Next IAS ID: MT23SLTPN042, GSMAC2403, 09-08-2024 10:15 PM

NEXT IAS

GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE : GSMAC2403

Name of Candidate: Rahul Shekhar Mobile N

Roll No. : ..... Start Time 6 PM End Time 9:30 PM

Date of Examination: ..... 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

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: .....

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Student Concerns / Query	Evaluator's Feedback / Response
1 Please suggest how to reduce time reqd. for attempt.	1
2	2
3	3

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

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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

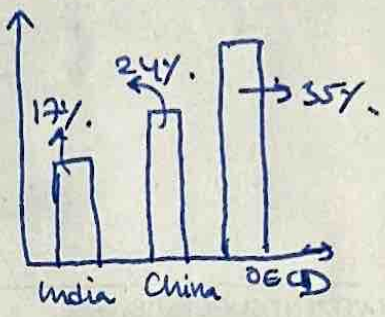
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1. भारत में उच्च राजकोषीय घाटे में योगदान देने वाले कारकों पर प्रकाश डालते हुए, ऐसे घाटे के संभावित परिणामों पर चर्चा कीजिए तथा राजकोषीय समेकन (Fiscal consolidation) सुनिश्चित करने के उपाय सुझाइए।(10 अंक, 150 शब्द)
Highlighting the factors contributing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

Fiscal deficit in India is nearly 5.8% of GDP in FY23-24 and is much beyond the 3% target as per FRBM.

factors

1) low tax to GDP ratio



2) Populist measures
- farm loan waivers, non-asset creating subsidies.

3) Inefficient taxation machinery
- leakages
- lots of exemptions.

4) Government thrust on capex through borrowing.
- Eg ₹11.1 trillion capex for FY 24-25.

5) Off budget borrowings.

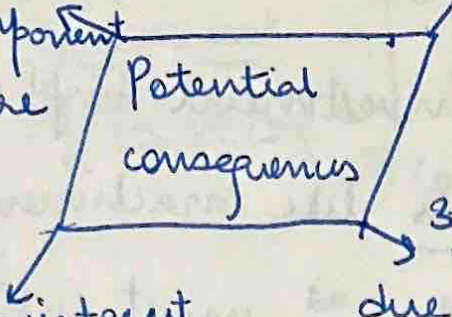
6) Inefficient PSEs

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1) ~~too~~ High interest burden

- Largest component of expenditure in budget



2) Burden on future generations.

3) Out-migration due to tax burden on narrow middle class.

4) High interest rates ↓ Crowding out effect.

Suggested measures –

1) Simplify tax structure

- Less slabs, minimal exemptions.

2) Focus on disinvestment and asset monetisation targets.

3) Widen tax base → Rich farmers.

4) Political consensus for NO FREEBIES.

5) Build strong financial sector to provide cheaper credit.

6) Curb off budget borrowings through a law.

Fiscal stability is the key pillar of sustainable growth at high pace.

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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)

Capital investment implies building long term assets like machinery, infra etc and being 2nd most infra deficit country, we need capital investment for development.

Potential of capital investment

1.) Reduce cost of doing business.
→ India's logistical cost at present is 13-14%.

2.) faster digital revolution through digital capital investment.

3.) Tackling urbanisation issues
• 50% population will be urban by 2050.

4.) Tackling climate change
• To achieve net zero we need US$1 trillion investment.

5.) Producing quality jobs
• Directly & indirectly.

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Challenges

1.) Lack of private sector Capital Investment.
↓
low trust and profitability.

2.) High cost of borrowing.

3.) Cost and time overruns
↓
Costs rise.

4.) Poor manufacturing capability
↓
Importing machinery.

Possible remedies –

1.) Viability gap funding to private sector for ~~non~~ less profitable projects.

2.) Project management tools like ERP in all organisations to check delays.

3.) Government must sustain its thrust on capex.

4.) Broaden ~~financial~~ capital and debt market to get easy access to credit.

Developed India will be based on the pillar of capital and capacity building.

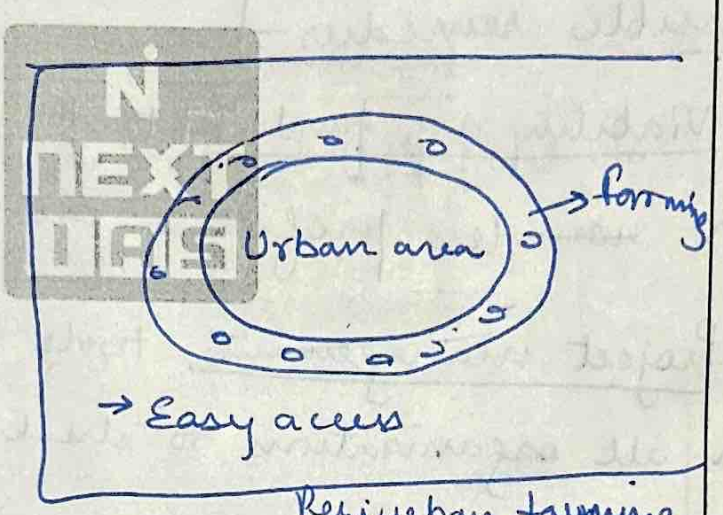
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3. "नगरीकरण में वृद्धि के साथ, पेरी-अर्बन/परिनगरीय कृषि (Peri-urban agriculture) ताजा कृषि उपज की आवश्यकताओं के लिए एक महत्वपूर्ण योगदानकर्ता के रूप में उभरी है"। इस संदर्भ में, सतत रूप से पेरी-अर्बन कृषि को बढ़ावा देने से सम्बंधित अवसरों और चुनौतियों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

Urban areas serve as large market for horticulture needs thus peri urban agriculture is thriving.



Opportunities –

1) Large market for farmers.
   - Easier supply chain.

2) Rise in income of farmers
   - Value intensive - horticulture and livestock cultivation in periurban areas.

3) Nutritional security for urban dwellers.

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4.) Crop diversification - moving away from rice and wheat monoculture

5.) Demand for organic farming.

Challenges

1.) Lack of credit and mechanisation. → Poor output

2.) Expanding urban areas → Reduced land for agriculture.

3.) Lack of market information to farmers.

4.) Extensive chemical usage for early ripening and profit maximisation

Way Forward

1.) Proper e-commerce for marketing and greater profits

2.) Ex Mechanisation to boost productivity

3.) Cooperatives like milk farmers to boost negotiability and market penetration.

