

NEXT IAS

GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE : GSMAC2403

Test No. : 03

Name of Candidate: Komal Punja Mobile No.Roll No. : NLS202467091 Start Time End Time.....Date of Examination: 25/08/2023 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 लिखें गए किसी भी उत्तर को क्रेडिट नहीं दिया जाएगा।
6. कृपया साफ-सुथरा लिखें। अस्पष्ट लेखन से बचें।
7. QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।





REMARKS:

FOR OFFICE USE ONLY

Student Concerns / Query	Evaluator's Feedback / Remarks
1 _____ _____	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	
 <p style="margin-top: 10px;">Topper's Copy</p>	 <p style="margin-top: 10px;">Common mistake and Correct Filled QCAB</p>
 <p style="margin-top: 10px;">Copy Scanner App</p>	 <p style="margin-top: 10px;">Next IAS Test Centre Location</p>

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 CANDIDATEAREAS OF IMPROVEMENTIMPROVEMENT SUGGESTIONS

1.

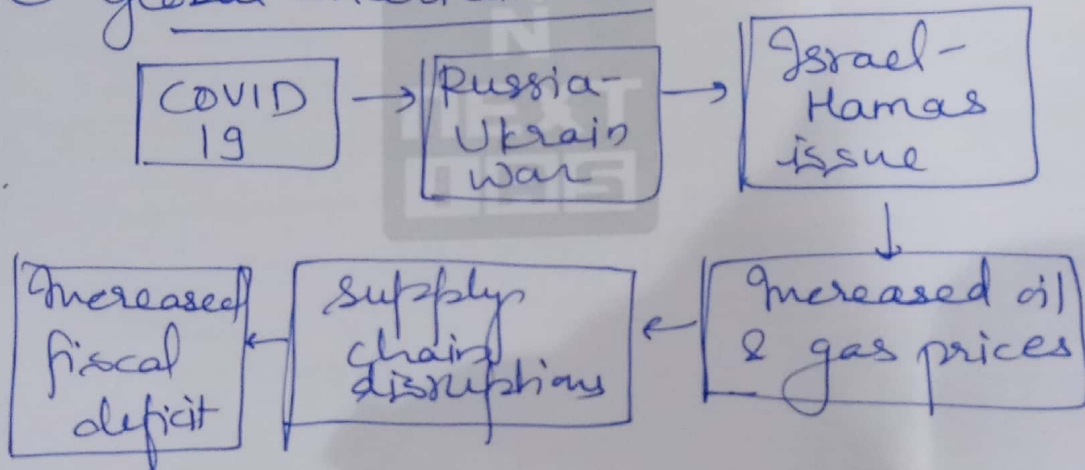
भारत में उच्च राजकोषीय घाटे में योगदान देने वाले कारकों पर प्रकाश डालते हुए, ऐसे घाटे के संभावित परिणामों पर चर्चा कीजिए तथा राजकोषीय समेकन (Fiscal consolidation) सुनिश्चित करने के उपाय सुझाइए। (10 अंक, 150 शब्द)

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's fiscal deficit currently stands at 5.1 % of GDP far above 3% target (FRBM).

Factors responsible

① Global uncertainties -



② Developmental & non-developmental expenditure
 ↳ capex, infrastructure creation
 ↳ subsidies, ADS etc.

③ High logistic cost (14% of GDP) far above world average.

④ low exports (< 3% of world) & import dependency.

Potential consequences of high FD

- ① Crowding out of private sector
- ② lack of capex due to high FD.
- ③ Development & asset creation compromised.
- ④ Twin deficit problems - High FD & High Current Account Deficit
- ⑤ Increased government borrowing & degraded Sovereign Credit ratings.

Measures to improve FD

- ① Supporting manufacturing sector and increasing exports (2 million target - foreign trade policy 2023)
- ② MSME led growth (45% exports & 30% GDP contribution)
- ③ Diversification of supply chains & reduced import dependency (Atmanirbhar Bharat)

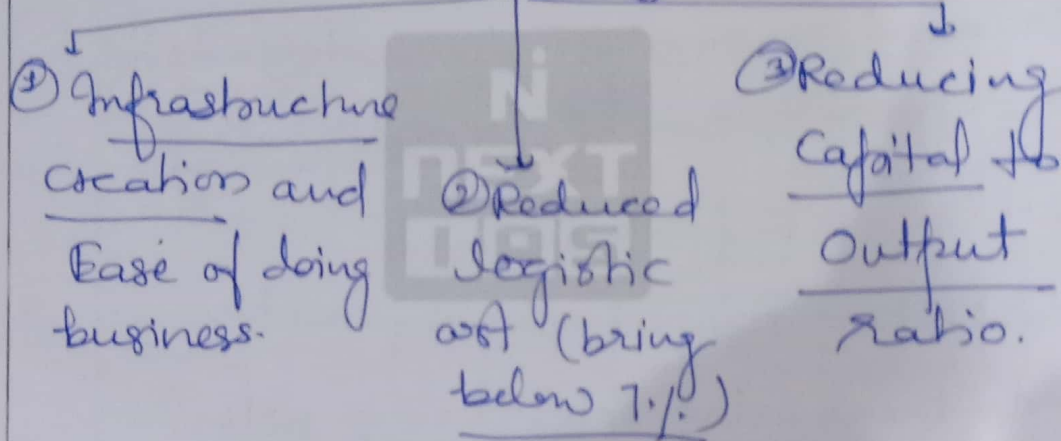
Curbing fiscal deficit within limit is pre-condition of goal of 30 trillion economy by 2047 (Amrit Kaal).

2. 2047 तक भारत को विकसित राष्ट्र बनने की आकांक्षा महत्वपूर्ण पूंजीगत निवेश पर निर्भर है। इसके अलावा, इस लक्ष्य को प्राप्त करने में पूंजीगत निवेश की संभावनाओं पर चर्चा की जाए। इस संदर्भ में भारत के समाप्त क्या चुनौतियाँ हैं? (10 अंक, 150 शब्द)

India's aspiration to be a developed nation by 2047 hinges on significant capital investment. In light of this, discuss the potential of capital investment in achieving this vision. What are the challenges India faces in this regard? (10 marks, 150 words)

India's aspiration to be a 20 trillion economy by 2047 hinges significantly on capital investment.

