

NEXT IAS**GS MAINS ADVANCED COURSE 2024**

(To be filled by candidate)

TEST CODE : GSMAC2403**Test No. : 03****Name of Candidate:** **Mobile No.****Roll No. :** **Start Time** **End Time****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		

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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 होते पर कृपया तुरंत जांचें कि इस QCA पुस्तिका में कोई छूट या साधरी 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 अपूर्णित 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, प्रवेश के समय चुनी गयी भाषा के माध्यम से ही लिखे जाने चाहिए।
5. अभ्यर्थियों को विशिष्ट प्रश्न के उत्तर संबंधित प्रश्न के नीचे ही लिखने होंगे। अपूर्णित 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 अशर्मांकित तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS:**FOR OFFICE USE ONLY**

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

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)

Current India's fiscal deficit is around 5.5% of GDP and aim is to lower it to 4.5% by 2025-2026 (under FRBM (Amendment) Act)

Various factors contributing to high fiscal deficit :-

- 1 > Low revenue receipt — from tax and non-tax both
- 2 > High capital expenditure — to fulfill welfare nation of state
- 3 > Tied nature of revenue expenditure — like salary of employee, defence expenditure etc.
- 4 > Huge debt / GDP ratio of about 90%.

Various consequences of such high fiscal deficit

- 1 > Increase in debt / GDP ratio — violation of norm of 60% under N.K. Singh - FRBM review panel.

- 27 lead to fiscardian equivalence - i.e public expenditure decreases
- 37 may lead to rise in tax rate in future.
- 47 chances of rise in inflation.
- 57 can decrease multiplier effect of money

Various measures that can be taken for fiscal consolidation

- 1> Abide by norm of fiscal prudence as stated by N.K. Singh committee.
- 27 Enhance entrepreneurial skill - so as to decrease capital expenditure in long-term
- 37 Rationalise subsidy bill - [eg] FY 23 - > 4 lakh Cr subsidy bill
- 4> Widen tax base - to leverage Laffer curve.

Overall, fiscal prudence and policy of counter cyclical fiscal measure should be adopted to achieve fiscal consolidation.

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)

India aspires to be 'Viksit Bharat' by 2047 and this requires huge capital investment to give impetus to various sectors and leverage the demographic dividend.

Potential of capital investment :-

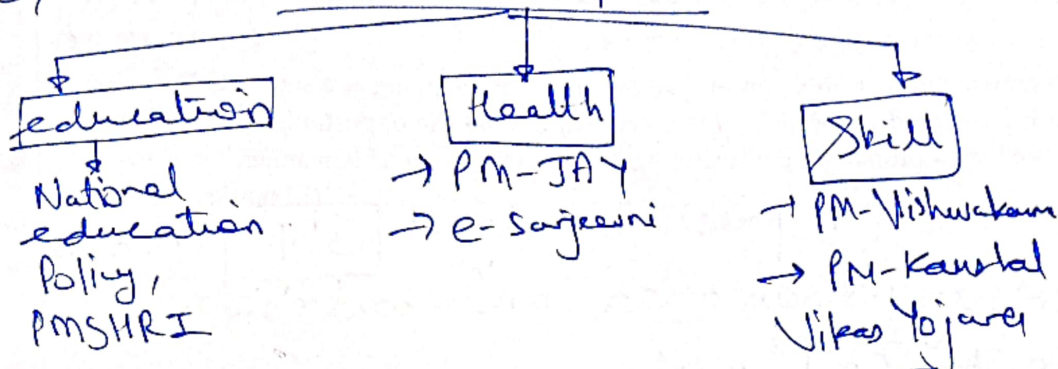
1. Can boost MSME — by credit linked subsidy like CATME and boost manufacturing sector.

2. Can enhance demographic economic potential — by tapping skillset of young population.

3. Promoting infrastructure as engine of growth — eg. NIP requires 111 lakh cr.

4. For enhancing logistics sector — eg. PMCA TI Shakti can decrease logistics cost from 13-14% of GDP to 8% (Aim)

5) Enhance human capital



However, various challenges are also associated

- ① Poor revenue receipt in budget — leads to rise debt from domestic market (79% debt is from domestic source)
- ② Low translation of policy — renders growth ineffective
- ③ Corruption & Red tapism act as bottleneck
- ④ Poor PPP participation in infrastructure development
- ⑤ Stagnant manufacturing (around 15% of GDP) and low agriculture productivity.

Need is to attract private investment, deepen bond market, use ADR/GDR option, raise fund by REITs & Invits and promote fiscal consolidation, along with suitable administrative reform for achieving 'Viksit Bharat 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)

At present about 31% population lives in urban area and contributes about 60% in gdp.

However, due to unplanned urbanisation and over-urbanisation need for continuous food supply is growing and thus peri-urban agriculture is flourishing.

Opportunities associated to peri-urban agriculture:-

- ① Enhanced food security
- ② later to fast food industry like McD, KFC etc.
- ③ Easy transportation of perishables via RRTS and metro etc.
- ④ Enhances farmers income.
- ⑤ growing rural-to-urban migration, increases potential of demand.

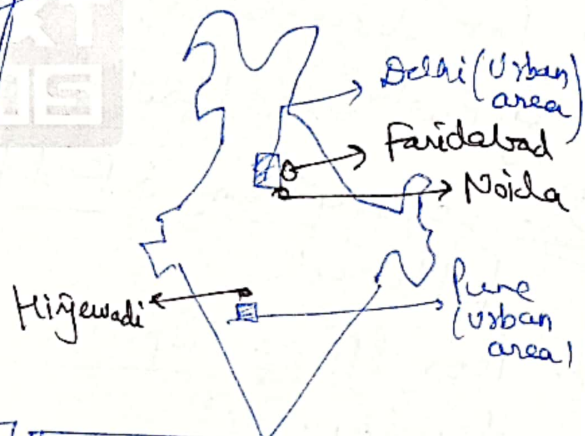


Fig. Urban and Peri-urban area

67 Smooth transit connectivity provides greater opportunity.

Challenges associated are :-

- 17 Lack of diverse food crops - (9).
local sensitivity act as hinder to protein diet need of urban people.
- 27 Poor marketing of agriculture produce
- 37 Lack of e-commerce integration
of peri-urban farmers with Big Bazar
and reliance fresh etc.
- 47 Issue of contract farming and
non-remunerative contract
- 57 High use of injectibles like
ethylene to cater to demand
in urgent mode.