Periurban agriculture is a win-win situation for farmers and urban dwellers and challenges must be duly addressed.

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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's 49% workforce is engaged in agriculture, yet we are one of the largest importers of pulses and largest importer of vegetable oil.

Challenges faced

1) Cereal monoculture
- Assured market due to open procurement policy.

2) Low productivity due to poor seeds and labour intensive nature.

3) Dilapidated post-harvest infra → Nearly 10% losses.

4) Low credit penetration in formal sector → disables risk taking.

5) Huge irrigation, power and fertiliser subsidies.
- Disincentivise sustainable practises → Legumes.

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Already in action

1) National Mission for ~~Oilseed~~ Edible oil – Oil Palm.

2) Disproportionate rise in MSP for pulses and oilseeds. vis-a-vis cereals.

Measures suggested

3) ~~Fo~~ National Mission for Sustainable Agriculture

4) Soil Health card scheme

5) ~~Most f~~

↓

further needed -

1) Widespread adoption of schemes like 'Mera Pani Meri Virasat' by Haryana government.

2) focus on R&D.
↓
Atleast 1% of GDP on R&D. (presently only 0.5%)

3) Subsidise sustainable methods like agroforestry, intercropping, mixed cropping.

Nutritional security will be boosted due to inclusion of more ~~pulses~~ non-cereals in our diet.

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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 and biofoundry refers to the utilisation of the biotechnical tools ~~to~~ at the industrial scale. Recent budget has emphasised on this sector.

Potential towards sustainable green economy

1) 4th generation biofuels
- Using GM algae.

2) Using biotechnologically altered microbes for remediation
- Oil spill
- Plastic pollution

} Degradation using GM microbes

3) Green energy
- Microbial fuel cells to convert waste to energy.

4) GM crops
- To reduce usage of chemical pesticides, fertilisers etc. → Carbon intensive sector.

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5.) ~~GH~~ Waste (municipal and domestic) ~~waste~~ handling.

Challenges-

1.) ~~to~~ Under developed technology in this field.

2.) Huge subsidies on fossil fuels
- Deter investment in other sectors.

3.) Possible side effects

4.) low budgetary allocation and higher cost of ~~investm~~ borrowing.

5.) Very costly setup.

Way Forward

1.) Focus on R&D.

2.) Global collaboration for technology development.

3.) Viability gap funding.

4.) Awareness for adoption

GRID → Green Resilient and Inclusive development is feasible through biomanufacturing and biofoundry.

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6. पुनः प्रयोज्य प्रक्षेपण यान (RLV) की कार्यप्रणाली के पीछे क्या सिद्धांत हैं? भारत के अंतरिक्ष वाणिज्य में आर.एल.वी. के उपयोग के महत्त्व 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)

RLV was used in Chandrayaan 3 and will be used in Gaganyaan Mission as well.

Principles behind RLV (LVM-3)

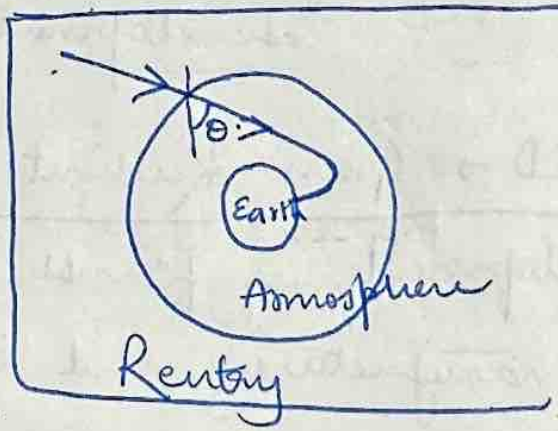
1) Re-entry technology
- Ability to detach and retract its path.

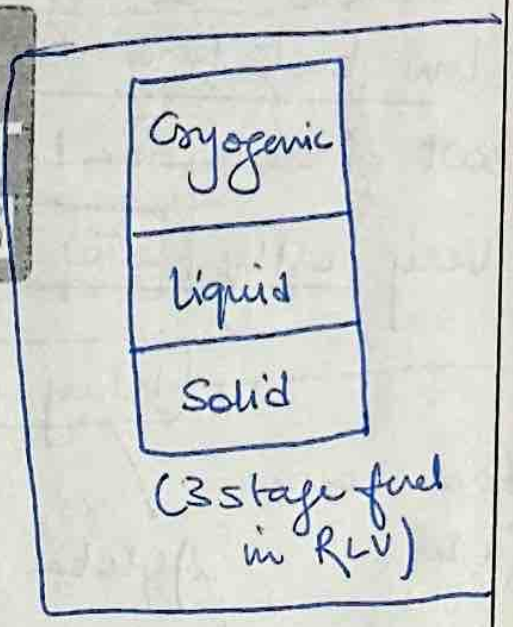
2) Proper reentry angle management (θ)

If angle is small → Vehicle will burn.

If (θ) is large → vehicle will escape.

→ Optimal θ is needed.





(3 stage fuel in RLV)

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3) Inflatable balloons
- Activated as the vehicle approaches back to the earth surface.

Significance and potential benefits-

1) ~~Reusat~~ Gaganyaan mission
- will use RLV to bring back astronauts from space (ISS).

2) Sample return missions
- Eg. proposed Chandrayaan-4.

3) Space mining - Proposed future tech. will use RLV.

4) International collaborations
- More say in Artemis accord.
- 'Tech' as a tool for geopolitics.

5) Development of startups in space sector
Eg. Agnikul, Team Indus etc.

6) The success of missions like Bharat Antrix Station depends on RLV heavily.

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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 2023 focusses on trading carbon emmissions certificates to mitigate green house gas productions, as under Kyoto Protocol.

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Positives of CCTS, 2023 -

1.) Establishes streamlined legislation for carbon trading in India.

2) Perform, Achieve and Trade
- Incentivises carbon reduction

3.) Incorporates carbon planning as a part of business planning.

4.) ~~Hitt~~ Aligned with global best practises.

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Challenges with CCTS, 2023 –

1) ~~Ab~~ Merely greenwashing
   - Transferring source of production of carbon is changed.
2) Possible double-counting of emission reduction.
3) Left emission reduction on market will.
4) May overburden businesses in the developing economy.

Way forward –

1) focus on green tech adoption. eg. green steel.
2) Check multiple counting through blockchain technology.
3) Incentivise green energy adoption through viability gap funding.