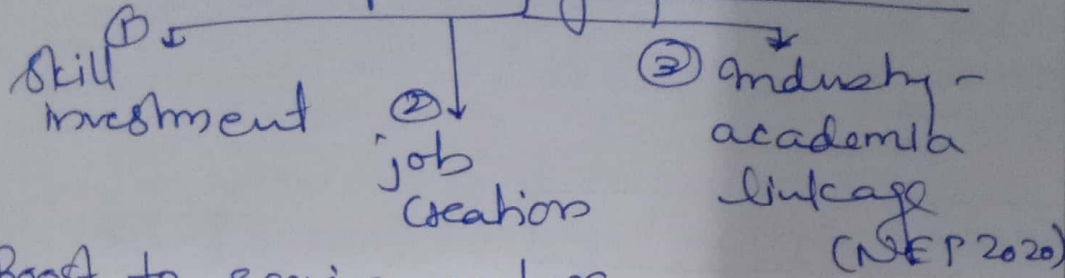
Capital investment:- growth multiplier



Potential of Capital investment

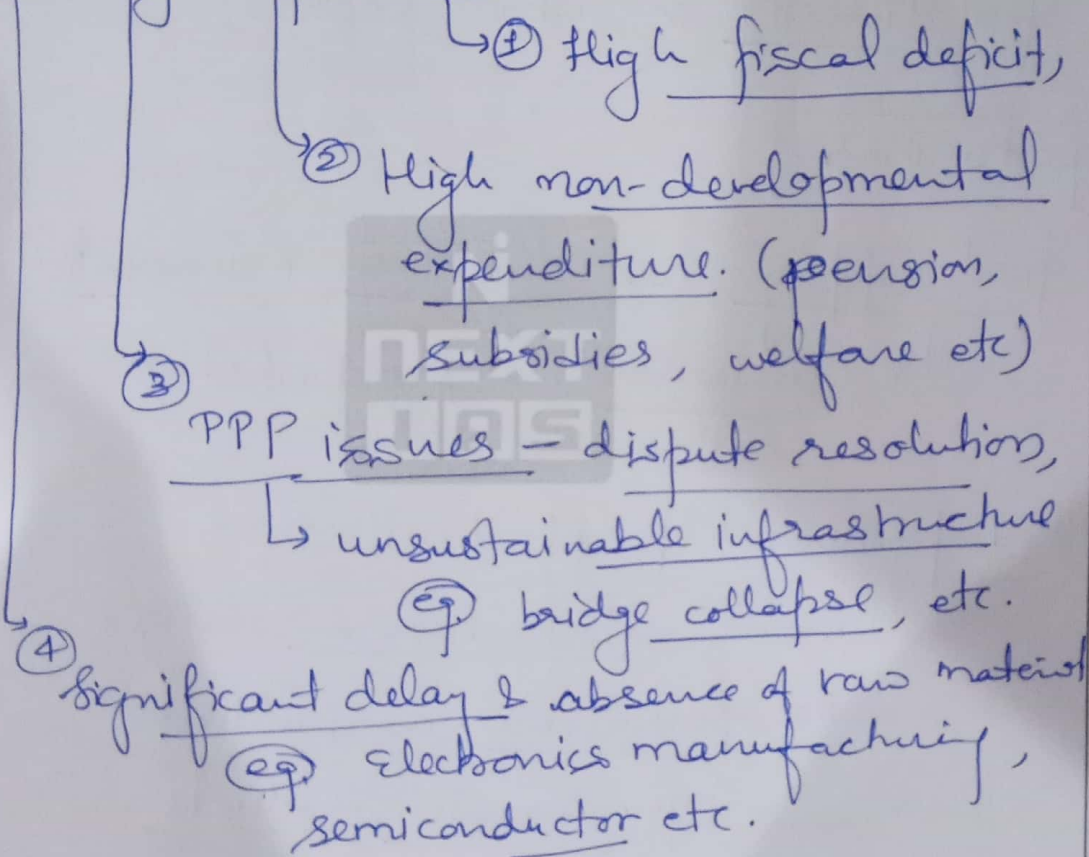
- ① Boosting Make in India initiative
↳ indigenous manufacturing and MSME led growth.
- ② Enhance connectivity and improve market access.
↳ National Infrastructure Pipeline (110 lakh crore by 2024)

③ Utilisation of demographic dividend

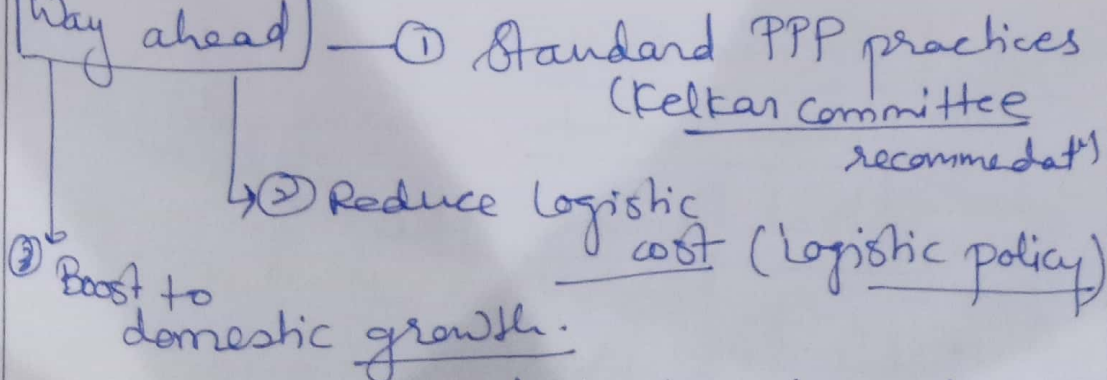


④ Boost to service-sector

Challenges faced



Way ahead



Capital investment is key to achieve vision of developed nation by 2047.

3. "नगरीकरण में वृद्धि के साथ, पेरी-अर्बन/परिनगरीय कृषि (Peri-urban agriculture) ताज़ा 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)

Peri-urban agriculture is an effective mechanism of ensuring food security and food diversity in urban areas.

Opportunities

① Food supply and demand management
↳ Census 2011: 31% population in urban areas.

② Entrepreneurship opportunities -
↳ many entrepreneurs emerging in peri-urban agriculture
eg. organic products

③ Usage of limited spaces
↳ urban rooftops, urban gardens, vertical farming, hydroponics etc.

④ Sustainable farm produce and food supply.

Challenges associated

- ① limited land availability and water scarcity
(eg) Delhi drinking water crisis 2024.
- ② lack of adequate skills and knowledge.
- ③ Overexploitation and misuse of fertilisers.
- ④ Urban heat island effect
↳ reducing productivity.

Way forward

- ① R&D in peri-urban agriculture
- ② promote start-ups in this field.
- ③ integrate with food processing
- ④ Enhance export and GDP contribution.

Peri-urban agriculture has potential to fulfil SDG 2 (eliminating hunger) and SDG-11 (resilient & sustainable cities)

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 produces 22mn tonnes of pulses and imports nearly 60% of vegetable oil from global markets.

Major challenges in self-sufficiency

- ① Pulses — ① production of pulses has been constant (≈ 22mn tone) since green revolution.
- ② More focus on wheat & rice
↓
neglect of pulses.
- ③ regional disparities.

- ② Oil production
- ① huge demand of large population.
- ② Underutilisation of potential
(eg) North-Eastern Agro-climatic zones - unexplored
- ③ import dependency.

Measures to address

- ① Evergreen revolution instead of Green revolution
- ② Pulses (low water demand & leguminous)
↓
so need to enhance production.
- ③ MSP to pulses & oil seeds as well.
- ④ Procurement & distribution should be made efficient.
- ⑤ Vegetable oil - explore North-Eastern potential.
↓
② Area specific development
eg. Groundnut (MH),
Sunflower (Telangana)
③ Enhance processing capabilities.

Enhancing production in vegetable oil & pulses will help enhance India's global agriculture share. (Currently <3%).