Need is to have
Smooth transportation, diversification
of crops like quinoa, mung, etc and
have proper integration to e-commerce
to enhance & leverage developing
peri urban agriculture..

4. दालों और वनस्पति तेलों में आत्मनिर्भरता प्राप्त करने के लिए भारत के कृषि क्षेत्र के समक्ष कौन सी प्रमुख चुनौतियाँ हैं? इन चुनौतियों के समाधान भी सुझाइए। (10 अंक, 150 शब्द)
What are the major challenges faced by India's agriculture sector to achieve self-sufficiency in pulses and vegetable oils? Suggest measures to address these challenges. (10 marks, 150 words)

India is largest importer of vegetable oil in world as well as largest consumer of pulses in world.

Various challenges in achieving self-sufficiency in :-

A. Pulses :-

- 1 → Poor storage capacity - only 48-1 % of food grain is stored.
- 2 → Lack of dehumidifier storage - lead to waste of pulses.
- 3 → General-centric - MSP design - dis-incentivises pulses growth.
- 4 → Localised growth - (eg) in Madhya (MP), Maharashtra, Rajasthan etc.
- 5 → Poor research in pulses area

B. Vegetable oil :-

- 1 → Lack of incentive due to non-procurement under MSP.

2. Climate change vagaries - heavily disrupts its supply chain
3. High gestation period - for [eg]. Oil Palm takes 3 years to mature.
4. ineffective utilisation of payment deficiency system.

Various measures to tackle such challenges :-

1. Dynamic MSP - to promote and incentivise pulse & vegetable oil.
2. Integration of schemes - like National Pulse program and NMEO - Oil Palm.
3. Provide initial capital support - for vegetable oil production.
4. Ashok Dalwai committee - to ease supply chain in pulses and vegetable oil.
5. Promote research and adaptation to climate change.

Thus, to overcome huge dependency on foreign nation we need to have robust plan to achieve self sufficiency in pulses & vegetable oil.

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)

Recently, Cabinet Approved
Bio-E3 which aims to promote
Bio-manufacturing and Bio-foundry to
enhance and develop Bio-technology
capability in India.

Potential of biomanufacturing to achieve
green economy

1) Manufacturing of clean fuel like
Bio-CNG

2) Reduce water pollution by
Utilising biotechnology in area like
bioventing and biosparging

3) Enhance potential of National
Biofuel Policy

4) Develop drought & pest resistant
crops → which leaves no carbon
footprint.

Potential of Biofoundry to achieve sustainable green economy

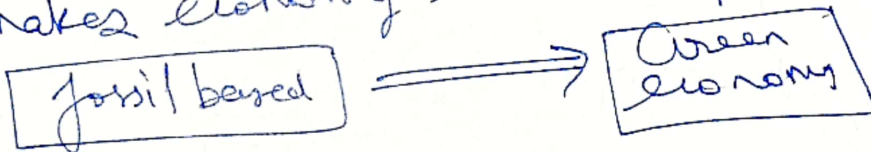
1) Develop labs that can promote green hydrogen development

2) utilise microorganisms capability to act as carbon sequester to decrease carbon emission via biofoundry.

3) Help in achieving Net zero by 2070

4) Helps in achieving Panchamrit, NDC (Paris deal) targets.

5) Makes economy transition possible



Thus, by leveraging BioE3 and enhancing research in area of biomanufacturing and Biofoundry we can have a green transition.

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)

Recently, India had tested a successful flight of RLV-TD (Technology demonstrator), that can have safe landing.

Principles behind working of RLV

- ① Supersonic propulsion module
- ② Thruster to impart thrust
- ③ Use of redundancy module for safe landing.
- ④ Use of air resistance principle and aerodynamics for effective propulsion.

Significance of RLV

- ① Enhances space economy of India.
- ②. can make space missions and satellite launching way cheaper than current price.
- ③. RLV-TD and RLV-EX showcases enhanced space capability of ISRO

Potential benefits of RLV

- ① ⇒ Make ISRO satellite launching business competitive
- ② ⇒ decreases project cost, since launch vehicle can be reused
- ③ ⇒ can boost upcoming missions like Gaganyaan-4, Gaganyaan mission

Thus, ISRO is showcasing its prowess through RLV and is all set to tap huge global space economy of about 32 Trillion \$.

7. कार्बन क्रेडिट ट्रेडिंग स्कीम (CCTS) 2023 की प्रमुख विशेषताओं का परीक्षण 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)

Recently, released CCTS aims to develop robust carbon market in India.

Various features of CCTS

- ① BEE will issue carbon credit certificates.
- ② organizations that have to be mandatorily part of it will be identified.
- ③ Tradeable certificates in markets like IXIL, IEX, Green term Asset Market etc.
- ④ Foreign entity can purchase carbon credit.
- ⑤ Robust ombudsman in carbon market.
- ⑥ Allowing both $\begin{cases} \text{voluntary} \\ \text{and} \\ \text{mandatory market} \end{cases}$

Potential that CCTS holds in decreasing
GHG emission

1) Offsetting carbon emission — lead
to decrease in GHG emission in other
sectors.

2) Decarbonisation of transportation
sector

3) Put check on Thermal power plants
as they are 'mandatorily' listed

4) Obligation under RPO — enhances
clean energy distribution by DISCOMS

5) Integrating with global carbon market
like EU-CBAM and CDM under
kyoto Protocol.

Issue {

- ① RPO & E Sectors are not
denominated in CO₂ equivalent
- ② low expertise
- ③ high offsetting of GHG emission
lead to carbon leakage.

Thus, CCTS holds potential
to achieve Net zero - 2070 but, its
challenges needs to be addressed for
robust functioning.

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 refers to abnormal rise in temperature by 4.5°C to 5.5°C for five or more days than average temperature.