CCTS, 2023 is a positive step towards achieving SDG-13.

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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)

India has witnessed severe heatwaves in 2023 and 2024 with 2023 being the hottest recorded year.

Conditions for heatwave

1) Departure from mean temperature
   a) by 4.5°C → Heatwave
   b) by 6.4°C → Severe heatwave

2) Absolute temperature
   a) More than 40°C → Heat wave
   b) More than 45°C → Severe heat wave.

Should be included as notified disaster for the following reasons –

1) Silent Killer
   - Killed more than ~~1 million~~ 20000 people in last decade, as per Ministry of Health

2) Increased frequency

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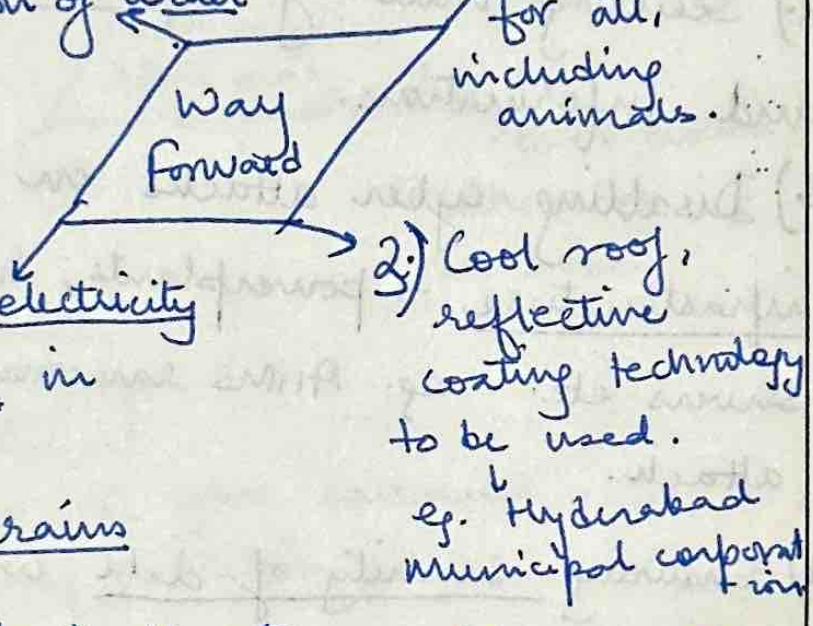
- Due to concretisation and asphatisation.

3.) Unnotified status warrants less seriousness.

- Only reactive measures like lockdowns are taken.

4.) Checks economic productivity
- Loss of work hours and efficiency.

5.) Threatens vulnerable people the most.
- Homeless, street vendors, women worst affected.



1.) Afforestation and rejuvenation of water bodies.

2.) Build shelters and drinking water facility for all, including animals.

3.) Cool roof, reflective coating technology to be used.
↳ eg. Hyderabad Municipal corporation

4.) Enhance electricity Consistency in Summers

5.) Artificial rains

The silent disaster needs greater attention and proactive measures in the times of climate change.

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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)

Cyber warfare has risen in recent times owing to enhancement of technology, thus the joint doctrine for cyberspace operations aims to tackle it.

Tackling conventional operations-

1.) Enhancing intelligence capability

2.) Securing military cyber installations and informations.

3.) Disabling cyber attacks on critical infrastructure - powerplants, hospital servers etc. eg. AIIMS ransomware attack.

4.) Ensuring security of data within the country.

Eg- checking VISA attacks unlike before.

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Tackling grey zone ~~to~~ warfare –

1.) Checking interference in elections
Eg Cambridge Analytica.

2) Reducing cyber costs of businesses
- Presently loss of US$ 6.4 billion annually to Indian businesses due to cyber attacks.

3.) Privacy of citizens
- Eg Pegasus attack.

(Lack of coordination) ⇒ Multiplicity of cyber crime handling agencies.
Eg NCIIPC, State police, CERT-In.

Challenges that may still persist

- Lack of capacity of personnel in this domain.
- Ever evolving nature of cyber-crime

Way forward –

1- Unification of cyber command.
2- Capacity upgradation.
3- Cybersecurity as a part of each organisation.
4- Cyberhygiene in people.

The steps like Digital Personal Data Protection Act are welcome steps.

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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)

Candidates write on this

BSF is primarily responsible as the 1st line of defense along Indo-Pak border in Kashmir, ~~and~~ Punjab and Rajasthan.

Range - 50 km. from border.

Necessity -

1) Increasing drug peddling along Pak border and ~~*~~ smuggling along Bangladesh border.

2) Uniformity - In Gujarat, Assam and elsewhere, the range for BSF is at 50 km. from border.

3) Emerging threats
   - Eg. drones.

4) Unison in border command
   - BSF is more equipped than state police for the purposes

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Potential issues –

1) federal issue
   - States dissented against ~~dep~~ enhancing range of BSF.

2) Divergence of staff from other regions.
   - May threaten security elsewhere

3) Lack of ~~e~~ income opportunities for locals
   - They farm ~~upto~~ until border.
   - This will be checked.

NEXT IAS

1) Build political consensus and co-ordination among Centre-state agencies.

Way forward

2) Equip BSF with emerging technology to tackle new threats.

3) ~~Etc~~ Support the income losses of the locals through alternate opportunities.

New tools like CIBMS (Comprehensive and Integrated Border Management System), flood lighting, radar ~~etc~~ usage etc should be done along all borders.

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Candidates write on th

11. भारत की आर्थिक विकास की कहानी प्राय: 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)

Job elasticity in India at present is nearly 0.15 which was in excess in 1991 of 0.45 as per Oxfam India report, whereas economy has grown by more than 20 times in this period, suggesting jobless growth in India.

Structural unemployment

Causes

1.) Poor infrastructure development
- India → 2nd most infra deficit country after Brazil

2.) Poor laws and bureaucratic hurdles
- Land acquisition, delays, environmental clearances.
- Red tapism and corruption.

3.) Skill-industry mismatch
- Only 52% graduates meet industry needs

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as per Skill India Report, 2023.

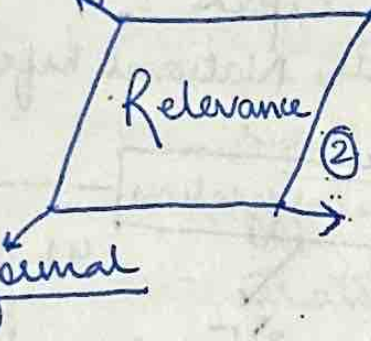
4.) Credit issues

- Lack of formal credit for MSMEs, agriculture.
- Lack of investment in blueclip companies.