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

India has a target of carbon
neutrality by 2070 as a part of
 its Panchamrit targets.

Potential of biomanufacturing &
 biofoundary -

① Reduce carbon footprints

(eg) bio-based fertilisers leading
 to reduction in methane
emissions.

② Sustainable manufacturing -

① Organic
product
promotion

② Waste
decomposition
 (cellular
 composting)

③ Nature-
based
solutions.

③ Sector-specific carbon emission
reduction -

(eg) Green Shipping (2030),
Electric vehicles.

However challenges persists -

- ① Green investment crunch
- ② Issue of greenwashing
- ③ Issue of green technology

Way forward

- ① replicate best practices
(eg) microbes based ocean cleaning.
- ② bio-plastics, and waste reduction strategies.
- ③ Green credit in biomanufacturing.

This will help achieving SDG-7
and smooth transition to
carbon neutrality.

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)

SpaceX has designed Reusable Launch Vehicles (RLVs) like falcon heavy as a significant step in space economy.

Principles behind working of RLVs

- ① Launch Vehicle transports load (spaceship) to space.
- ② Smooth transition to orbit and return journey using telemetry & backing operations.
- ③ Soft landing on ocean or land by launch vehicle.

Significance — Reusable Launch Vehicles are not expandable.
↳ ② Significantly reduce cost.

- ↳ ③ Reduce space debris (Kessler Syndrome)
- ↳ ④ Operation cost reduced

Potential benefit in India's space commerce -

- ① help enhancing India's contribution in space economy from 2% → 10% by 2030
(Indian Space Policy 2023)
- ② India as emerging leader in providing small launch vehicle services.
- ③ Private sector can make this drive achievable.

Challenges — ① Adoption of technology
 ② late entry of private sector
 ③ Undercapacity of LVs - GSLV only 3000 kgs.

Adopting QLV technology will help fulfilling vision of leadership in space sector.

- 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 (CCTS) 2023

in line with Paris Agreement 2015,
deals trading of carbon credits to
offset excess carbon emissions.

Key features of CCTS 2023

- 1) Emission certificates can be marketable
↳ excess emitters can offset
by purchasing Emission certificates
- 2) Mandatory limit of fossil fuel
usage & use of renewables
- 3) Sector specific carbon emission
limits.

Potential in mitigating Greenhouse gases

- 1) Polluter's pay principle - need to
purchase certificates for excess
emission.

2) Replacing harmful technologies which emits more & facilitation of renewable integration.

3) Will help achievement of India's NDCs & Panchamrit targets

- ↳ ① Carbon neutrality (2070)
- ↳ ② Reducing carbon intensity of GDP by 45% (2030)
- ↳ ③ 1 billion reduction in projected emissions.

Challenges

- ① pay and pollute attitude.
- ② Not the right approach
 - ↳ need sustainable solutions (Nature based solutions)
- ③ Against environmental consciousness & not sufficient for 2^o target.

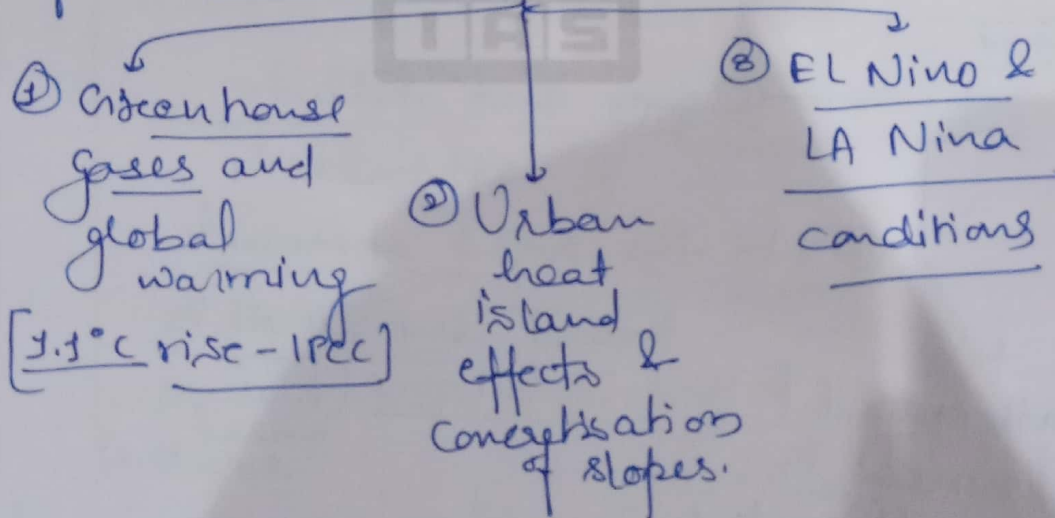
Way forward

- ① Mission LIFE & lifestyle changes.
 - ↳ ② Small scale supply chains (Small is Beautiful E.F. Schumacher)
- Sustainable development requires holistic solutions.

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 wave is defined as plain's temperature reaching above 40°C or an instant increase of $5-6^{\circ}\text{C}$ and hill's temperature above 30°C as per IMD.

Increased intensity, frequency & duration of heat wave due to



Inclusion of 'heat waves' as notified disaster under Disaster Management Act, 2005

Favour

→ ① Heatwave impact on health and lives of people.

- ↳ ② notified disaster status will help policy formulation & heat wave mitigation plans.
- ↳ ③ Mobilisation of resources and funds for mitigation & preparedness.
- ↳ ④ Proactive role of centre & state governments in disaster risk reduction.

However challenges remains -

- ① Reduction in state government's power.
- ② State's autonomy may be compromised
- ③ Difficulty in disaster risk reduction as no local & specific cause.

Way forward

- ↳ ① Supplementing state's efforts of disaster mitigation
- ↳ ② Notifying under DM Act 2005
- ↳ ③ Holistic approach - need to tackle issue of climate change

Heatwaves leads to productivity decrease, loss of lives so it can be notified as disaster under Disaster Management Act 2005.

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)

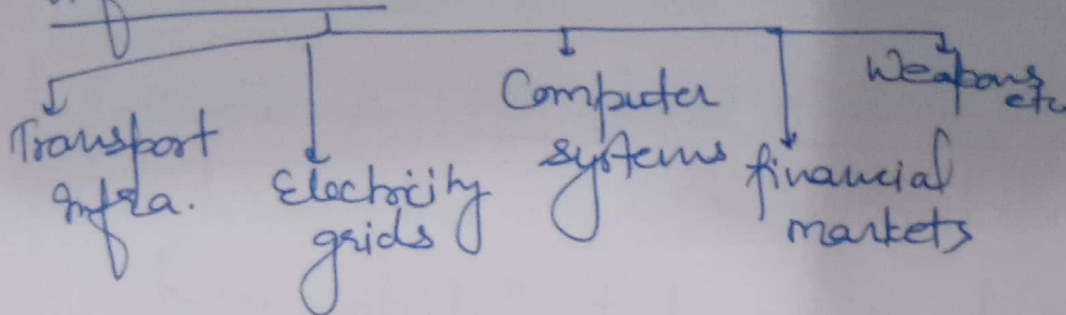
Cyberspace is increasingly becoming complex and threatening national security by targeting critical information infrastructure (CII).