Various rise in heat waves

① Intensity →
eg. Hyderabad experienced prolonged heat wave in 2013

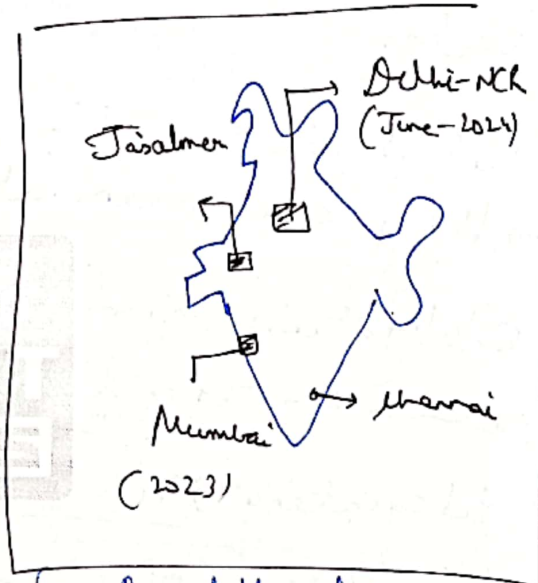
② frequency →
increased in Delhi NCR

③ Duration → lasts for weeks or two.

Heat waves to be notified as 'notified disaster' under DMA, 2005

YES

① Since casualty are increasing — eg. 12 deaths in 2022 in Mumbai due to heat stroke.



High frequent Heat Waves in India

- ⑥ To provide support to states to develop effective 'Heat Action Plan'
- ⑦ To provide compensation support
- ⑧ To enhance adaptation capability of local administration

No :-

- ① Increase burden on central govt. as it has to provide for compensation for deaths.
- ② Still localised in nature
- ③ State budget under DMA-WOS is enough to tackle heat-waves

However, time is come to make it
'Notified disaster'

↳ Since it is spreading to various unprecedented regions like Mumbai
↳ increased severity etc.

This, effective 'Heat Action Plan' along with 'cooling plan' under DMA-WOS is needed to tackle heat waves.

9. भारतीय सशस्त्र बलों द्वारा हाल ही में तैयार किए गए 'साइबर-अंतरिक्ष अभियान (Cyberspace operations) के लिए संयुक्त सिद्धांत' से पारंपरिक ऑपरेशनों के साथ-साथ ग्रे जोन युद्ध दोनों के लिए साइबर-सुरक्षा स्थिति मजबूत होगी। परीक्षण कीजिए। (10 अंक, 150 शब्द)

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

Cybersecurity threat to armed forces has been a 5th dimension of warfare and thus such doctrines will help in enhancing its capabilities.

It helps in strengthening of cybersecurity posture in

A. Conventional operations

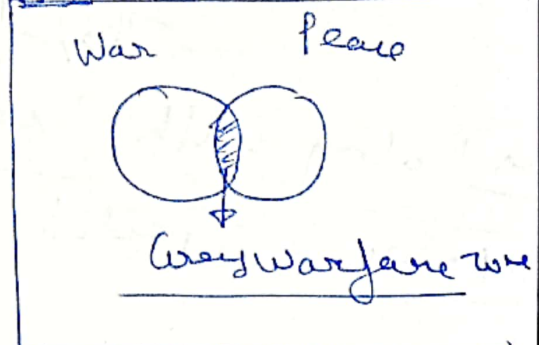
- i) Enhances intelligence gathering,
- ii) online monitoring of terrorist and militant
- iii) Enhances tactical capabilities
- iv) Put checks on cyberattacks

B. Grey warfare zone

- i) Tackling social media propaganda

ii) China against India

fig. GW zone



ii) helps in strengthening deradicali-
sation measures — (C9). Operation
Matsurya by I.B

iii) Act as a force multiplier to
enhance posturing against cyber
attacks.

iv) curb-misinformation against
army in fragile region like
Jammu and Kashmir.

Issue

- ① Network vulnerability
- ② Botnet cleansing is below
par level
- ③ Poor intel integration

WayForward

- ① Cybersecurity training
under KAVACH 2.0
- ② Enhance capacity
building
- ③ Early detection of
such attacks.

In, all this regard,
recommendation of Gulshan Rai
committee can help in developing
robust cybersecurity capability.

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)

BSF guards international border between India - Pakistan and India - Bangladesh.

Necessity to increase jurisdiction of BSF

A). Along Indo-Pak Border

(i) Drug trafficking

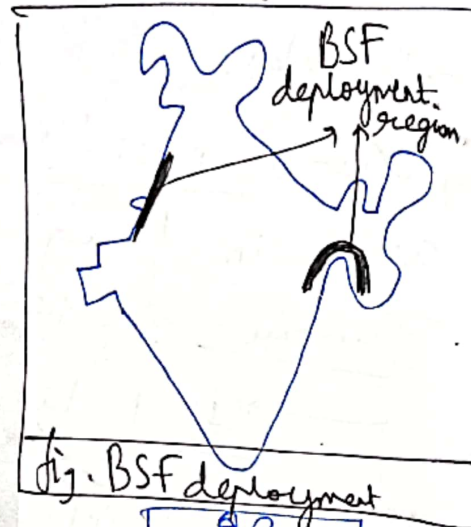
↳ proximity to golden crescent

(ii) infiltration has increased along border

↳ (eg). Recently, 7 Pakistanis were arrested in Rajasthan

(iii) Non-traditional threats → like UAV attacks

(iv) Rise in tensions between India-Pak after Poasi and Aravtrag incident



B). Along Indo-Bangladesh Border

- i) Smuggling → human trafficking, drug smuggling etc.
- ii) Porous nature of border — leads to mass and mixed influx.
- iii) illegal immigration — poses threat to demography in Assam
- iv) Rise in anti-social activities by immigrants
- v) Arms smuggling to insurgents in North-East

Issues →

- 1) Federal issue → state like W.B objects against it
- 2) Poor security building cannot make up by judicial enhancement

Need is to follow recommendation of Hooda committee and Madhukar Gupta committee to enhance border security along such international borders.

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 '24
unemployment rate is about 3.1%.

This acts as a deterrent to economic growth.

Concept of structural unemployment

of unemployment owing due to lack of mismatch between skill demand in labour market and skill that labour possesses.

eg. w.r.t AI skills, India has about 60% mismatch in skills.
 (As per WEF report).

Relevance in current economic situation

1 Issue of jobless growth - where economic growth and employment growth are not in proportionality.

- 2) lead to middle income trap of economy - largely due to structural unemployment.
- 3) leads to manufacturing stagnation
 ↳ stagnant at about $\boxed{15-1.}$ % GDP.
 ↳ unable to get semi-skilled & high skills labour.
- 4) service sector like IT dominated by high skills but only $\boxed{< 10-1.}$ % workforce possess it.
- 5) can lead to high fiscal deficit - since low skills $\Rightarrow$ high poverty
- 6) Agriculture - $\boxed{42-1.}$ population is employed $\rightarrow$ showcases low skills prevalence.
- 7) India skills report, 2023 $\rightarrow$ $\boxed{> 50-1.}$ % degree holders are unemployable.