5.) Technological backwardness

- Lagging manufacturing competitiveness
- Slow growing agriculture sector.

4.) Low export share and lack of actualisation of potential GDP growth.



① Disguised unemployment
- 49% labour force in agriculture generates only 16% GVA.

② Lack of quality jobs and underemployment

③ Huge informal sector
- Gig economy is rising
- Lack of social and legal protection

5.) Lack of inclusive growth

- Low female labour force participation as per PLFS - 2023 - 29.4%.

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Already taken

Policy measures

1) Structural reforms
   a) Labour law reforms - 4 codes
   b) Digitisation of economy
   c) ~~Director~~ Reduced corporate tax and simplification of indirect tax → GST.
2) focus on skill development
   - PM KVY 4.0
   - National Rural livelihood Mission - focus on women.
3) future oriented infra development
   - High speed rails
   - ₹11 trillion capex
   - Gatishakti, National infra pipeline etc.

Further suggestions

1) Modernising governance → Bureaucratic reforms
2) ~~Top down~~ Bottom up planning
3) Focus on next gen tech (Quantum, AI)
4) Improve public health and education

Applying these measures will help us achieve the ~~SH~~ constitutional features of democratic socialism.

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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 डैडे 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 contribute nearly 30% to the GVA and are pillars of labour intensive inclusive growth.

MSMEs
- Micro
  - Turnover less than ₹5 cr
- Small
  - less than ₹50 crore
- Medium
  - less than ₹250 crore turnover.

Role of MSMEs in regional growth

1) Employment
- low, medium and high skilled workforce subsumed.

2) Concentration in towns and villages
- Check migration

3) Economic development
- 25% of tertiary sector GVA and nearly 7% of manufacturing GVA.

4) Export potential
- Nearly 37% of India's exports

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5.) Inclusive in nature

- Women participation, ~~economic~~ lower-middle class participation is higher.

Issues with MSME

1.) Credit issues.

2.) low technology adoption.

3.) low marketing potential.

4.) lack of competitiveness.

Way forward

1.) Extended credit line guarantee scheme.

2.) PMFME → for MSMEs in food processing sector.

3.) Interest subvention scheme.

4.) ONDC - marketing.

Contributions

I.) **Industrial diversification –**

1.) Catu to ~~boos~~ low end technology industries.

- Eg. bolt manufacturing, footwear, apparel etc

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2.) ~~Enter into~~ Exploit export potential
- FTAs being signed.

3.) ~~Not~~ Consume the labour force
- Employment oriented.
- Eg. Food processing industries.

II.) Technological ~~employment~~ advancement

1.) Enter into global value chains.

2.) Focus on emerging sectors - Eg. Space sector startups.

3.) Adopt global best practises
- Eg. lean management

MSMEs can help India to achieve the goal of 'Viksit Bharat' by 2047.

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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 ~~was~~ in India is declared before every sowing season (Kharif and Rabi) on 24 crops to provide security to farmers.

MSP legalisation can protect farmers from price shocks in the following ways -

1) Guaranteed income
   - Pre sowing declaration.
2) Unaffected by global price shocks.
   - Events like Russia Ukraine war affect agricultural prices.
3) ↑ Rural upliftment of poverty
4) Check exploitation of farmers

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by middlemen.

5.) May help in driving farmers towards crop diversification.

- More MSP on non-cereal crops.

Challenges with legalisation of MSP

1.) Disincentivising productivity

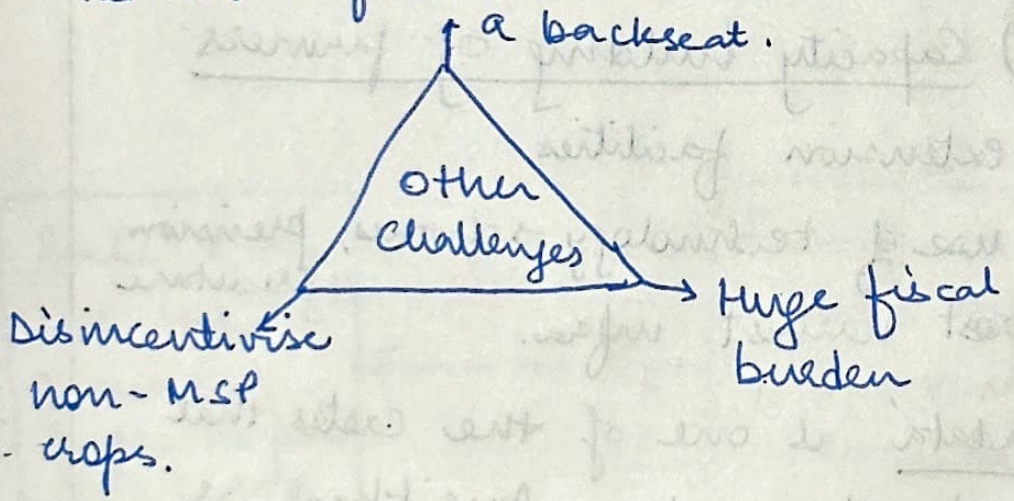
- Lack of investment by farmers to enhance productivity.

2.) Lack of focus on quality of produce.

- Equal MSP for all varieties and quality of crop.

3.) ~~Huge~~ Lack of storage capability with the government.

Post-harvest infrastructure takes a backseat.



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Other desirable measures

1.) Price deficiency payments
- Government to pay the price gap between MSP and market price.
- DBT

2.) Contract farming
- Boosts investment.
- Security before sowing.

3.) Crop insurance
- PM Fasal Bima Yojana
- Protection against weather and pest issues.

4.) Reducing middlemen nexus
- Farmers receive only 25% of what consumers pay.
- e-commerce in agriculture - needed

5.) Capacity building of farmers
- extension facilities
- use of technology - drones, precision agriculture
- post harvest infra.

'Annadata' is one of the castes that need to be focussed in Amritkaal as per PM.

