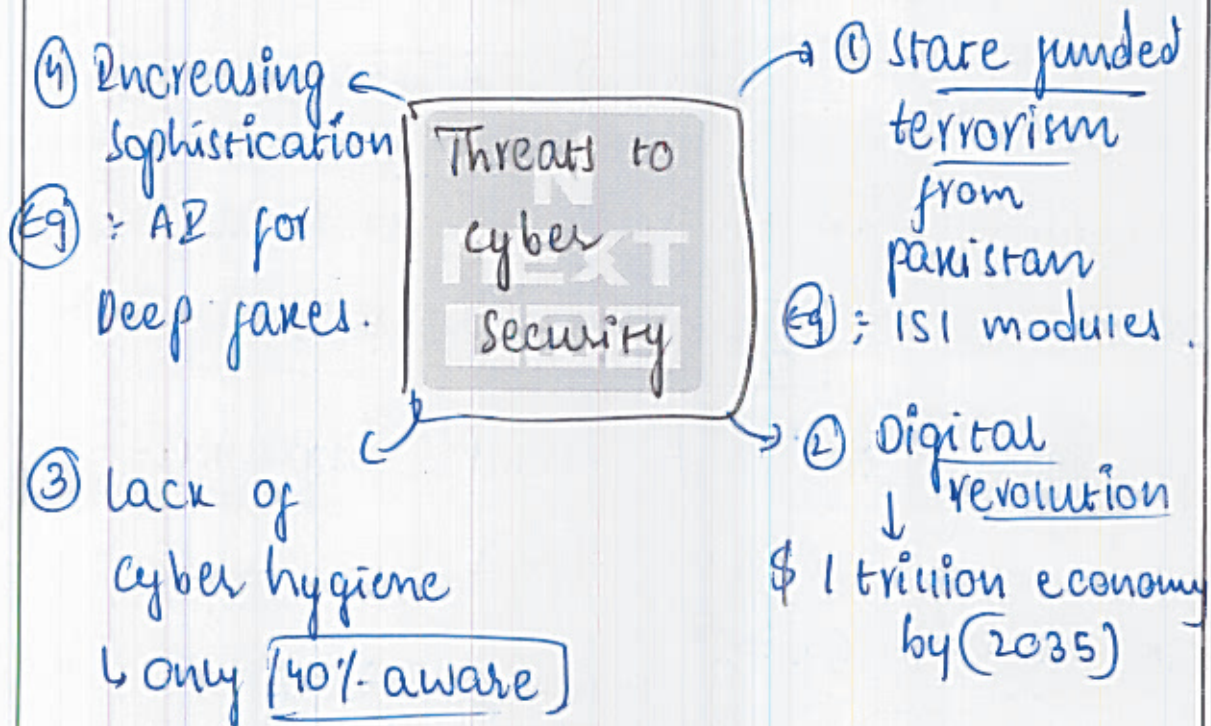
- sustainable building codes.
- Renewable energy sources.

② Non structural → ① Nagar van yojana
→ ② Heat holidays

With Heat waves causing more than 22000 deaths (2000-2019) (NDMA), making it a Disaster can help.

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)

According to Global Cyber Security Index by ITU, India is ranked 10th in terms of cyber security



Joint doctrine strengthening cyber security posture :

- ① Enhanced role to Defence Cyber Agency → In protecting critical Defence infrastructure

② NATGRID → in Intelligence sharing across the armed forces.

③ Coordination with Cyber police to fight conventional operations like recruitment of terror sympathisers.

eg: Kerala youth joining LeT

④ fight against phishing, malware attack

eg: Red Echo crippling electric grid of Mumbai

⑤ Gray zone warfare → Chinese media giants [Huawei] involvement in surveillance

⑥ Doctrine highlighted need to stay reliable in [devices] → mobiles
→ PCs

⑦ Convergence with [Budapest Convention] on cyber security.

Hence, it helps in protecting

the critical data which became a new oil in 4th Industrial revolution.