Need is to have inclusive job growth policy

- ①) Ashok Dalwai recommendation
 shift to Non-farm and High Value crops.

- ② Enhance technology integration in PFI to augment jobs — as suggested by R. Senguttuvan committee.
- ③. Increase manufacturing capability which can augment job growth
- ④. Reforms in VET (Vocational educational training) institute is needed as only 10.1% graduates under PM-Kaustubh Yojana got placed (ES/24)
- ⑤. Increase Academia-industry collaboration to develop high skills to leverage emerging technology.
- ⑥. Support startup ecosystem to have inclusive job growth.

Thus, for inclusive economic growth, structural unemployment needs to be tackled to achieve inclusive ~~economic~~ job growth.

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

(15 अंक, 250 शब्द)

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

(15 marks, 250 words)

MSME contributes about 30% in GDP and can act as promoter of inclusive growth.

Role of MSME in fostering regional growth in India

- 1) Support to local industries
↳ (eg). Lizzat Papad business, Village Achhar etc.
- 2) Augment local skill capability
↳ helps in becoming 'job generator' rather than 'job seeker'
- 3) Promotes women SHG based development that bridges the gap between various region - (eg). Jaymaa Ambre SHG in Jabalpur (M.P.)
- 4) Primary and secondary food processing is support by leveraging PM-FME schemes.

- 5) Helps in 'Vocal for local' and 'One district one product' promotion.
- 6) Brings best practice from Tier 1 cities to Tier 2 and Tier 3 cities.
- 7) Enhances credit facility through institutional lenders.
- 8) Credit subsidy support via CATMSE
- 9) Promote district as export hub (DESH) via 'Ubharte Sitare Program'

MSME help in achieving :-

(A). Industrial diversification :-

i) By building industry close to rural area → proliferation of food processing industry, beedi making industry etc.

ii) Promotes manufacturing industry like cotton textile in Malwa (M.P)

iii) Promotes 'Rural tourism industry' - that augments local income.

iv) Enhances productivity of factor of production

N7 MSME act as bridge between giant company and local company.

(eg) cotton yarn by locals, textiles by Raymond.

⑤. Technological advancement

i) Via Technological transfer - brings efficiency in manufacturing capacities.

ii) Eases production line by adopting automation like SCADA.

iii) use of solar charkha in local khadi promotion.

iv) Digital penetration via mobile apps to leverage online market, especially ONDC and e-NAM.

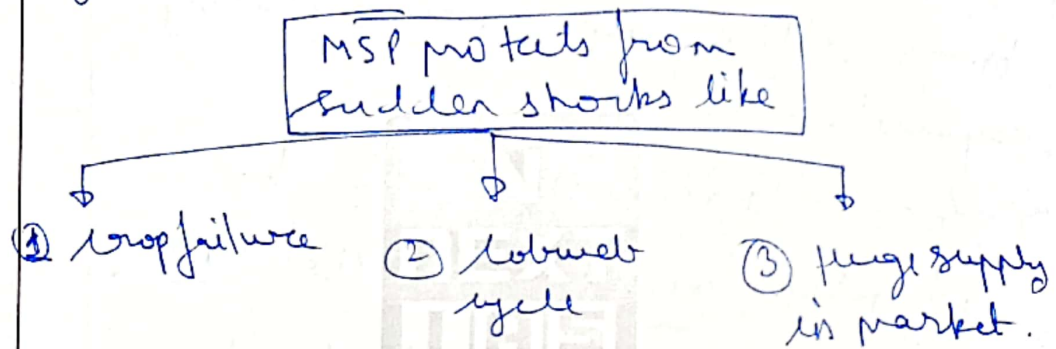
Further, we can leverage

U.K. Sinha Panel recommendation on MSME can help in further enhancing MSME's role as inclusive growth

promoter

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 प्रभावित 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 (MSP) is a market intervention scheme by government to protect farmers from distress sale.



Legalisation of MSP :-

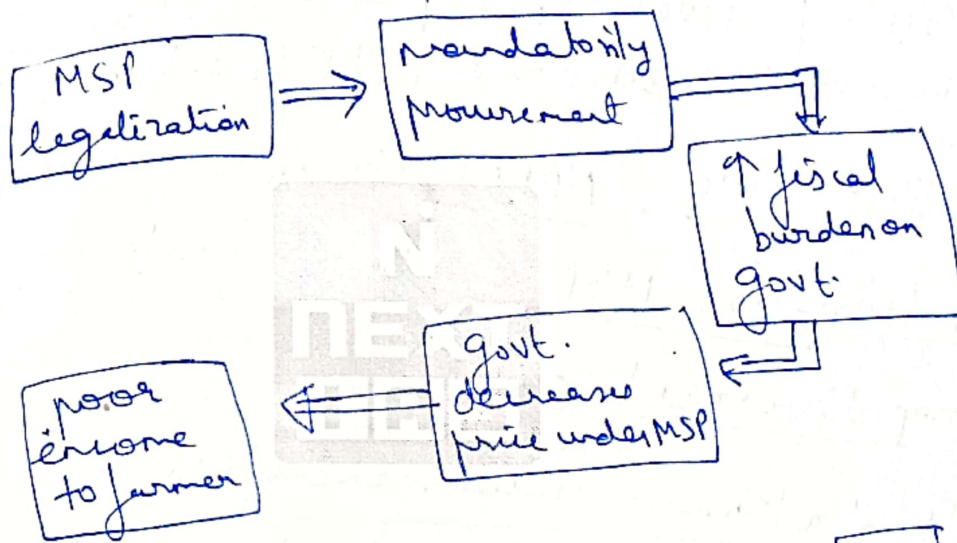
Positives :-

- ①. Promote crop diversification
- ②. Eliminate middlemen from APMC
- ③. Prevent farmer from distress sale.
- ④. Income augmentation of farmer.