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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।

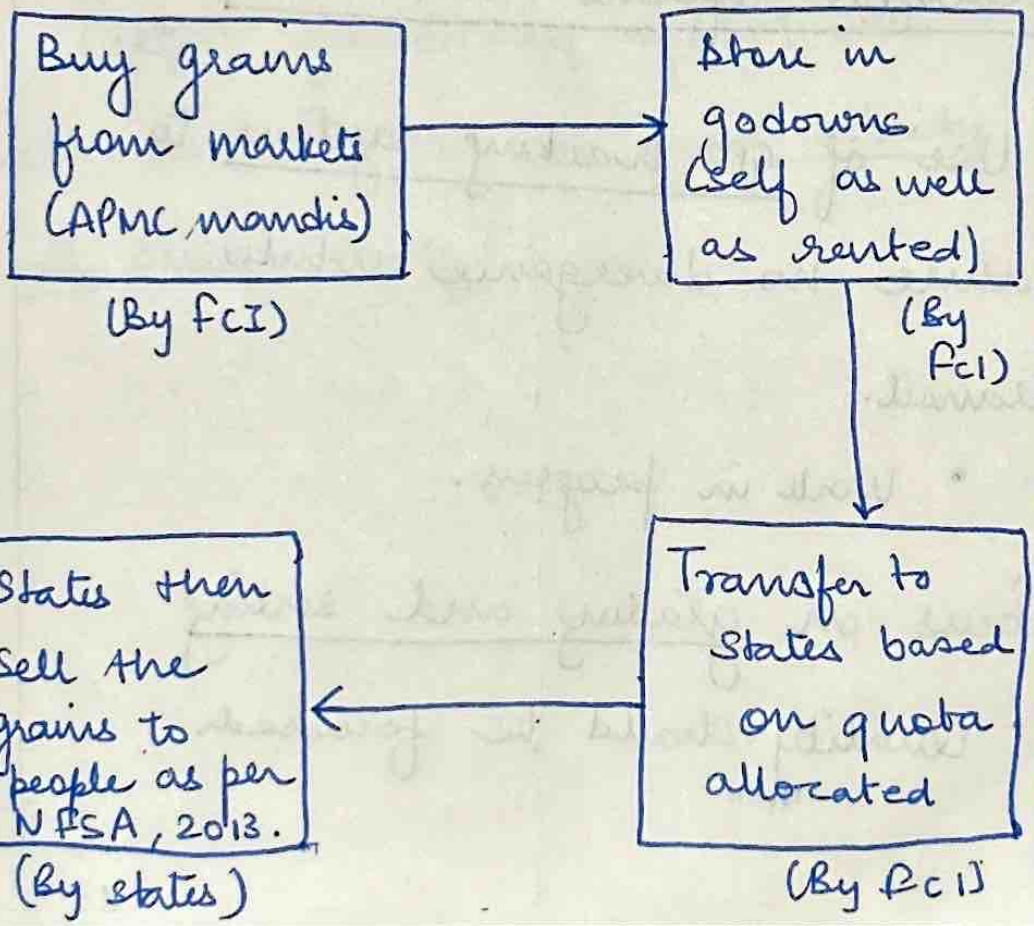
(15 अंक, 250 शब्द)

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.

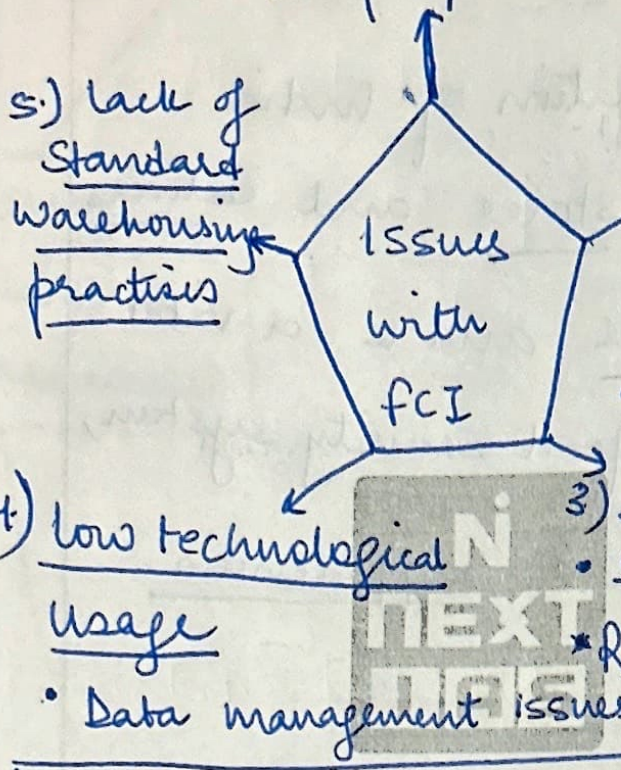
(15 marks, 250 words)

Food corporation of India ~~it~~ procures, ~~and~~ stores and delivers the food grains and is a vital link in India's food security system, but is marred with inefficiencies.

Role of FCI-



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1) Transfer related inefficiencies while transporting.
- Leakages ~~by rats~~
- No proper accounting

2) Storage losses
- Nearly 25 MMT per annum.
- ~~No~~ Reduce shelf life.

3) Corruption
- Selling outside
- Record tampering

4) Low technological usage
- Data management issues.

5) Lack of Standard warehousing practices

Desirable reforms in FCI –

1) Use of GPS tracking systems to ensure no divergence while transit.
- Work in progress.

2) Focus on grading and sorting
- Quality should be focussed.

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3.) Standard practises like Warehouse Management Systems (WMS) should be implemented.

4.) Blockchain integration

- Immutable sale and purchase data.

5.) Storage efficiency enhancement

- Cold chains
- Proper disinfectant usage etc.

Proper functioning of FCI will help us reduce our food subsidy bill substantially.

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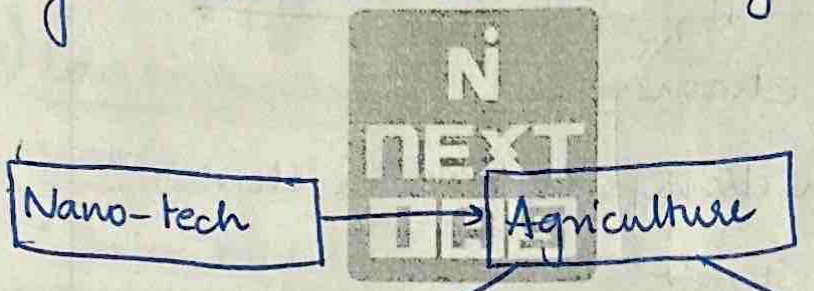
15. भारत में कृषि उत्पादकता और खाद्य सुरक्षा बढ़ाने में नैनो प्रौद्योगिकी की भूमिका पर चर्चा कीजिए। नैनो-उर्वरकों और नैनो-कीटनाशकों के उपयोग के हाल के विकास/प्रगति और संभावित लाभों एवं जोखिमों पर प्रकाश डालिए।

(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 ~~possesses~~ is powered by ~~ex~~ super thermal, chemical mechanical and electrical properties of a material in nano range (0-100 nm)



Productivity

~~Reduced~~

1.) More absorption efficiency.
- eg. nano-urea.