Joint doctrine for cyberspace operations

- ① Enhancing coordination and cooperation among different agencies.
- ② Information sharing mechanisms established.
- ③ Both pro-active and reactive measures
 - ↳ cyberspace security, app protection etc
 - ↳ Information retrieval, protection of data etc.

This will strength both—traditional as well as grey-zone warfares as—

1) Protection of Critical Information Infrastructure like -

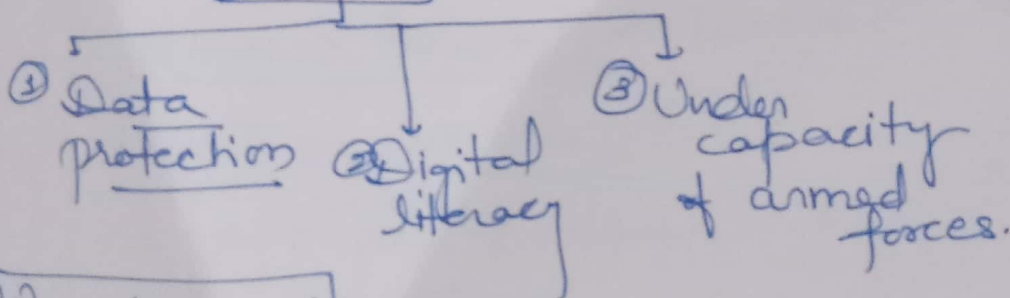


2) Threat perception & capacity enhancement -

↳ ① Training & capacity building of armed forces.

3) Enhance intelligence capabilities and surveillance measures.

However issues remains -



Way forward

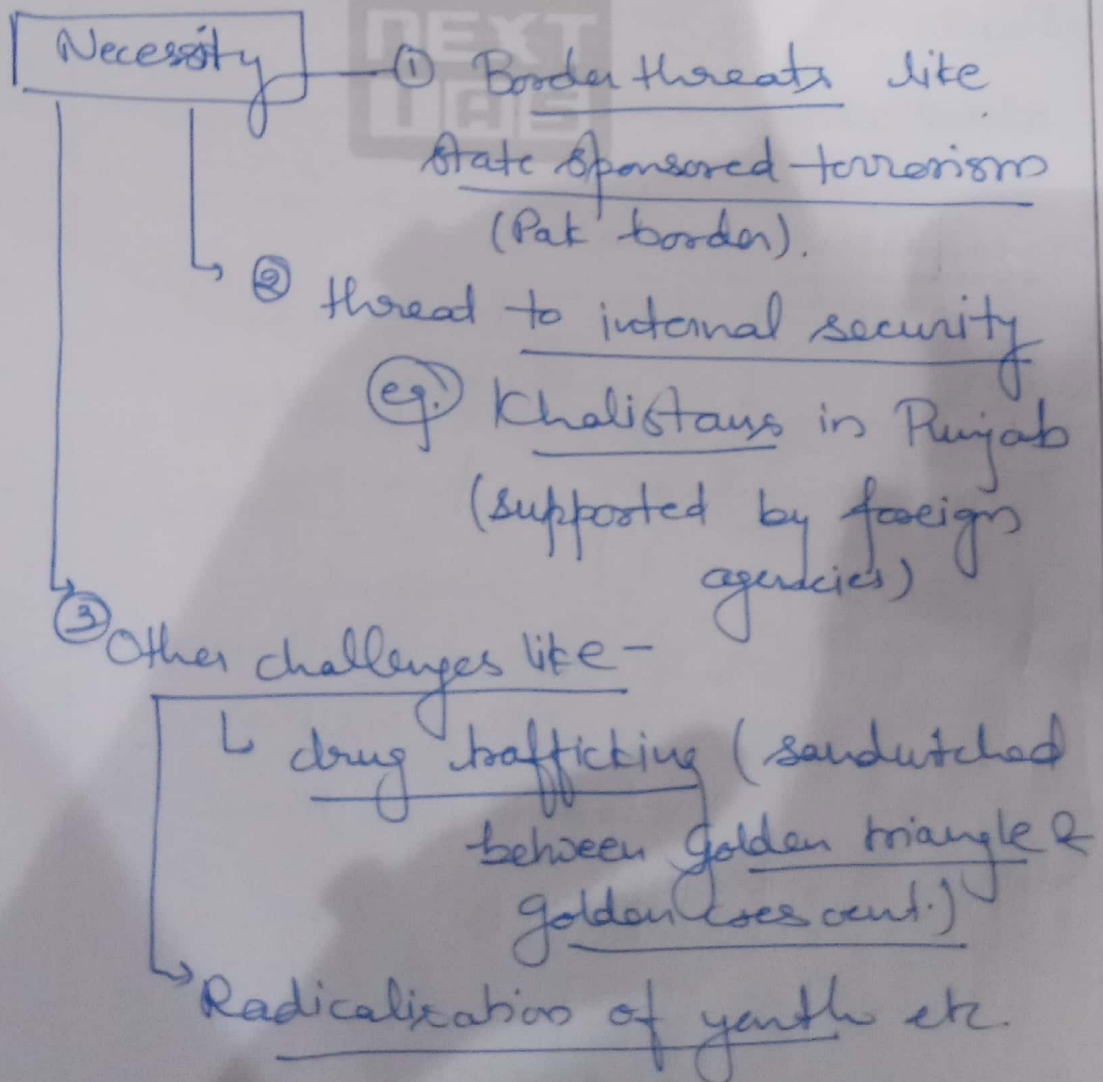
- ↳ ① International collaboration (eg) ITU, military exchange agreements etc
- ② Indigenens capacity enhancement.

The doctrine for yberspace operations is a welcome step to enhance India's capabilities.

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)

Border Security Force's (BSF) territorial jurisdiction has been enhanced in states adjacent to Pakistan and Bangladesh to effectively tackle issue of internal security and Border management.



Potential issues

- ① federal autonomy
of States at risk.
eg. Punjab - territorial
jurisdiction enhanced
from 15 km to 50 km.
- ② Infingement on state list
(Police - Under State list, 7th
Schedule)
- ③ Issue of human rights violation
④ State's dissatisfaction.

Way forward

- ① Balancing national
security and federalism.
- ② Joint operations - both state
police & central agencies.
- ③ Protection of human rights.

The concern for national security
should not override State's autonomy.
A balance between both must be
spelled out

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)

As per economic survey 2023-24, India's GDP grew over 7% amidst global uncertainties.

However, youth unemployment rate in India is around 10%, overshadowing demographic dividend manifestation.

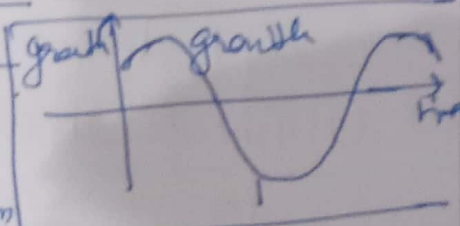
Persistent challenge of unemployment

- 1) Unemployment rate in India - 8% (CMIE)
- 2) 45% employed in agricultural activities contributing only 18% to GDP.
- 3) Manufacturing sector bypass - only 24% workforce with 22% GDP contribution.