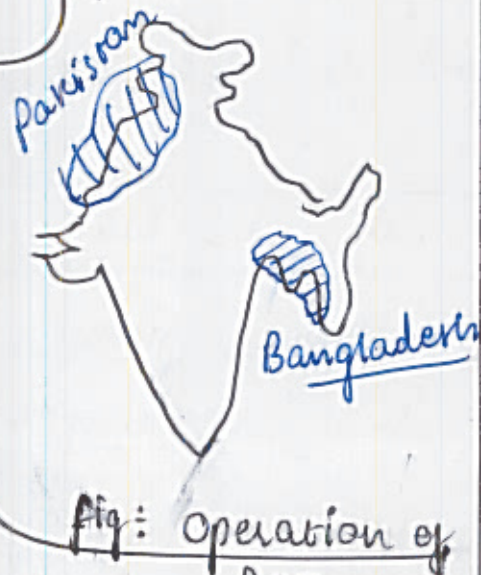
10. पाकिस्तान और बांग्लादेश से सटे राज्यों में सीमा सुरक्षा बल (BSF) के प्रादेशिक क्षेत्राधिकार के विस्तार की आवश्यकता एवं संभावित मुद्दों पर चर्चा कीजिए। (10 अंक, 150 शब्द)
Discuss the necessity and potential issues surrounding the extension of the Border Security Force's (BSF) territorial jurisdiction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

Recently, the territorial jurisdiction of BSF was increased to 100 km from the border area bringing in concerns to states like West Bengal

Necessity of extension :

① Sensitivity of Borders

↳ Rogue state of Pakistan and terror promotion

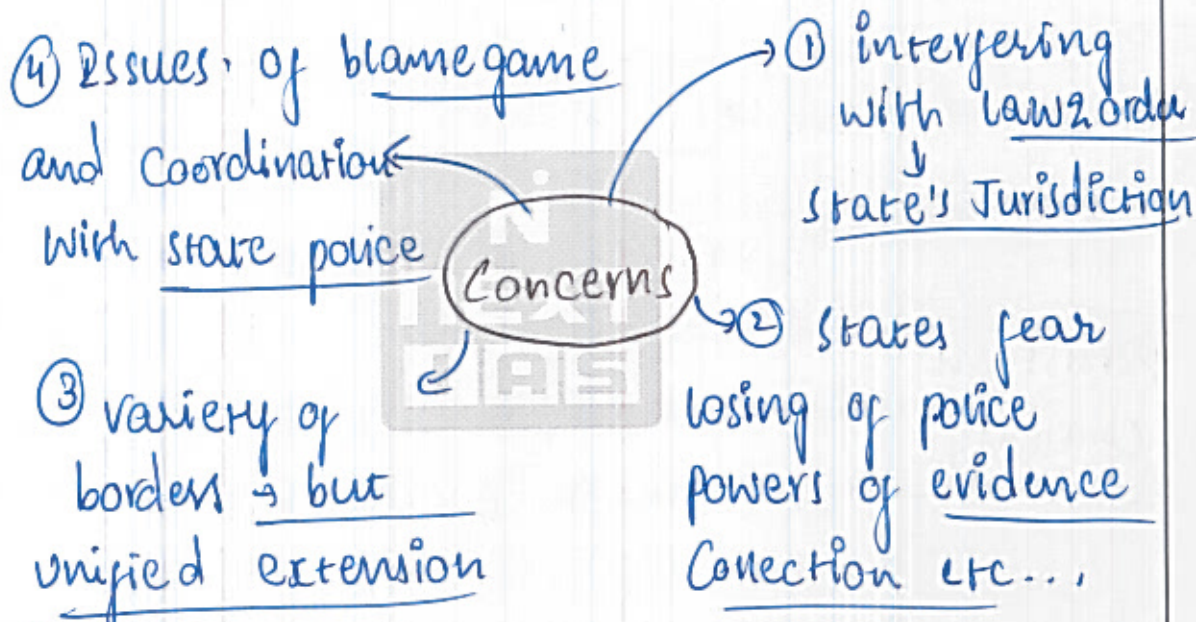


② Bangladesh → porous Borders BSF
with concerns of Cattle smuggling and Refugees

③ Territorial Jurisdiction ensure Unified operations without Coordination Issues

④ Needed to bring in advanced technology like therman sensors, UAVS in effective monitoring of border area.

⑤ Ensuring wellbeing of border population
↳ vibrant village project BRO roads



eg: Entire North Eastern State of Tripura Comes under BSF.

Way forward

① political discussions through Inter state Council ^{NCRWC}

② Ensuring coordination of forces and enhanced seriousness

The recent changes can help strengthen the Internal security of India

Madhukar Gupta

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)

India's economy is facing
persistent unemployment of around
4-6% as per recent PLFS report.
Signifying Job less growth.