2.) Disease monitoring at micro scale.

3.) Enhance soil aeration.

→ Precision agriculture

food security

1.) Increase food availability

2.) Reduce chemical fertiliser usage.

3.) Key tool in adapting to climate change for agriculture

4.) Nano-coatings for food storage

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Recent developments

1.) FICCI developed nano-urea.

- Approved for usage.
- 500 g. of nano urea = 50 kg. bag. of urea.
- Absorption efficiency = 80%.

vis-a-vis normal urea → 30-40%.

2.) Nano-pesticide developed.

- Check pest development at ~~very small level~~ → cellular level.

3.) Use of nano-sensors for moisture detection.

4.) Nano-coverings increase shelf life significantly.

Potential benefits –

1.) For farmers

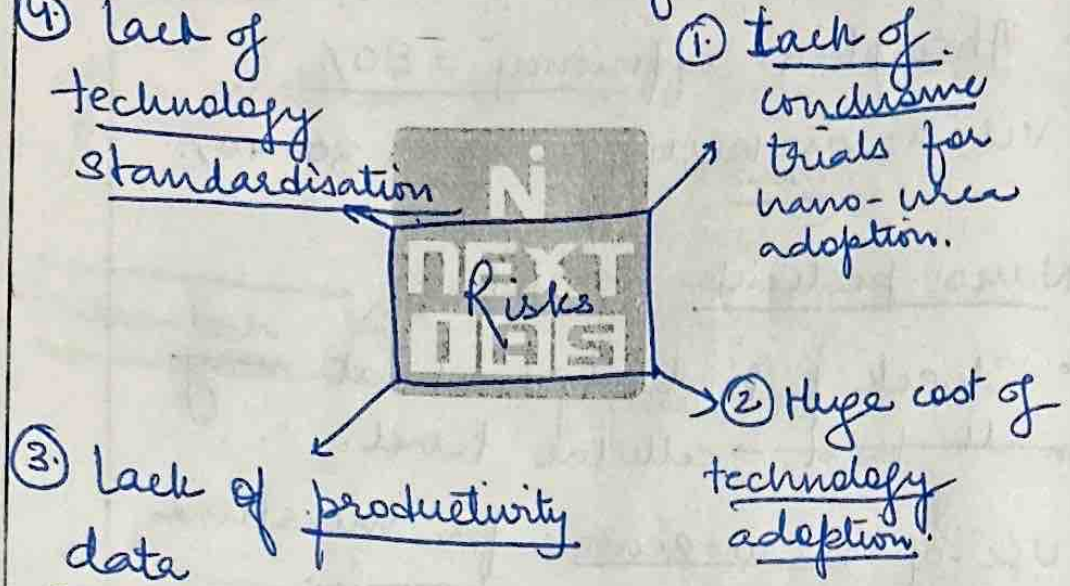
- Increase income.
- Productivity rise.

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2) For environment
- lesser usage of chemicals.

3) For people → • Nutritional enhancement.
• Chemical free food.

4) For scientists → R&D opportunity.
↳ Enhance India's leadership in this field.



Way forward –

1) Focus on R&D → Agri. R&D only 0.5% of GDP

2) Viability gap funding by government

3) Proper regulatory bodies to verify adoption.

Nanotech in agriculture can help achieve Doubling farmers' income committee's objectives of

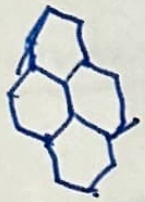
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16. 2023 का भौतिकी का नोबेल पुरस्कार क्वांटम डॉट्स के संश्लेषण की खोज के लिए एकिमोव, रुस और बावेंडी को संयुक्त रूप से दिया गया। इस संदर्भ में क्वांटम डॉट्स के अनुप्रयोगों पर चर्चा कीजिए। (15 अंक, 250 शब्द)

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 form the base of semi-conductor (SC) ~~tt~~ application at nano-level, which has potential to revolutionise electronics industry.



(Quantum dots)

Quantum mechanical model

Superior electrical and optical properties ~~(nearly~~

Synthesis

- Top-down approach
  - Reduce materials to nano-size
  - Slicing etc.
- Bottom up approach
  - Combine atoms to nano scale
  - Vapour deposition

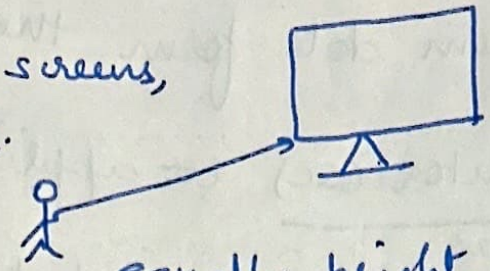
Noble prize for physics 2023.

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Applications of quantum dots -

1.) O° vision screens

- Eg. QLED TV screens, laptops etc.



equally bright and clear screen.

2.) Reduced ~~elect~~ energy demands

- Less excitation potential needed.
- Hence energy efficient.

3.) Quantum communication prospects

- Highly secure ⇒ Quantum key
- Highly fast
- ~~&~~ Eg⇒ deep space communication.

4.) Quantum computing potential

- High computational power.
- Under R&D;
- Will bring supercomputer to laptop size.

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5) Quantum clocks

- Most precise ever.
- Universal & space tech time standard.

6) Applications in general spheres:

a) Healthcare → Quantum computing coupled with nano tech can enable cellular level surgeries.

b) Advancements in quality jobs and economic benefits.

India's National Quantum Mission can enable us to be a leader in the field and global collaborations with frontrunners ~~leaders~~ in this field like Japan, are needed:

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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)

Protected areas include national parks, wildlife sanctuaries, conservation reserves, tiger reserves and are about more 1030 in number in India.

Role of protected areas

1.) Check human activities in these areas.

2.) Maintain bio-centric approach.
- Protection of whole of environment approach.