However, legalisation of MSP has several issues associated

Negatives

- ①. Huge burden on Budget — to procure 22 crops + sugarcane (under FKP)
 ↳ Economic survey estimates 90-1% of Budget amount will be required.
- ②. Harm to farmer itself :-



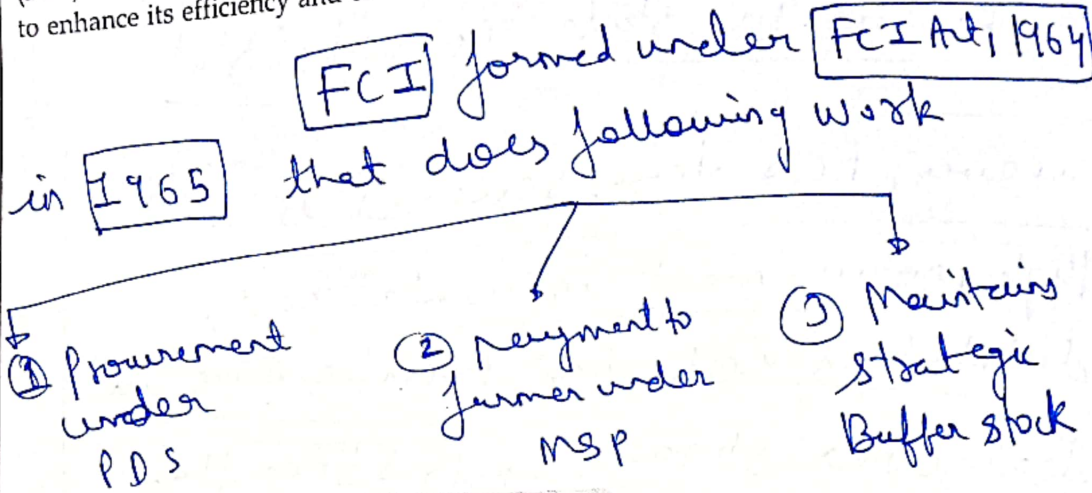
- ③. Not a panacea — as only 6-1% of farmers gets MSP benefit.
- ④. MSP is not a solution as underlying issue in agriculture productivity are big concern.
- ⑤. Poor diversification can lead to inflation, if MSP legalised.

Need is to have several reforms in MSP led procurement

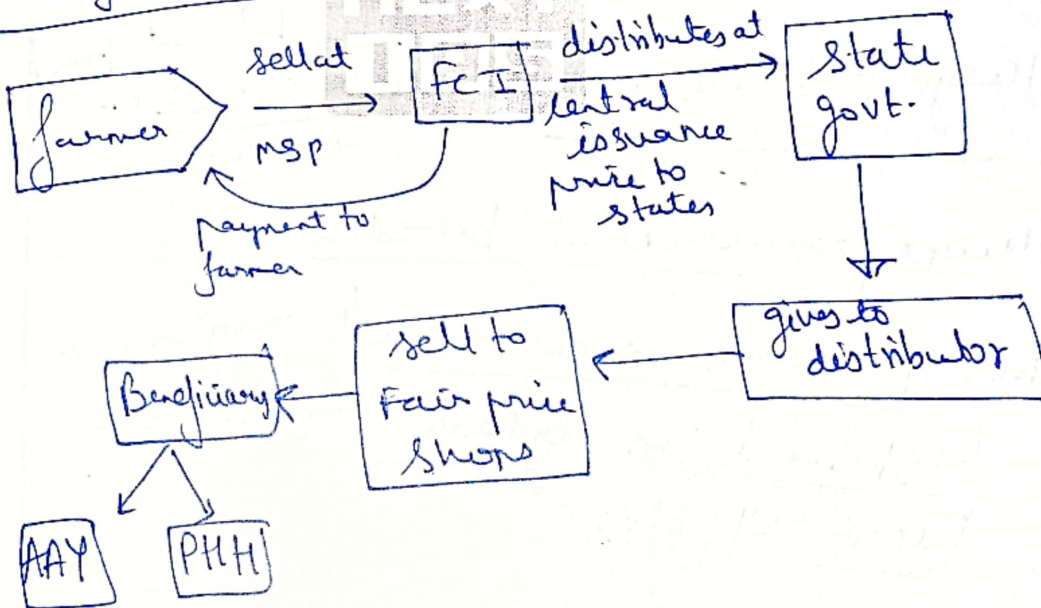
- 1) Use of Price-deficiency payment system - like M.P state - Bhavantar Bhugtan Yojana.
- 2) Diversify procurement under MSP
↳ use of Private entrepreneurial guarantee scheme (PEG scheme)
- 3) utilise CWC, NAFED etc in procurement
- 4) Rationalise MSP - to promote crop diversification.
- 5) Shanta Kumar recommendation to have robust procurement plan.

Thus, we need to utilise recommendation of 'Swaminathan committee' on MSP to make it more effective, rather than legislating it.

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)



Role of FCI in PDS to ensure food security



- ① Procurement at MSP from farmers →
prevent farmer from distress sale.
- ② Maintains strategic buffer reserves
to mitigate future food inflation.

- (3) Issuance to state government under PDS (NFA-2013)
- (4) Does transportation of food grain from surplus state to deficit state.

However, FCI faces several issues

- (1) High procurement incidental cost, distribution cost and maintenance cost
- (2) Food over storage $\rightarrow$ 3.5 times than buffer norms.

	Need	@ Present
Wheat	75	250
Rice	115	400

 (in lakh tones)
- (3) Huge food wastage $\rightarrow$ about 0.02 L cr amount.
- (4) Huge procurement burden
- (5) Poor presence in across all region skewed in certain regions like West-UP etc.

Various reforms needed in FCI

- (1) Shanta Kumar committee recommends
 - (a) Use of private for procurement.
 - (b) FCI should do procurement

only in those area where procurement is highly inadequate.

- ① Revise Buffering norm of FCI
- ② Timely release of subsidy to FCI to prevent off budget borrowing
- ③ Use of technology like dehumidifier and automated temperature controller for storage.
- ④ Scientific storage method
 - avoid plinth and tarpauline storage
 - use of silo bags
- ⑤ Further, for more efficiency and effectiveness → capacity building in effective management is needed.

Thus, we need to have sweeping reforms in FCI to enhance effectiveness in food security.

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)

Nano technology is which, utilises particle of nano size, generally ranging from 1-100 nm.