Concept of structural unemployment

↳ Refers to lack of employment
due to Lack of skills in
work force of an economy

② Rising technologies and lack of updation of skills leads to this.

③ Replacement of workforce with machines and tech
(eg) : AI replacing Bpo Jobs

Relevance in present scenario :

① India skills report → Around 52% of graduates are unemployable due to lack of required skills.

② Huge bulge in lower skill employment and lagging workforce for higher skills

③ Huge demand for MGNREGA especially during Covid shows informal nature of economy

④ presence of highly unorganised sector
↳ Around 95% of total economy.

⑤ lack of Industry - Academia linkage
↳ skills lagging for market needs

Policy measures for Inclusive growth :-

- ① PM Kaushal Vikas Yojana 4.0 → Reskill and upskill the workforce
- ② Women empowerment → bringing parity b/w FLFPR - only 29% and MLFPR - ~79%
- ③ Structural changes → Invest in high employment sectors → Textiles
Eg
- ④ Budget 2024-25 → Apprenticeship through CSR, Employment Linked Incentives
- ⑤ Widen the opportunities for LGRTQ, PwD friendly work environments.
India's 1% rich holds 40% of wealth (Oxfam report). Corrections needed to achieve Sabka Saath, Sabka Vikas

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 डैडमें 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)

India's MSMEs cater to
29% of GDP and 45% of nation's exports.
 showing the growth potential in economy.

Role of MSMEs in regional growth :-

① Reducing economic inequalities through Rural entrepreneurship.

(eg) : PM employment Guarantee scheme.

② Mobilisation of women → SHGs as
 Micro enterprises (eg) : Kudumbashree in Kerala

③ MSME Contribution to one district -
 one products (eg) : cluster of food
 processing in Uttar Pradesh.

④ Employment generation in rural areas
 ↳ reduction in urban migration

- ⑤ North East → Horticulture processing through Purvodaya scheme.
- ⑥ Semi-Arid regions. → use of MSMEs to bring equity (eg): Bilhona Ghee in Rajasthan

MSMEs - Contributing to Industrial diversification:

- ① Local level operations → willing to take risk of diversification
- ② success models act as inspiration for other MSMEs
- ③ Incentives of government → Mudra loans and definition changes
- ④ provisioning on adequate technology for diversification.

For Technological advancement

- ① Apprenticeship Courses in MSMEs -

Contributing to new tech

② collaboration of MSMEs with local colleges.
↳ Industry - Academia linkages.

③ profits → leading to investment in tech.

④ Government measures → SFRUTI, for textiles and PLI for various sectors.

way
forward.

① "Credit provisioning"

↳ Revision of Tarun loans
to 20 lakh (Budget 2024-25)

→ ② Export diversification of destinations.

↳ ③ Tech upgradations through knowledge sharing.

↳ ④ PPP models in regional development.

Sharda Prasad recommendations

on skilling can ensure growth of MSMEs
and becoming contributor to \$ 5 trillion
targets

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)

Minimum support price is the guaranteed price offered by government to farmers to prevent distress sale and provide cushion against price shocks.
legalisation ensuring sudden price shocks. ÷

- ① Guarantee of government
- ② Confidence building for farmer to invest in Agriculture
- ③ Vagaries of climate → Monsoon failure, ELNINO etc.. → farmers insured.
- ④ Improve the livelihood of farmers → NSO - farmer income only 16,000

Various concerns with legalisation :

- ① Huge fiscal burden → ₹ 17 lakh crore per annum if legalised
- ② High Buffer stocks → At present 280% of required Capacity of rice.
- ③ Wastage of food → 90,000 crore losses every year as per NITI
- ④ Increased litigation → burden of 4.7 crore cases as of now
- ⑤ Doesn't address structural issues
↓
lack of cold storages.
- ⑥ Disguised unemployment.

Other measures to make procurement effective :

- ↳ ① make other purposes get limelight.
↓
- ② Need for encouraging pulses and oil seeds → crop diversification

③ provision of $> 50\%$ + of cost price to millet cultivators $\rightarrow$ Water security

④ end to end digitisation of procurement process $\rightarrow$ Shanta Kumar recommendation

⑤ proper communication of MSP prices
 $\hookrightarrow$ only 20% farmers know pre sowing (NSO)

⑥ Buffer stock management
 $\hookrightarrow$ privatise the warehouses.