Main issue is structural unemployment.

Concept of structural unemployment

It refers to unemployment due to skill mismatch and demand-supply issues. ^{not due to}

- ① Disguised unemployment - marginal productivity zero.
- ② frictional unemployment - switching between jobs.
- ③ Cyclical unemployment - due to Business cycle 
- ④ Skill mismatch -
 - ↳ Vocational education lower levels. (only 5%.)
 - ↳ employability is <45%.

Relevance in context of India's current economic situation -

- ① Harnessing demographic dividend
 - ↳ India's demographic dividend phase till 2050
- ② Providing workforce to world.
 - ↳ Service sector - Indians leading.

- 3) 30 billion dollar economy dream
by 2047 (Budget 2024-25)
- 4) Manufacturing sector growth and
enhanced contribution to GDP.

Policy measures

- ① Skill India mission - skilling & upskilling
- ② Stand-up India & Start-up
India Schemes.
- ③ PM MUDRA Yojana and credit support.
- ④ UDAN scheme & STEM courses
for women.
- ⑤ Production linked Incentives &
Atmanirbhar Bharat

- Way ahead
- ① Surplus labour should
be absorbed in labour intensive
sectors like - food processing,
textile etc.
 - ② Vocational education & skill
mapping
(NEP 2020).

Inclusive job growth will help harness
demographic dividend & aim of 30 billion
\$ economy.

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 डेढ़ में 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 approx. 30% to GDP
and have an export share of 45%.

Role of MSMEs in fostering regional growth

① Economic development

↳ ① Employment of people
eg. 10% by textile industry.

↳ ② Attracts investment and generate revenue.

② Social development

↳ ① Source of income for local populace.

↳ ② Positive externalities
eg. better healthcare, education etc improve.

③ Infrastructure creation —

↳ foster regional connectivity.

④ Balanced growth and regional development.

- ⑤ Sector specific growth -
eg. Food processing → Agricultural
marketing. (APCOs)
- ⑥ fill industry gap in backward
regions
- ⑦ labour intensive MSMEs absorbs
excess workforce.

MSMEs contribution in Industrial diversification

- ① Informal sector - 90% workforce
↳ MSMEs help in formalisation
- ② Diversified activities like -
- ↓

textile
MSMEs

↓

Food
Processing
Industries

↓

Pharma-
centicals
Industries

↓

Education
sector
- ③ Big industries face issue of license,
Compliance & Inspection
↳ MSMEs fill the gap.

Contribution in tech advancement -

- ① Cutting edge technology like space sector, semiconductor (3D printing) etc.
- ② Imparting skill to people -
↓
making tech proficient.
- ③ Contribution in technological exports
↓
↳ Make in India initiative.

Challenges

- ① Regulatory cholesterol
- ② Informal sector (90%)
↳ Arjun Sen Gupta Committee
- ③ lagging in technology & capital intensive growth.

Way ahead

- ① Production linked incentives
↓
boost to exports
- ② RAMP scheme, ECLAS scheme etc.
- ③ Ease of doing Business.

MSMEs are growth engine of Indian economy & are crucial in industrial & technological development.

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)

Government provides MSP on 23
crops to support farmers from
market uncertainties like sudden
price shock.

Legalisation of MSP; Insurance against
sudden price shock -

Arguments for -

① Legalisation will make it
a right of farmers to sell their
produce
↳ assured price for
their produce.

② Will reduce regional disparities
in MSP procurement.

↳ effective only in few
States like Punjab, Haryana,
Western U.P.

- ② MSP for other crops → will lead to crop diversification
↳ currently effective procurement only for wheat & rice.

Arguments against

- ① Heavy fiscal burden on government
- ② Will lead to huge losses due to mismatch in demand & supply.
- ③ Price shocks due to other factors like Monsoon, drought etc - can't be integrated.
- ④ No benefit to exported agricultural produce.

Other measures can be taken to make MSP-leg procurement effective

- ③ Price Deficiency Scheme - give only difference of MSP & market price.
(eg) Bhavantar Bhugtan Yojana (M.P.)

② Private procurement

↳ eg. Private procurist & stockist scheme (under PM AASHA)

③ Decentralised procurement

↳ 'Cooperative model' can be used for procurement.

④ Direct Benefit transfer to insure from price shocks eg. KALIA scheme, PM KISAN.

MSP is not panacea for farmer problems. A robust agriculture market with cold chain facilities & good processing ability will make Indian agriculture produce competitive in global market.

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)

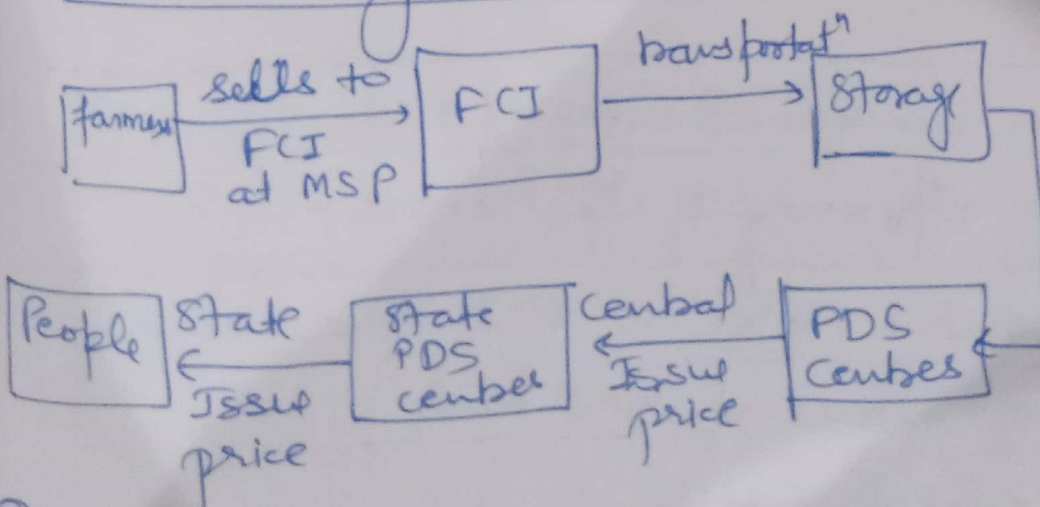
Food corporation of India (FCI) ^{sells} ~~procures~~
food at Issue price and ^{procures}
at MSP (Minimum Support Price).

Role of FCI in PDS to ensure food security

① largest food welfare program

↳ 75% rural population +
50% urban population = 67%
total coverage.

② FCI centrality in PDS —



③ Welfare & food security costing
2 lakh crores annually.

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④ Women empowerment

- ↳ Head of household - women above 18 years of age.
- ↳ Extra benefits to pregnant & lactating mothers.

⑤ 5 kg per person or 35 kg to Antyodaya households.

However issues in FCI & PDS —

① Administrative cost $\approx 40\%$.
(transportation & storage).

② Wastage of food & improper storage.