3.) Conservation and rejuvenation of keystone species.
- Eg. tiger, lion, one-horned rhino etc.

4.) Align with global protocols
- Eg. UNCBD, UNESCO's Man and Biosphere programme etc.

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5.) Reduce man-animal conflicts.

Significance / Positives of protected areas

1.) Increased species number.

- Eg. tiger population increased from 1400 (nearly) to 3100 (nearly) in 50 years of the program.

2.) Protection of pristine forests.

Nearly 5.32% of area is under protected area in India.

3.) ↑ Increase in forest cover over the last 2 decades.

4.) Tackling challenges of biodiversity loss by increasing protection and protected areas.

5.) People's involvement → Conservation and community reserves.

Persisting issues –

1.) Increased man-animal conflicts

- As per WCCB, the conflicts have risen by 4 times in last 15 years.

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2.) Illegal poaching persists
- Around 230 reported cases in 220 as per WCCB.

3.) Reducing quality of forests due to developmental projects.
Eg mining in Dehing Patkai National park

4) Lack of focus on wildfires.
- loss of biodiversity
- Maharashtra, Odisha, Andhra → most vulnerable

~~5)~~ less evolved participation of locals.

Other threats
- Data about invasive alien species is lacking
- Conflict with Forest Rights Act, 2006.

Way forward

1.) GIS, GPS etc. to monitor illicit activities

2.) ~~Abs~~ Involve stakeholders → tribals, civil societies

3.) Build ecological corridors to connect protected areas.

To achieve principles under SDG-14 and SDG-15; ~~the~~ these protected areas play a vital role.

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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)

Air pop pollution accounts for more than a million deaths in India annually and catalyses poor health in ~~several~~ much more cases.

Causes of high PM and ozone pollution

1) Urbanisation issues
- High traffic density.
- low use of public vehicles.

2) Industrial factors
- low compliance to laid standards.
- Substandard machinery.

3) Agricultural issue
- Stubble burning

4) Energy sector
- Heavily relied on fossil fuels → 56% directly.

5) low forest cover

6) Geographical factor
- Air subsidence (low pressure) in winters in N-W India.

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7.) Legal and governance issues

- Ambiguous legislations
- Reactive rather than proactive approach → eg. lockdown in Delhi in peak pollution

Effectiveness of government steps

→ Positives

1.) Focus on technology
- Eg. Smog towers in Delhi, BSVI norms.

2.) Push for renewable energy
- Eg. Panchamrit goals will reduce PM pollution as well.

3.) Focus on stakeholder approach
- Eg. waste to energy (GOBARDHAN) for farmers → tackle stubble burning.

4.) ~~Envio~~ Pollution as a paradigm in policy making.
- Eg. NCAP calls for 20-30% reduction in air pollution in target cities.

→ Negatives →

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1.) Minimal effect visible

- Nearly 80% pollution lives in ~~Severe~~ non-optimal air zones, as per WHO.

2.) Cross-subsidising coal and open coal policy. → Non-resonance in policy making.

3.) Spread in newer areas

- Western India like Maharashtra also faced the issue in 2023 winters.

4.) Lack of citizen awareness and sensitivity about the issue.

5.) Lack of political discourse and will.

Way forward

1.) Quantify losses due to air pollution (PM and ozone specially)

2.) Target oriented tackling on war footing.

3.) Collaboration among states rather than blame game.

4.) Adopt global best practises.

Right to clean environment, a fundamental right of all shall be ensured through given measures.

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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 abuse is reported to cause nearly 1.5% of GDP loss to India and is rising ~~due~~ among youth as also enumerated by INCB report.

Causes of rising drug abuse

1.) Geographical reason
- Proximity to golden triangle and crescent.

2) Strategic reason
- Porous borders
- Particularly Myanmar.

3) Maritime factors
- Gujarat route being exploited by traffickers.

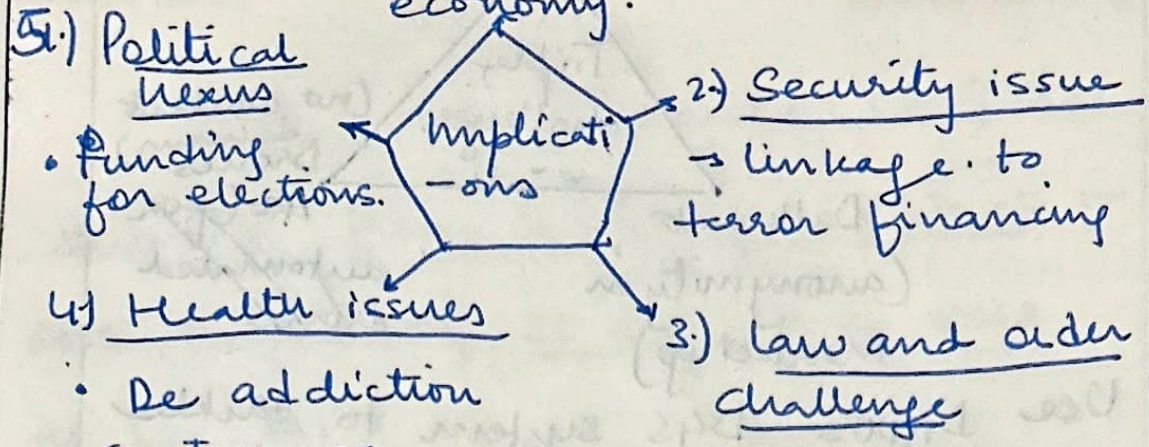
4) Presence of organised crime groups: → facilitate easy accessibility.

5) Non-cohesion among security forces.

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6.) Rise of dark web



Suggestions -

1.) Security aspect

• Cohesion of multiple forces like NCB, State police, CBI etc. is needed.

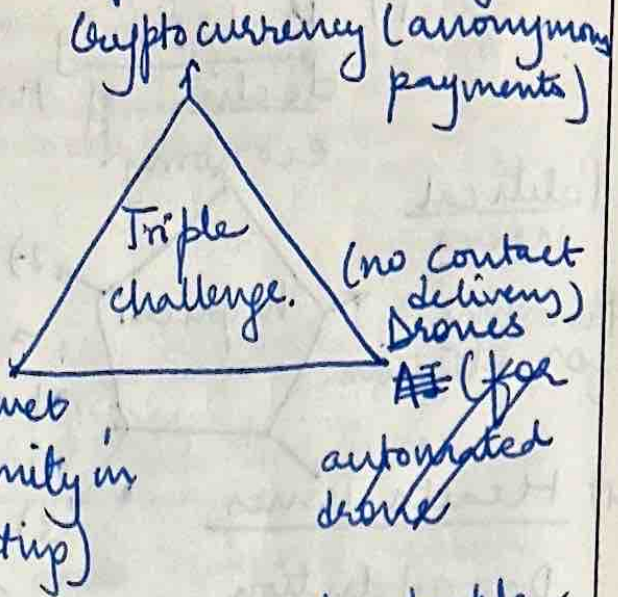
2.) Border management

• ~~DFS~~ Ensuring no leakages across border.