⑦ private procurement of MSP produce
 $\hookrightarrow$ contract farming model policy, 2020

⑧ price deficiency payment methods
 $\hookrightarrow$ (eg): Bhavantar Bhugtan Model of MP

Above measures along with PM - AASHA scheme helps ensure doubling farmers income.

14. 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 tasked with procurement of food crops from the farmers and the warehousing services of the stock. It operates through FCI ACT.

FCI → procurement
 → storage and
 → distribution to PDS shops.

Role of FCI in PDS to ensure food security. ÷

- ① Management of food stocks → Reduce wastage of food → (presently 46% rice wastage)
- ② proper vigil to curb pilfering of PDS stocks (eg): NSO highlighted ~35% illegal marketing.
- ③ Efficient distribution of produce

to 5.35 lakh FPS shops across India,

- ④ Ensuring operationalisation of One nation - one ration card.
- ⑤ warehouse maintenance → to ensure hygiene
- ⑥ prevention of Corruption in PDs delivery
- ⑦ GPS installation. in vehicle transporting and distributing the Agri produce
- ⑧ ensuring seamless transfer of funds to farmers as payments.

Present Challenges of FCI :

- ① overburdened with overflow of buffer stocks. (e.g.) : Rice, wheat
- ② lack of decentralised procurements
↳ collection inefficiency.
- ③ Nutritional insecurity → lack of pulses and millet procurements

④ Corruption and siphoning of funds.

(eg): Transparency International → 40% respondents of PDS shops agreed to bribe giving.

Measures to reforms FCI :

① Shanta Kumar Committee :

↳ Decentralisation of procurement to states.

↳ ② usage of ppp model in food procurement

↳ ③ limiting the PDS to bottom 20% of poor. (At present 67% population)

↳ ④ Digitalisation of End to end chain to ensure transparency.

⑤ Investments in Warehouses modernisation
↳ move from Cover & plinth system.

⑥ Negotiable Ware house receipts to ensure trade in markets.

Hence FCI should be overhauled to ensure SDG-2 of ending hunger as well as ensuring agriculture productivity

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)

Nanotechnology refers to wide applications dealing with nano materials of size (10nm-100nm). At the nano scale, materials exhibit different physical and "chemical properties".

④ Improving productivity through innovation

Role in Agriculture productivity.

① Efficient use of fertilizers

eg: Nano Urea
90% more efficient.

③ Nano pesticides

eg: Nano Silver
Prevents Crop loss

② Nano sensors

Measuring crop stress

Food security

① Nutritional uptake

eg: fortification of Rice with vitamin A

② more Cost effective → Catering

to nutritional needs of poor sections.

- ③ Technology upgradation → more production of pulses and nutri cereals.

Recent Developments in Nano fertilizers and Nano-pesticides :-

- ① IFFCO → developed "nano-urea"
- ② Nano-pesticides against fall army worm on cotton.
- ③ Nano - DAP → to rice and vegetable cultivation.

Benefits
with
these

- ① Highly efficient → absorption by the crops.
- ② Conventional urea → 25%
Nano urea → 90-95% usage.
- ③ Environment friendly → sustainable agriculture.
- ④ preventing leaching of nutrients into soil and water

⑤ Curbing algal bloom and lake eutrophication

⑥ Healthy produce → export potential against sps procedures.

⑦ Improving farmers income with less diversion (eg: urea bags to Nepal)

- Risks
- ① Nano site → difficult to detect presence in food products.
 - ② leakage may lead to contamination of environment
 - ③ chances of changes in 'molecular structure of crops'
 - ④ lack of economies of scale → higher Costs

Hence, more research and innovations can bring in better application of Nano tech in Agriculture

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 is the
application of Quantum Technology
It operates on the "quantum physical"
properties

Ap.

- ④ R&D into more detailed use
- Synthesis of quantum dots.
- ① Revolutionise the application of quantum technology in multiple sectors.
- ③ Bringing in opportunities for sustainable technologies.
- ② Helps in sophisticated Communications.