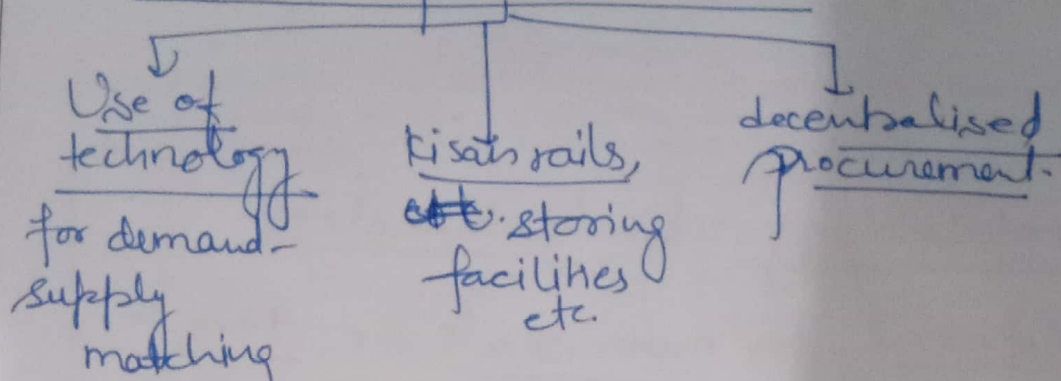
③ Regional imbalance in procurement & distribution.

Reforms in functioning of FCI to enhance efficiency & effectiveness—

① 'Cooperative Model' in FCI procurement on lines of Tamil Nadu.

② Enhancing quality of storage :-
↳ cold storage, proper ventilation, protection from mites etc.

② Reduce transportation cost-



④ Local systems approach-

↳ Local demands should be met with local supply of foodgrains

⑤ Diversification of PDS grains

↳ multinutritional substitutes

(eg) Pulses, millets etc.

FCI plays central role in achievement of SDG 1 of reducing poverty and SDG 2 of eliminating hunger.

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 technology development on nano scale i.e. 1nm to 100nm. Nanotechnology in recent times is used in every sector including agriculture.

Role of nanotechnology in enhancing -

① Agriculture productivity

① Precision agriculture -

Efficient
use of
inputs

High
absorption
of fertilisers

Soil Health
& soil
microbes

② Reduced input cost -

eg nanourea cheaper for
same efficiency.

③ Genetically modification & High yield varieties

↳ enhance productivity
↳ reduce crop loss.

② Food security

① Nutrient management

↳ Hidden hunger can be tackled

⊕ fortified rice

② Increased agriculture production

↓
accessibility & affordability.

③ Drought resilient crops and food security

Recent developments

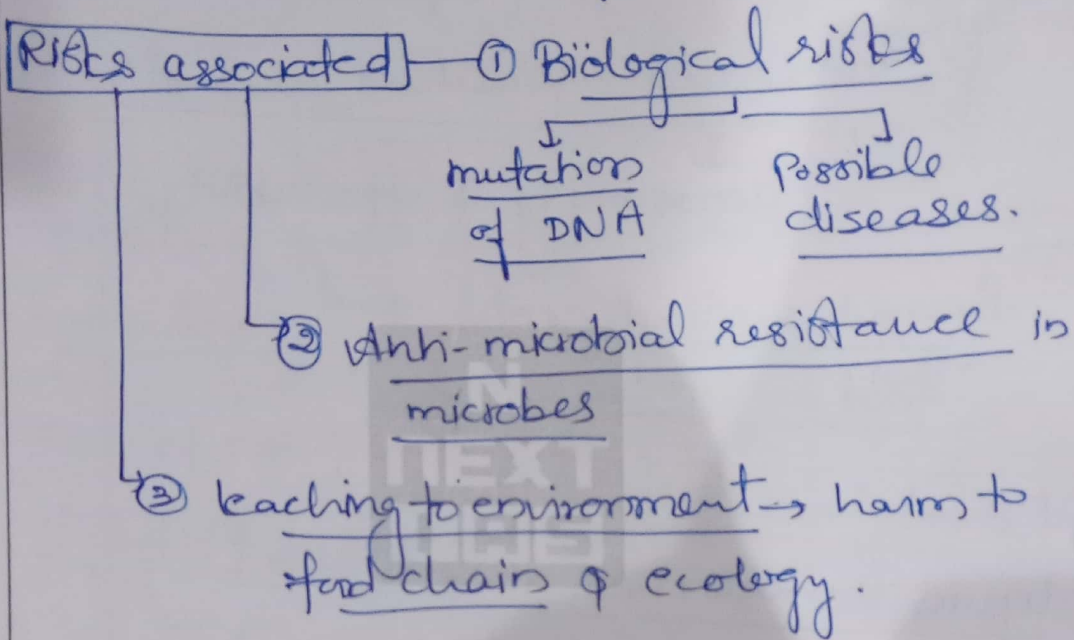
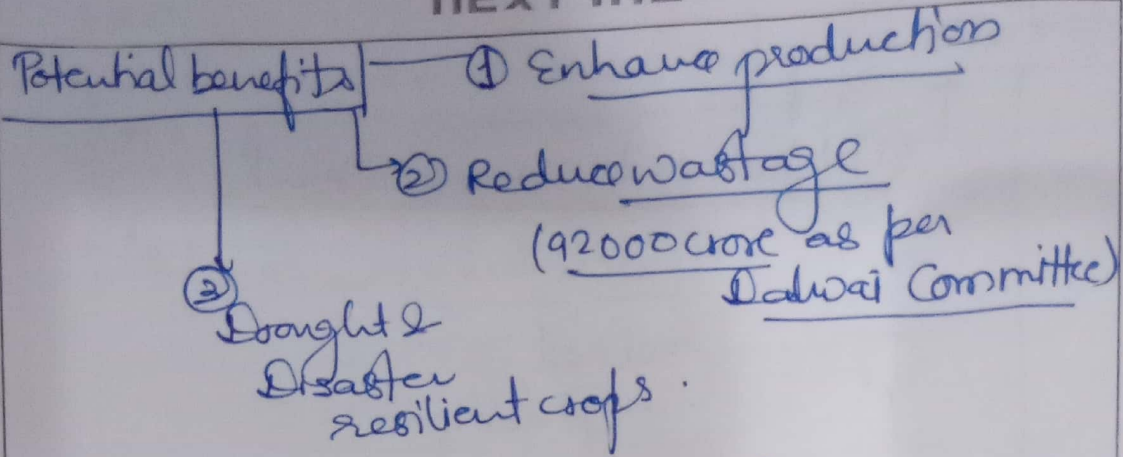
① Liquid nanousea (more efficient absorption & foliar application.)

② Nano DAP (phosphorous need in plants)
↓
Strong root system.

③ Nanobots use for precision agriculture.

④ Nanotechnology in soil health
(Soil Health Cards)

⑤ Nano-pesticides
↳ targeted killing of pests & reduce crop harm.