Role of Nano technology in :-

(A). Enhancing Agricultural productivity :-

- ① use of Nanobots to study soil structure, pH level etc.
- ② use of Nano sensors for measuring soil moisture
- ③ use of Nanofertiliser for precision farming (eg). Nano Used by IFFCO
- ④. Use of Nano fabricated sheet in polyhouse construction
- ⑤. Use of Nano particles like gold to measure presence of insects in vegetables.

⑥ Nanobot can help in increasing water use efficiency and Nitrogen use efficiency.

⑦ Enhancing food security:

① Use of silver nanoparticles to test quality of food items

② Nanobots can help ensuring effective storage by cleaning the storage area. specially required for perishables.

③ can make supply chain more resilient.

Various recent development and Potential benefit

① Nano-urea by IFFCO

4 can replace urea (45 kg bag) by 500 ml bottle.

→ precise application → increases Nitrogen use efficiency.

- ② Nano DAP → can decrease input cost to farmers (at present 50 kg bag of DAP cost around ₹400).
 → can augment income of small & marginal farmers (88% of total farmers).
- ③ Coated urea → urea coated with sulphur
 ↓
Practical → increases effectiveness in solubility.

Various risks associated are :-

- ① Pesticide poisoning → of total deaths globally — 60-1% in India.
- ②. Biodiversity destruction → Since pollinators will die → lead to damage to agrobiodiversity
- ③. can disrupt food chain
- ④. leaching of chemical into groundwater table.

However, Nano Urea & Nano DAP has large benefit and thus with proper confidence building measures and field trials, they should be leveraged effectively.

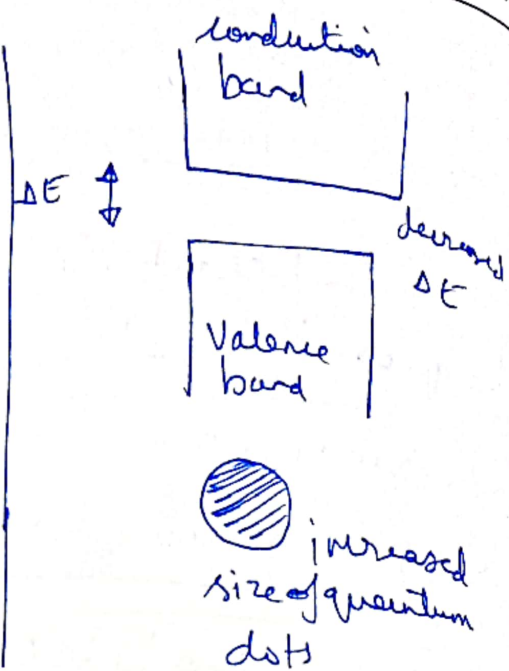
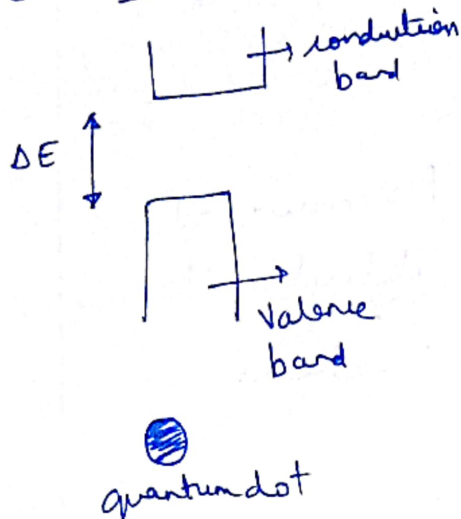
6. 2023 का भौतिकी का नोबेल पुरस्कार क्वांटम डॉट्स के संश्लेषण की खोज के लिए एकिमोव, ब्रस और बावेन्डी को संयुक्त रूप से दिया गया। इस संदर्भ में क्वांटम डॉट्स के अनुप्रयोगों पर चर्चा कीजिए। (15 अंक, 250 शब्द)
The Nobel Prize in Physics of 2023 was jointly awarded to Ekimov, Brus and Bawendi for the discovery of synthesis of quantum dots. In this context, discuss the applications of quantum dots. (15 marks, 250 words)

Recent, Nobel Prize award for quantum dots, highlights its promising nature of application across various area.

Quantum Dots: concept

- ① When particles reach to nano scale — the valence shell distance from nucleus decreases.
- ②. Smaller size of atom → lead to change in electron presence from shell to another under exposure of adequate energy.
- ③. With varying λ (~~to~~ Energy (E) of light, ' λ ' (wavelength) varies, which gives distinct colour.
- ④. Further, as size of quantum dot decreases → the wavelength emitted reaches to violet (i.e. lower side)

⑤. Small size



Various application areas of quantum dots :-

①. Q-LED TV

↳ that have smooth pixels and great viewer experience

②. Healthcare industry

↳ as indicator of transfer of drug to its targeted site

③. In laundry industry

↳ for effective cleaning

④. In fashion industry

↳ to have colourful costumes.

⑤. Act as indicator of adulteration
in food industry

↳ (eg). with high temperature color
change occur, that can indicate
presence of ethylene dioxide

⑥. Can be used as disinfectant
in handwash & soaps.

Thus, quantum dots
holds immense benefit across
various fields for humanity.

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)

Under Wildlife Protection Act, 1972 various protected areas are highlighted like National parks, wildlife sanctuaries, conservation reserve etc.