Applications of Quantum dots

① Communications → Quantum

key distributions $\rightarrow$ more secure
and strong

- ② production of Quantum material
 $\hookrightarrow$ through 3-D sophistication
- ③ Application in Quantum Computing
- ④ Helps in building of Quantum
Speed of operations in Computing
- ⑤ Helps in studying about Complex
physical phenomenon like
relativity and superposition
- ⑥ Can be used in Sustainable
quantum material products.
 $\hookrightarrow$ avoids the unsustainable
technologies
- ⑦ Building of 'atomic clocks'

Concerns

- ① Complex methodology
with more research needed
- ② High costs and technology demands

India's
Quantum
path

- ① Quantum sup Computing mission
- ② National Quantum mission
- ③ Quantum AI → for wider applications.

Recent 6000 crore was
sanctioned for Quantum Mission
of India. This can help in bringing
more research into the field
ensuring benefit for man kind.

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 has 24.52% of forest cover catering to huge biodiversity and ecological sensitivity. protected areas like National parks, wild life sanctuaries ensure their wellbeing.

Role of protected areas in biodiversity Conservation :

- ① Balancing environmental protection with developmental needs.
- ② provide habitat to critically endangered animals (eg) :- Great Indian Bustard in Great Indian Desert National park
- ③ Ensuring ecological services of forests (eg) :- water cycling and sequestration

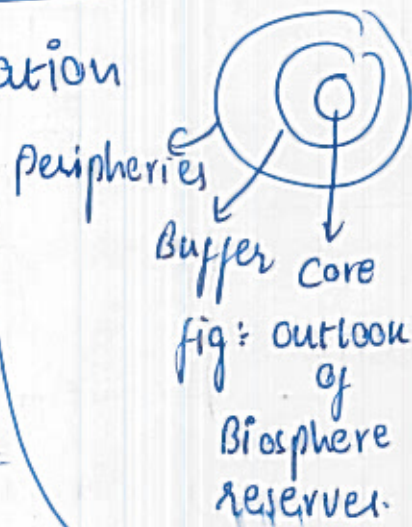
④ Balance the needs of tribal population

(eg): Kattunayakan in Mudumalai NP

⑤ Restrictions on human movement
↳ preserve the pristine habitats.

⑥ Research and development in Core areas to ensure Conservation

⑦ caters to Project Tiger, Project Elephant and other flag ship initiatives



Efficacy of NP, WLS and BR in India's biodiversity preservation:-

① strict rules and regulations based on zonation of forests.

(eg): Indian Forest Act restricts human interference

② Wild life protection Act, 1972 → measures against poaching in NPs and WLS

(eg): Tiger protection force in Bandargash National park.

③ Role in protection of tribal knowledge and ensuring welfare → "PM Janjatiya uttar gram Abhiyan"

④ usage of traditional practices in Biodiversity Conservation.

Concerns.

→ ① Diversion of forest land for non forest purposes

→ ② Disturbance of Animal migration Corridors.

↳ ③ Rising Human wildlife conflicts.

↳ ④ Non adherence to EIA rules in developmental activities.

(eg): Greater Nicobar project.

Way forward

→ ① LIFE to bring in attitudinal changes

↳ ② Renewable technologies to reduce interference.

The motto of "prakriti rakshati Rakshitah" should Guide our policies

18. भारत में पार्टिकुलेट मैटर (PM2.5 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 (PM2.5 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)

India has four out of five most polluted cities with Begusarai of Bihar emerging as the most polluted city of the world → Global pollution monitor

Causes of high levels of PM2.5 and PM10 :

- ① Burning of fossil fuel. → emission of soot from Industries.
- ② Vehicular emissions. → lack of catalytic Convertors in vehicles.
- ③ Stubble burning → of farm wastes
(Eq) : NCR Delhi region in winters.
- ④ Inefficient production processes
↳ MSMEs using Coal
- ⑤ Burning fire wood in homes for food cooking.

Causes of ozone pollution :

- ① Ground level Ozone → secondary pollutant due to reaction of nitrogen oxides in sunlight
$$\text{NO}_x \xrightarrow{\text{sun lights}} \text{Ozone} + \text{Aldehydes (smog)}$$
- ② majority due to vehicular pollution and SO_x emission from industries.
- ③ stratospheric ozone depletion → due to CFCs in Cooling industry.

Steps taken by government :

- ① National clean Air programme.
↳ To reduce $\text{PM}_{2.5, 10}$ to < 40% by 2026
- ② Commission on Air quality management → statutory body for NCR region.
- ③ Schemes : National solar mission,

Green hydrogen mission to ↓ fossil fuels

④ Ujjwala scheme → 9 crore household
gas connections

⑤ curbing stubble burning → Happy Seeder,
Biomass pellet generations etc...