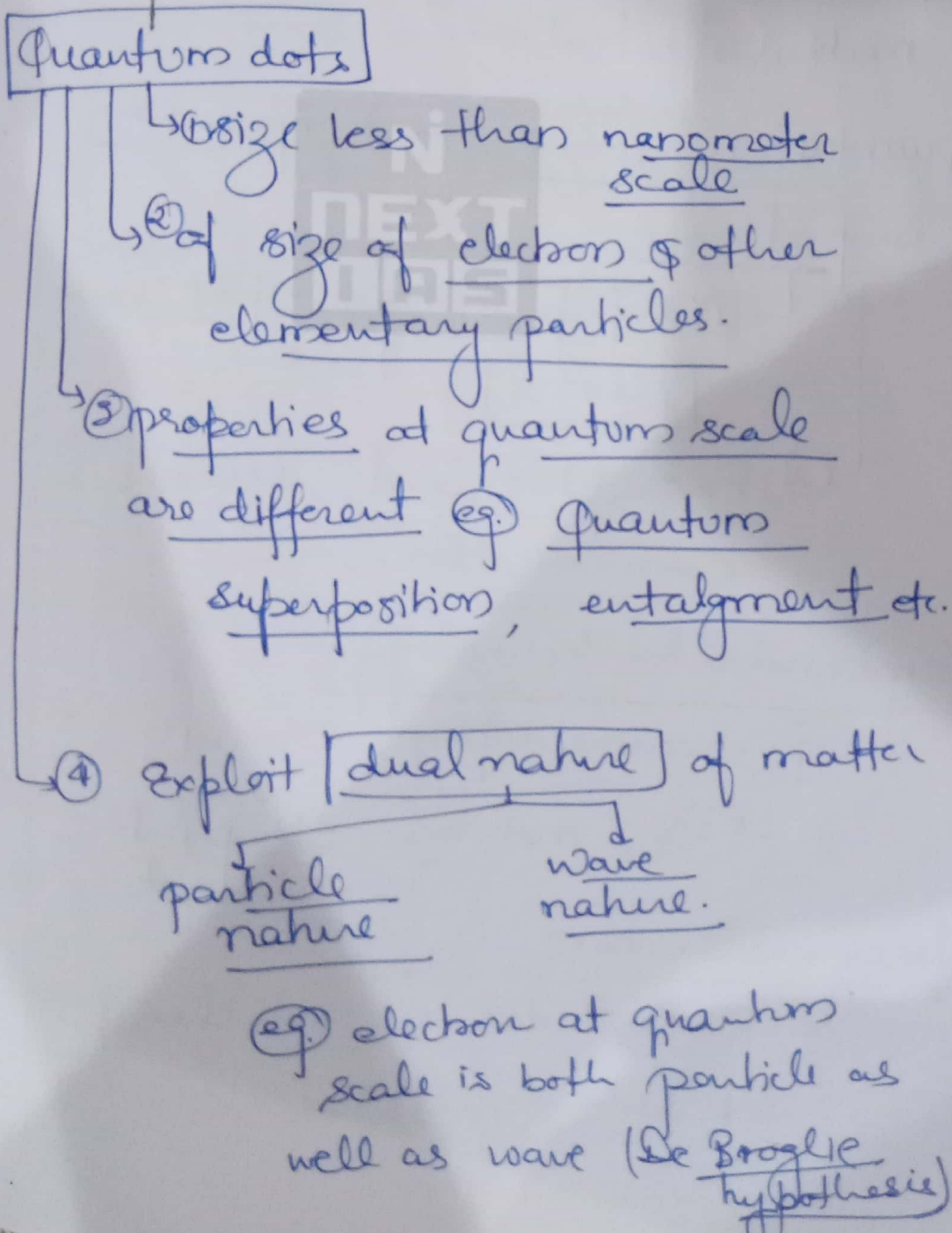
Way forward

- ① Scientific assessment
- ② Research & Development
- ③ Risk assessment of nanofertilisers & nano-pesticides.
- ④ Reduce leaching by mulching.

Nanotechnology has potential to transform agriculture. However caution should be taken in its application.

16. 2023 का भौतिकी का नोबेल पुरस्कार क्वांटम डॉट्स के संश्लेषण की खोज के लिए एकिमोव, ब्रस और बावेन्डी को संयुक्त रूप से दिया गया। इस संदर्भ में क्वांटम डॉट्स के अनुप्रयोगों पर चर्चा कीजिए।
(15 अंक, 250 शब्द)
The Nobel Prize in Physics of 2023 was jointly awarded to Ekimov, Brus and Bawendi for the discovery of synthesis of quantum dots. In this context, discuss the applications of quantum dots.
(15 marks, 250 words)

Quantum dots are zero-dimensional systems that work at quantum scale and exhibit immense beautiful effects.



Applications of quantum dots

① Efficiency enhancement -

eg. Use of quantum dots to enhance solar cell efficiency.
[can enhance by >30%]

② Efficient drug delivery and medical applications.

③ Quantum Communication & quantum computers -

↳ ① Superposition principle and qubits

↳ ② Encryption and secured communication.

④ Semiconductor technology -

eg. Vacuum displays, organic LEDs, mobiles, 3D-printing etc

⑤ Space exploration

↳ efficient launch vehicles & satellite modules.

- ⑥ Energy security and food security
(eg) energy storage and batteries
- ⑦ faster transportation -
↳ enhancing efficiency of engines.
- ⑧ Advanced & cutting edge technologies.

Challenges

- ① Very small scale
- ② Quantum decoherence
↳ difficulty in measurement
- ③ Heisenberg uncertainty principle
↳ imposed restriction on nano scale.

Way forward

- ① R&D in quantum dots
- ② Adoption of technology at faster pace.

India can leverage this technology to cover semiconductor race and secure its digital sovereignty.

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 refers to biodiversity areas which are protected by legislations like Forest (Conservation) Act 1980.

Role of protected areas in biodiversity conservation -

- ① Species conservation and protection
eg. Wildlife sanctuaries like Blackbuck sanctuary (Gujarat)
- ② Conservation of forest and restrictions on forest land diversion.
↳ T.N. Godavarman case (Supreme Court)
- ③ Prohibition of human activities like killing, hunting, etc.
- ④ In-situ biodiversity conservation
- ⑤ Preventing species extinction
eg. extra protection to scheduled species of Wildlife Protection Act.

Effectiveness of —

① National parks

- ↳ ① Protected areas under Wildlife Protection Act.
- ↳ ② Habitat to wild animals —
(eg.) Rajaji National Park,

② Biosphere reserves

- ↳ ① protected areas under Biodiversity Act 2002
- ↳ ② fulfills UNESCO Man & Biosphere Programme.
- ↳ ③ Sustainable living and conservation simultaneously.
(eg.) Kanchenjunga Biosphere Reserve,
Nilgiri Biosphere Reserve.

③ Wildlife sanctuaries

- ↳ more freedom to human activities.
- ↳ species specific conservation programmes.
(eg.) recent Dugong WLS
to protect Dugongs

Challenges of protected areas

- ① Wildlife & human conflict in nearby areas.
- ② Insufficient efforts - species status continuously degrading in red data book.
- ③ Lack of conservation
(eg) few Tiger reserves don't have a single tiger (Tiger census)
- ④ Efforts in silos
↳ need to recognise linkage of biodiversity.

Way forward

- ① Community involvement
(eg) Bishnoi Community
- ② Indigenous measures
(eg) Sacred grove protection
- ③ Adopt best practices.