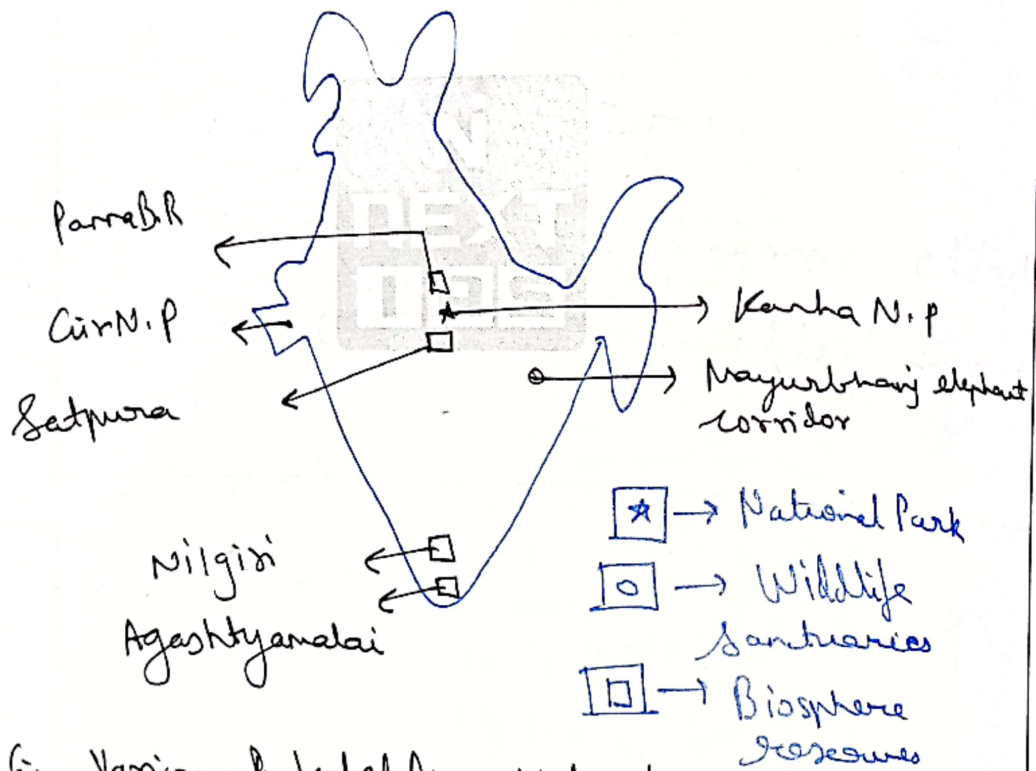


Fig. Various Protected Area Networks.

Role of protected areas in Biodiversity conservation

- ① Protecting genetic biodiversity —
- (eg). Nauradehi Wildlife sanctuary
 - (eg). Dolphin sanctuary (Bihar)

② Protecting species under threat to extinction → (eg) Project tiger lead to rise 1 tigers to 36,82 at present (ISFR)

③. in situ biodiversity conservation by habitat protection under Tiger reserve → (eg). Periyar T.R

④. Protects food chain of animal for its effective development (eg). Narsim Wildlife sanctuary

Effectiveness of

①. National Parks :-

Positive

→ Helps in biodiversity conservation of
Near to extinct
species like
↓
Tiger, Rhinoceros.

Negative

→ development projects poses
New threat
to National Parks.

⑧. wildlife sanctuaries

↳ helpful in conserving specific species and its habitat.

↳ (eg). Aerial wildlife sanctuaries
(Chambal, Morena)

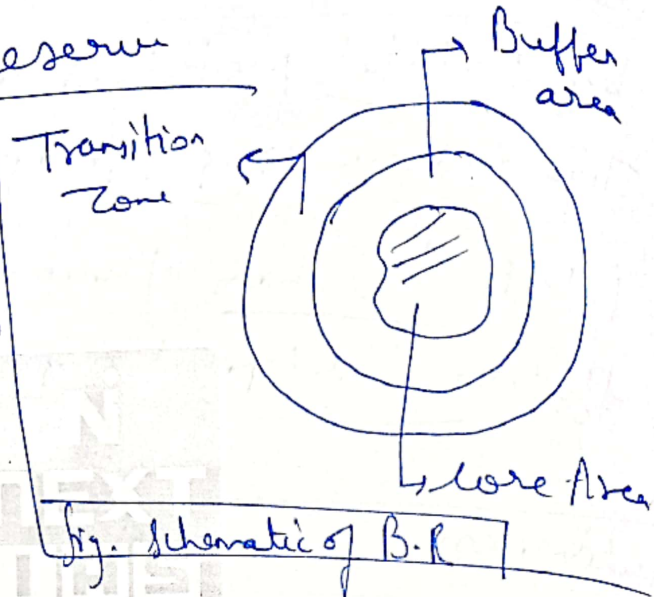
⑨. Biosphere reserve

↳ under
UNESCO-MAB

program

↳ it protects species,
its habitat,

promotes tourism, research and
development



(eg). Nilgiri Biosphere reserve,
Sold desert Biosphere reserve

Thus, Protected Area
Networks had been immensely
successful in protecting Biodiversity.

18.

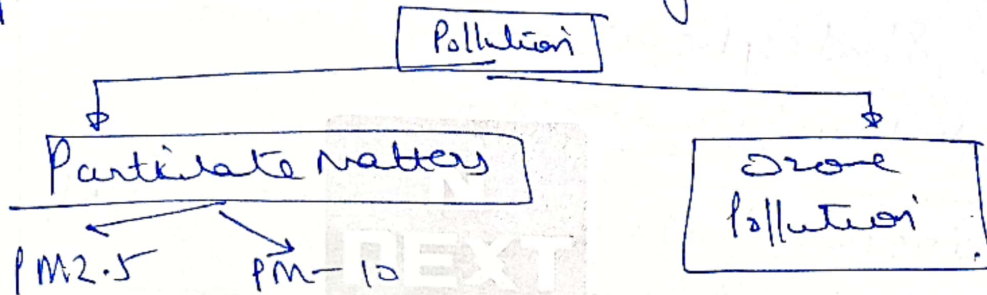
भारत में पार्टिकुलेट मैटर (PM_{2.5} and PM₁₀) और ओजोन प्रदूषण के उच्च स्तर होने के क्या कारण हैं? पार्टिकुलेट मैटर और ओजोन प्रदूषण को कम करने के लिए सरकार द्वारा किए गए विभिन्न प्रयास कितने प्रभावी रहे हैं?

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

(15 अंक, 250 शब्द)

(15 marks, 250 marks)

Delhi is the most polluted capital city in the world and as per World Air quality report of 100 most polluted cities - 63 are from India.



Reasons for high level of pollution :-

(A). Particulate matter

(a) Stagnant wind system over North India during winter. (4)
Delhi - NCR

(b). Unabated vehicular emission

(c). Shuttle burning in Punjab, Haryana region

(d). Unchecked industrial emission

B. Ozone pollution

(a) formation as secondary pollutant
via reaction as:-



- (b) largely from industry unchecked
chimney based release of pollutant.
- (c) Reaction of NO_3^- with O (O radical)
— leads to ozone depletion
- (d) Stratospheric ozone from
vehicular emission.