⑥ vehicular pollution → E-vehicles.
Fame India 3.0 → 10k crore

- Concerns →
- ① low 'awareness' on
pollution to common citizens.
 - ② High Cost of renewable
technologies.
 - ③ E-vehicles → charging and
reliability issues.
 - ④ Ujjwala → haven't succeeded in
bringing behavioural change

Hence [SDG-13] calls for sustained
climate action as the opportunity
to act is now to reduce vagaries
of Climate Change.

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 सुझाए। (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)

India has emerged as a major transit as well as destination hub of drugs due to its location between Golden Crescent and Golden triangle

Various dimensions of Challenge:

① Security dimension

↳ ① Narco terrorism with Connect to 'extremists and terrorists'

↳ ② Hollowing out India's "demographic dividend" → liability on state

↳ ③ Threat of funding to left wing extremists



fig: Golden Crescent and Triangle

eg) : opium trade in eastern India

② Social dimension

↳ ① Brain washing drug addicts

eg) : overground workers in T2K.

↳ ② poverty and Diseases → Threatening economic security of India.

↳ ③ loss of social mobility → widens economic inequality.

③ political dimension → ① Threatens the Sovereignty of state → civil conflicts

② and secessionist tendencies

eg) : Khalistan demand in punjab.
emerged as drug hub

Multi-pronged approach to address

① Institutional : ① Narcotics Control Bureau

↳ ① EO and agencies to break the flow of funds.

- ② Developmental → ① Ensuring skin development and Jobs to youth
- ② Encouraging sports (eg): Kerala model
- ③ Schemes and policies
- ↳ Nasha Mukt Bharat Abhiyan,
 - ↳ Rehabilitation of drug users.
- ↓
- Treating as patients rather than criminals
- ④ International Coordination
- ↳ Interpol to track down drug lords
 - ↳ FATF, → RATS of SCB to curb the organised linkages

Above measure can help tackle the menace of drug abuse and strengthen India's strive to become "Visit Bharat" by 2047.

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)

Left wing extremism is extremist movement based on ideology of Mao to bring in a violent overthrow of elected government.

Root causes of Naxalism :

- ① Exploitation of tribals. → violation of forest rights and cultures.
 - ② lack of development → neglect of fringe communities
 - ③ Misgovernance → Bureaucratic apathy to local needs and Corruption.
 - ④ preserving Tal - Tangai - Jameen from encroachments and evacuation of tribes from their land.
- ☞ 40% displaced are tribes in India

Need for Integrating soft approaches
with hard measures. :-

① Need multipronged
strategy

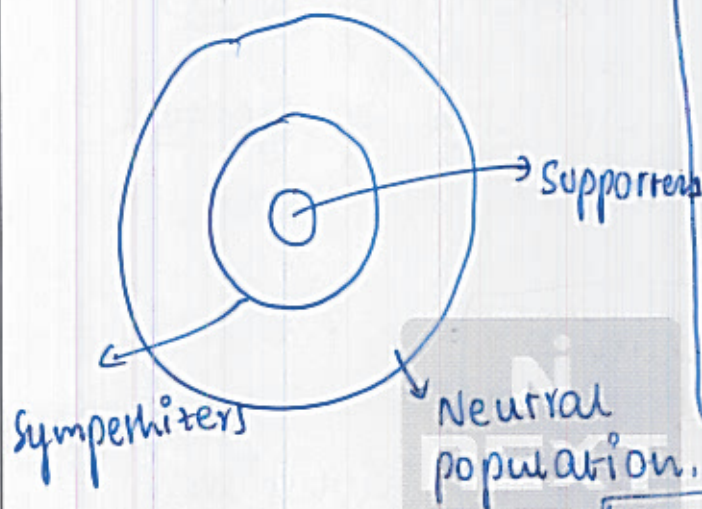


fig: LWE areas

→ ② Hard security measures to stop
the recruitment of cadres → by
threatening the supporters

→ ③ Sympathizers → should be
brought into confidence of government
by development

④ LWE road development projects.
mobile tower installations to

Ensure Connectivity.

⑤ Rehabilitation scheme → ₹1.5 lakh offer to surrendered Naxalites.

⑥ Neutral population → has to be protected from brain washing.