Biodiversity conservation is intricately linked with human survival. Hence sustained efforts to achieve SDG (14) - life below water & SDG-15 (life above land) should be taken.

18. भारत में पार्टिकुलेट मैटर (PM2.5 and PM10) और ओजोन प्रदूषण के उच्च स्तर होने के क्या कारण हैं? और ओजोन प्रदूषण को कम करने के लिए सरकार द्वारा किए गए विभिन्न प्रयास कितने प्रभावी रहे हैं?

(15 मं, 250 मं)

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)

High PM concentration and ozone pollution
is contaminating atmosphere and
degrading air quality in many parts
of world.

Cause of High level of PM 2.5 & PM 10 and
Ozone -

① Anthropogenic causes -

↳ ① Vehicular emissions

↳ NO_2 & SO_2 emitted react
with sunlight
to produce Ozone
(harmful)

↳ ② Industrial smoke and
effluents in environment.

↳ polluting industries like
leather, rubber etc
contributes more.

↳ ③ fossil fuel use - coal (45%) usage
combustion. needs

③ Natural causes

↓
Volcanic emissions

↓
forest fires and global warming

↓
Ozone depletion andospheric ozone pollution

Steps taken by government

- ① Air Quality Guidelines - on WHO Standard for 6 pollutants including Particulate matter & ozone.
- ② National Ambient Air Quality Standards (NAAQS) for air quality improvement.
- ③ Ratification of Vienna Convention & Montreal protocol.
↳ replacing HCFCs with hydrofluoro olefines.
- ④ [NAP] - 40% reduction by 2026.
- ⑤ e-mobility under FAME scheme.
- ⑥ Adoption of renewables (Panchamrit targets)

- ④ Carbon neutrality by 2070 (pledge)
- ⑤ Extension forestry
 - ↳ forest also bees along highways to reduce emissions.

Challenges

- ① High level of pollution - 14 out of 20 most polluted cities in India.
- ② Health problems - asthma, NCD etc.
- ③ Cities becoming pollution centres.

Way forward

- ① Green infrastructure and white infrastructure
(eg) Netherlands white roofs.
- ② Natural ecosystem as carbon sinks
- ③ faster renewable integration

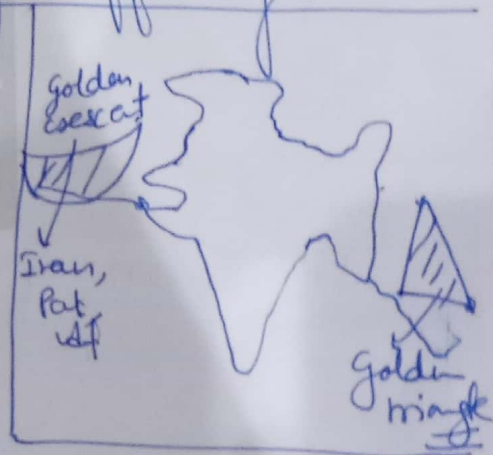
Reducing Particulate matter & ozone concentration is need of hour to prevent health problems as more than 50% population is expected to live in urban areas by 2050.

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)

The organised crime of drug trafficking
is ailing India, impacting health of
its youth and spreading social crimes.

Growing menace of drug trafficking

- ① Sandwiched between
Golden triangle &
golden crescent



- ② Border areas - prone
to drug trafficking

eg. Punjab drug menace.

- ③ Linkage with other crimes -

eg. Human trafficking, financing
terrorist activities.

- ④ Culture of drug abuse - glorified on
social media & cinema.

↳ negative impact on psyche
of youth.

Various dimension of this challenge

① Social dimension

- ① degrading fabric of society.
- ② rise in criminal activities.
- ③ disturbing peace and stability
- ④ Negative consequences on family system.

② Economic dimension

- ① Depletion of meager resources on drug purchase.
- ② Rise of Black money & parallel economy.
- ③ Anti-competitive practices

③ Medical & Health issues

- ① Negative effect on health
- ② Resistance to withdrawal from drug abuse.

④ Human Resource

- ① diverting human resource and making ineffective
- ② Reduced efficiency.

⑤ Political dimension

① Nexus

and Linkage
to terrorism

② Influencing
free & fair
election
process.

Multi-pronged approach

① Rehabilitation of victims -

↳ employability & skill
development.

② Border management

↳ to address issue of
illegal trafficking -

③ Awareness campaigns -

↳ Nishamukt Bharat initiative.

④ Role of NGOs and CSOs

↳ social sensitisation and
rehabilitation.

Drug trafficking is a serious menace.
Urgent steps should be taken to
address the issue comprehensively.

20.

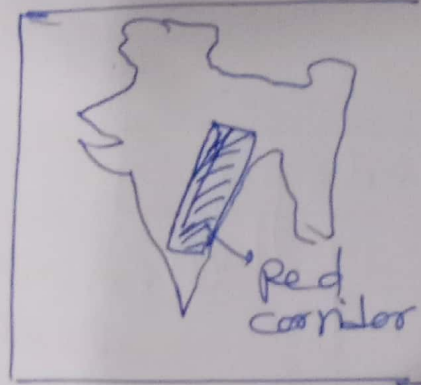
बायेंधी उग्रवाद के प्रति भारत की प्रतिक्रिया (कारवाई) में नक्सलवाद के मूल कारणों को दूर करने के लिए कठोर सुरक्षा उपायों के साथ-साथ सामाजिक-आर्थिक नीतियों और संवाद जैसे नरम दृष्टिकोणों/उपायों (Soft approaches) को एकीकृत करने की आवश्यकता है। चर्चा कीजिए। (15 अंक, 250 शब्द)

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)

Naxalism or Left Wing Extremism (LWE) is a serious issue in Red corridor comprising of districts from 10 states.

Problem of LWE

- ① Armed rebellion against state.
- ② Radicalization of youth.
- ③ Serious impact on social development of local people.
- ④ Resistant to reforms and violent means



Response to LWE

- ① Socio-economic development
 - ↳ ① addressing governance deficit
 - ↳ 5th & 6th schedule, Forest Rights Act etc
 - ↳ ② Employment opportunities

③ Education and Skilling
eg. Roshini scheme

④ Healthcare infrastructure and basic necessities.

⑤ Balanced development -
↳ fair compensation act
and displacement should
be balanced.

② Dialogue

- ↳ ① Consultations between
involved stakeholders
- ↳ ② Appeal to surrender and
lenient treatment.
- ↳ ③ Demands should be listened
carefully.

③ Hard security measures

- ↳ ① Operation Green Hunt
and security measures
- ↳ ② Stringent punishment as
deterrent
eg. Andhra Pradesh
Greyhounds

② AFSPA - Special powers to armed forces in case of emergency

Other measures

① Samadhan doctrine -
↳ ① all round development
↳ ② Holistic approach to problem.

② Schemes like -

- ① PM MUDRA Yojana
- ② Eklavya model residential schools for tribals
- ③ Grievance redressal.

Recently, home minister assured that India will be free of LWE by 2026. This is a good news as tribals will be giving weapons & heading path of development.

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Space for Rough Work