• Use of radar, GIS etc. technology.

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3.) Tackle the triple technology curse.



- Use DRDO's D4S system to tackle drones.

4.) Health intervention

- De addiction centres
- Proper rehabilitation.

5.) Societal aspect

- Opportunity for mainstreaming after deaddiction.

6) Awareness and education

- Build right role models.

Provide

The future of a developed India needs to be kept away from drug menace to reap demographic dividend.

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20. वामपंथी उग्रवाद के प्रति भारत की प्रतिक्रिया (कार्रवाई) में नक्सलवाद के मूल कारणों को दूर करने के लिए कठोर सुरक्षा उपायों के साथ-साथ सामाजिक-आर्थिक नीतियों और संवाद जैसे नरम दृष्टिकोणों/उपागमों (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 (LWE) has shrinked from about 200 districts in 2005 to nearly 35 districts in 2023 as per MHA.

India's existent response mechanism

Socio-economic / Soft policies approach

1) Faster Development
- Eg. Aspirational Districts program.

2) Proper surrender and rehabilitation schemes.
- More than 6000 cadres surrendered in last 5 years.

3) Tackling youth
- Job opportunities and education

4) Inclusive policies → eg. PESA, Forest Rights Act

5) Stakeholder approach → eg. amendment in MMDR Act, 2022.

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Hard measures

1.) Forming specialist forces
- Eg. Grey Hounds in Andhra

2.) Tackling funding
- NIA booked nearly 200 accounts linked to Naxal funding.

3.) Actions on NGOs and sympathisers, supporting LWE activities.

4.) Weeding out opium production and weaponry supply to LWE cadres.

5.) Use of technology → Night vision goggles, GPS tech etc. to find and eliminate.

6.) Central coordination among forces through CRPF (MHA).

Issues still persisting

1.) Ambush attacks
Eg. Sukma

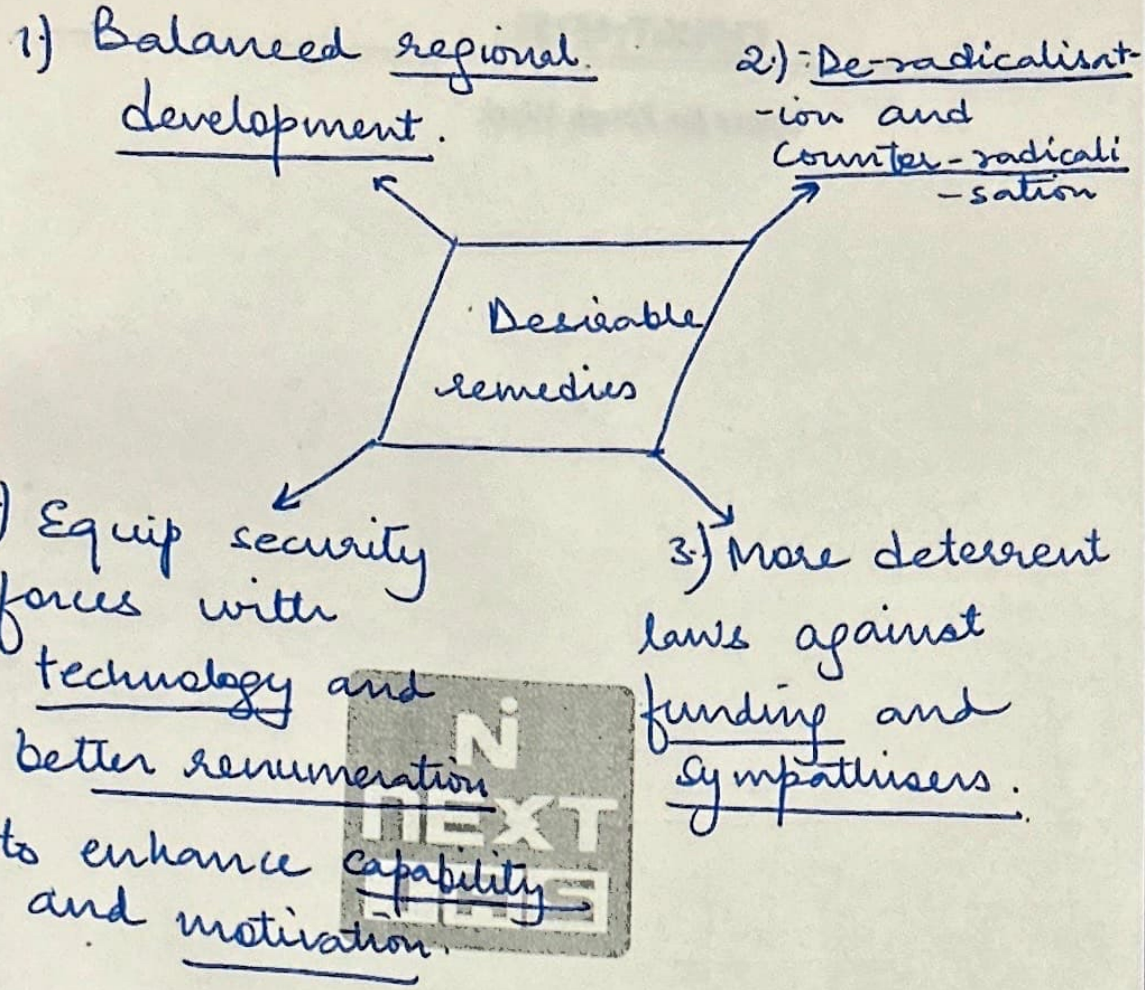
2.) Socio-economic variability is rising in India

3.) Translocatory nature of cadres
↓
Reports suggest shifting to Kerala, TN etc.

4.) Political nexus
- Using them for vote banks.

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The sustained success must not breed complacency in actions ~~as~~ until we are free of the LWE.