⑦ Employment opportunities → through MGNREGA etc, ROSHNI

⑧ Purvodaya scheme to develop the eastern backward regions.

⑨ 35 LWE districts in "Aspirational districts programme".

⑩ proper upholding of FRA ACT, 2006 along with schedule 5, 6

⑪ Development through → Eklavya
PM JANMAN

Government's SAMADHAAN

Strategy worked with significant reduction (<100) casualties in last year

NEXT IAS

Space for Rough Work

NEXT IAS

Space for Rough Work

NEXT IAS

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महत्वपूर्ण निर्देश	
अभ्यर्थियों को निम्नलिखित निर्देशों को ध्यानपूर्वक पढ़ना चाहिए। किसी भी निर्देश का उल्लंघन करने पर दण्डित किया जा सकता है।	
क्या न करें- 1. इस प्रश्न-सह-उत्तर पुस्तिका के भीतर कहीं भी अपना नाम या पंजीकरण संख्या न लिखें। 2. अपनी QCA पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तरों के अलावा कुछ भी न लिखें। 3. अपनी QCA पुस्तिका से कोई भी पृष्ठ न फाड़ें, यदि आपको कोई पृष्ठ गायब लगे, तो पर्यवेक्षक/निरीक्षक को सूचित करना न भूलें। 4. अपनी QCA पुस्तिका को अपनी टेबल पर न छोड़ें, परीक्षा समाप्त होने के पश्चात इसे निरीक्षक को सौंप देना चाहिए।	क्या करें- 1. कवर पृष्ठ पर दिए गए निर्देशों को ध्यान पूर्वक पढ़ें और उनका सख्ती से पालन करें। 2. QCA पुस्तिका के कवर पृष्ठ पर दिए गए स्थान पर अपना पंजीकरण नंबर और अन्य विवरण लिखें। 3. स्पष्ट और पठनीय तरीके से लिखें। खराब/अपठनीय लिखावट में न लिखें। 4. रफ नोट्स या गणना के लिए, इस पुस्तिका के अंतिम दो खाली पृष्ठों का उपयोग किया जाना चाहिए। रफ नोट्स को बाद में क्रॉस कर देना चाहिए। 5. यदि आप किसी कार्य को रद्द करना चाहते हैं, तो उस पर अपना पेन चलाएं या उस पर "रद्द" लिखें, अन्यथा उसका मूल्यांकन किया जा सकता है। 6. परीक्षा हॉल छोड़ने से पहले अपनी QCA पुस्तिका व्यक्तिगत रूप से निरीक्षक को सौंप दें।

ऑनलाइन सुविधा का लाभ उठाने वाले अभ्यर्थियों के लिए विशेष अनुरोध
1. QCA पुस्तिका को ठीक से स्कैन करें। हम चाहेंगे कि आप स्कैनिंग के लिए कैमस्कैनर ऐप (CAM SCANNER) का प्रयोग करें। (यह कोई प्रमोशन नहीं है)। 2. कृपया QCA पुस्तिका को पर्याप्त रोशनी में स्कैन करें। कम रोशनी में स्कैन की गई पुस्तिकाएं, उनके मूल्यांकन की गुणवत्ता को बाधित कर सकती हैं। 3. स्कैन के दौरान छाया वाले किसी भी पृष्ठ/पीडीएफ को फिर से स्कैन किया जाना चाहिए। कृपया सुनिश्चित करें कि आपके द्वारा अपलोड की गई पीडीएफ यथा संभव स्पष्ट हो । 4. QCA पुस्तिका का उपयोग नहीं करने वाले उम्मीदवारों को अपना विवरण पहले पृष्ठ पर देना चाहिए और मैक्रो टिप्पणियों के लिए अगला पृष्ठ खाली छोड़ दें। यह समझना चाहिए कि उत्तर स्कैन की गई पीडीएफ में पृष्ठ नंबर 3 से शुरू होना चाहिए। 5. QCA पुस्तिका का उपयोग नहीं करने वाले उम्मीदवारों को प्रश्नपत्र के अनुसार उत्तर के अनुक्रम का पालन करना चाहिए। 6. कृपया स्कैन किए गए संस्करण में उत्तर के अनुक्रम और कुल पृष्ठों की संख्या की जाँच करें। सुनिश्चित करें कि यह उसी के भौतिक संस्करण के अनुरूप है।