Effectiveness of various measures to put
check on ozone and PM

i) National Clean Air Program

Aim → to decrease PM by 40-1 by 2025-2026
as compared to 2019 level.

Issue → still average PM level is
58 $\mu\text{g}/\text{m}^3$ as opposed to
WHO → recommended 5 $\mu\text{g}/\text{m}^3$

ii) odd - even rule in Delhi NCR

Success → check on unabated use of
private vehicle.

Issue → loopholes like having dual
number plates makes it ineffective.

iii) formation of commission for air quality management

Aim → to put check on PM and Ozone pollution in Delhi-NCR

Issue → various federal tussle and contradicts with CPCB role.

iv) GRAP - Graded response Action Plan

Success

• to put check on LMV and truck emission

• restricts public burning of solid waste

Limitation

• ineffective implementation

• Ozone level increase to very high during winters

Way forward

→ ① hokur committee → to put check on stubble burning

→ ② NAT directives on banning diesel car

→ ③ Promote green transition (eg) H-CNG bus in Delhi

→ ④ sustainable agriculture

Thus, to ensure 'right to live in a clean environment' (Art 21), we need concerted effort to tackle pollution.

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)

Recently, huge of drugs were seized from Mumbai port which highlights growing menace of drug trafficking in South Asia and India in particular.

Growing drug menace in India

①. Proximity to Golden Crescent & drugs in Punjab, Kashmir valley etc.

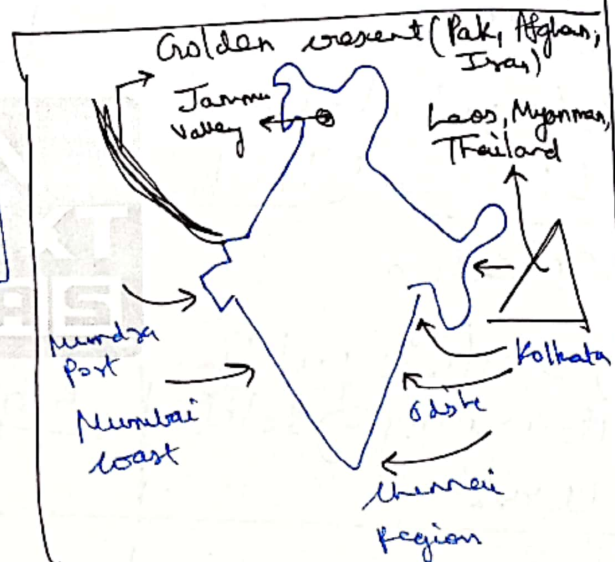


Fig. India and drug trafficking regions.

② Proximity to golden triangle → drugs in N-E region, east coast and Bengal.

③. Via maritime domain — (eq) Chennai and Kerala coast.

Various dimension of drug menace :-

1) Security :-

- (i) lead to unorganized crime growth
- (ii) LWE, insurgency and military proliferation
- (iii) enhanced funding to terrorist

2) Economic dimension

- (i) Black marketing and Black money act as blow to Indian economy
- (2) further, leads to counterfeit currency
- (3). revenue of govt. is compromised.

3) Social dimension :-

- (1) child consumes drug - (eg).
Punjab region
- (2) child delinquency
- (3). social unrest

4) Political dimension — strengthen nexus of politician, criminal and bureaucrats (as said in Vohra committee)

Multi-pronged approach to deal with it

1) Enhance maritime security

↳ use of lidar & radar to detect submarines doing hacking

↳ enhance coast guard capability.

2) Ports authority needs to be more vigilant

3) Enhance border security as stated in

(Madhukar Gupta) committee

4) Integrated check post as stated in Shetkar committee

5) Rehab. system for drug addicts

6) Further, agency of socialisation like family and education system has to be more vigilant.

7) Effective policy to curb drug menace

Thus, use of [NDPS] as hard approach and use of dialogue to reduce intoxicant consumption can enhance India's security against drug menace.

10. 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/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)

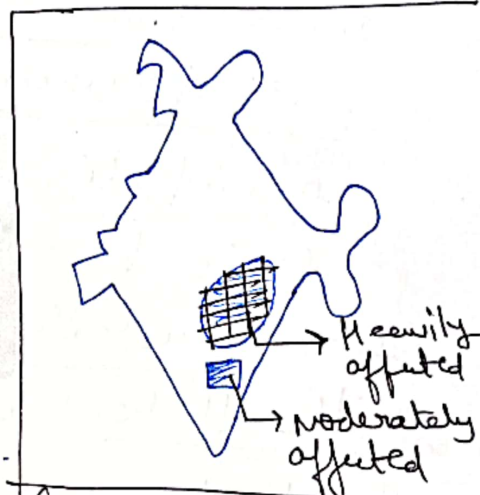
As per Ministry of Home Affairs,
Naxalism has decreased from 106 district
to 90 district and in worst affected areas -
from 36 district to 30 district.

However, to solve it
both soft and hard
approach is needed

I Soft Approach:-

(A). Socio-economic policy:-

- (1). Increase literacy level in areas like Dantewada etc.
- (2). Promote connectivity to mainstream areas like Bhilai etc.
- (3). Enhance access to healthcare
→ modify PM-JAY for better delivery
- (4). Promote skill development and entrepreneurial mindset - eg.



PM- Vishwakarma and PM- Karshak Vikas Yojana

⑤. Promote community cohesion via community policing norm.

B Dialogue as a solution

1. Effective talk via Anulaj Jan Surwai
2. Deradicalisation step like - 'Op. Chakravartih' by I-B
3. Administrative - itinerary talk needs to be enhanced. [eg].
IAS Saurabh Kumar - 'Kush with collector' in Dantewada (C.G.)
4. Sensitisation and awareness
5. Utilise 'bottom-up' policy making power.

Perhaps, Hard security measures are also needed to tackle Naxalism

1) Modernisation of police - to have effective weapon, capacity and training skills.

27 Develop effective counter attack capabilities.

37 Leverage emerging technology for enhanced security measures — like GPS, GIS, thermal imagers & facial recognition technology.

47 Utilize drone for surveying

57 Develop fortified police station in Naxal hit areas like Balaghat etc.

67 Utilisation of 'Narash Chandra Task force' recommendation of enhanced capability.

7) Operations like 'operation greyhound' can be helpful.

Thus, to tackle LWE, we need SAMA DHAN strategy which encompasses both hard and soft approaches.