

NEXT IAS

GS PRELIMS TO MAINS 2024

(To be filled by candidate)

TEST CODE : PM2403

Test No. : 03

Name of Candidate: Himanshu Singh Mobile No.

Roll No. : ML24FLTON005 Start Time 10.00 End Time.....

Date of Examination: 21-07-2024 Medium : English ☒ Hindi ☐

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
TOTAL MARKS - 100		

Q. No.	Maximum Marks	Marks Obtained
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	
TOTAL MARKS - 150		

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 20 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:

FOR OFFICE USE ONLY

<u>Student Concerns / Query</u>	<u>Evaluator's Feedback / Response</u>
1	1
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2	2
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3	3
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<u>MARKING SCHEME *</u>			
Marks Per Ques	Below Average	Average	Above Average
10 Marks	Below 3.00	3.00 - 3.75	4.00 and above
15 Marks	Below 4.50	4.50 - 5.75	6.00 and above

* Subject to change without prior notice.

<u>IMPORTANT QR CODES</u>	
 Topper's Copy	 Common mistake and Correct Filled QCAB
 Copy Scanner App	 Next IAS Test Centre Location

MACRO COMMENTS

The Purpose of evaluation@nextias.com is to provide constructive suggestions on 'How to improve Answer Writing and thereby score better marks.'

STRENGTHS OF THE CANDIDATE

AREAS OF IMPROVEMENT



IMPROVEMENT SUGGESTIONS

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_(FD) in year 2023-24 stood at 5.6% of GDP which is way above threshold limit of FRBM act 2003.

$$FD = \text{Revenue} - \text{expenditure except borrowings.}$$

Factors contributing to high fiscal deficit

- ① Revenue shortfalls and low tax to GDP ratio. In previous financial year, tax to GDP ratio was 11.6% (6% direct taxes, 5.6% indirect taxes)
- ② Low tax base and tax buoyancy (only 4% people in India pay income tax)
- ③ Spill over effects of COVID-19, Supply chain disruptions due to Russian-Ukraine war, Israel-Hamas conflict
- ④ High social expenditure and revenue expenditure due to

previous tax liabilities.

eg Public debt to GDP ratio was 81.0% in 2023-24.

- ⑤ Slow rate of disinvestment
eg In 2023 only 10,000 crore disinvestment was made possible (Target 51,000 crore)
- ⑥ Long gestation capital projects and rise in capital expenditure in recent years (currently 11% is capital expenditure)
- ⑦ Tax evasion and round tripping

Measures to ensure fiscal consolidation

- ① Adherence to N.K Singh committee recommendations
- ② Signing DTAA agreements and global tax minimum rate
- ③ Dealing with tax heavens.
- ④ Promoting digital economy and financial inclusion.

High fiscal deficit can put India into reach of external shocks, hence fiscal prudence is required by implementing above suggestions.

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)

GFCF in year 2023-2024 stood at
(investment)
55 lakh crore which is way below
desired value.

Potential of capital investment

- ① Economic boost $\Rightarrow$ Can ensure high economic growth
i.e According to India's potential $\approx 10\%$.
- ② Technological $\Rightarrow$ Capital investment can promote innovation and achieve India's vision of global leader in technology.
- ③ Infrastructure $\Rightarrow$ PPP models to provide world class infrastructure and hence reduce logistics cost (currently 13-14% of GDP)

- ④ Inclusive growth $\Rightarrow$ Creating employment and raising standard of living.
- ⑤ Skill development $\Rightarrow$ Skill development and vocational training of Indian youth (currently only 5% are formally skilled - Skill India report 2023).

Challenges $\Rightarrow$

- ① Regional disparities in well being and human development indicators.
- ② Policy paralysis and bureaucratic challenges.
- ③ Savings not manifesting into investment due to risk of external shocks.
- ④ Awareness about Indian stock market and vulnerabilities
eg Post election results market crash.

Capital investment provides a window of opportunity to assure India's vision of Vikshit 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)

Peri-agriculture refers to growing vegetables, food crops and other cereals in backyards, gardens, rooftops in urban areas. It has gained pace in recent times.

Opportunities of peri-urban agriculture:-

- ① Ensuring food security in wake of climate change while also ensuring nutritional security.
- ② Fresh vegetables and food crops which will enhance health of individuals.
- ③ Economic growth and link to supply chains.
- ④ Promotes circular economy while also ensuring usage of space and promoting environmental benefits.
- ⑤ Reduces effect of urban heat Island.

Challenges associated →

- ① Water stress → ~~Causing~~ Growing
water scarcity
in urban regions
eg Delhi water crisis
Bengaluru water crisis
- ② Lack of awareness on part of individuals
for proper use of seeds, fertilisers. etc.
- ③ Lack of spaces and risk of encroach-
ment for this purpose.

way forward →

- ① Setting up nurseries for crop enhancement
and efficiency.
- ② Promoting vertical agriculture → Hydroponics
→ Aeroponics.
- ③ ~~Grey water~~ Grey water recycling
by using water for crops.
- ④ Spreading awareness about usage of
fertilisers & pesticides.

Hence, Peri-agriculture provides an
opportunity for food security while also
ensuring sustainable development.

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 producer of pulses in the world yet it imports majority of its needs from countries like Canada, whereas vegetable oils are imported from Ukraine and Southeast Asian nations.

Major challenges to achieve self sufficiency in pulses and vegetable oils

- ① Reducing area under cultivation of pulses and vegetable oils.
i.e. Cereals ~ 45% area, coarse ~ 10% cereals
Pulses ~ 15%
oil seeds ~ 10%
- ② Climate change as an amplifying force; Since 5% of area is only irrigated rest is rain fed.
- ③ Low level of mechanisation (~40%) and marginal farmers (~86% are marginal farmers) which challenges economies of scale and economies of scope.

- ④ open procurement under MSP regime of wheat & Rice promoting mono-culture practices.
- ⑤ Govt. policies such as reactionary banning of agricultural exports also amplifies the problem.

Measures to address the challenges :-

- ① Govt. policy $\Rightarrow$ ending open end procurement of cereal crops and rationalising MSP regime.
- ② Increasing farm mechanisation (eg china has 60% of farm mechanisation)
- ③ Promoting institutional credit and micro-irrigation techniques.
- ④ ^{Promoting} Cooperative farming since ~~avg~~ average land holdings in India is 1.08 hectare.
- ⑤ Reforming APMC's and promoting FPI's.
- ⑥ Implementing Dalwai committee recommendations.
Strengthening PACs while also leveraging technology like Nanotechnology, biotechnology is the way forward to achieve self sufficiency in pulses and oil seeds.

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

Scheme for biomufacturing and bio-foundry was launched in interim budget 2024-25.

Bio-manufacturing → Bio-manufacturing refers to use of biotechnology to manufacture living organisms for their potential use.

Bio-foundry → is combination of automation with bio-manufacturing.

Potential of Bio-manufacturing & Biofoundry

- ① Economic growth → India's role as leader in Bio-manufacturing and increase in biofoundry techniques.
- ② Bio-pharma → use of Bio-manufacturing to manufacture state of art drugs and push to India's pharma sector.



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)





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 was launched by Ministry of power to realise the objectives of Kyoto protocol 1997.

Key features of CCTS, 2023

- ① Launched by - ministry of power.
- ② Carbon credits to be issued by BEE
- ③ Carbon credits to be traded at CCTS.
- ④ Setup a regulatory framework and role of power secretary in states.

Potential for mitigating GHG emissions in India

- ① Integrate India with world's carbon credit trading market.
- ② Ensures compliance on part of industries and manufacturing companies.

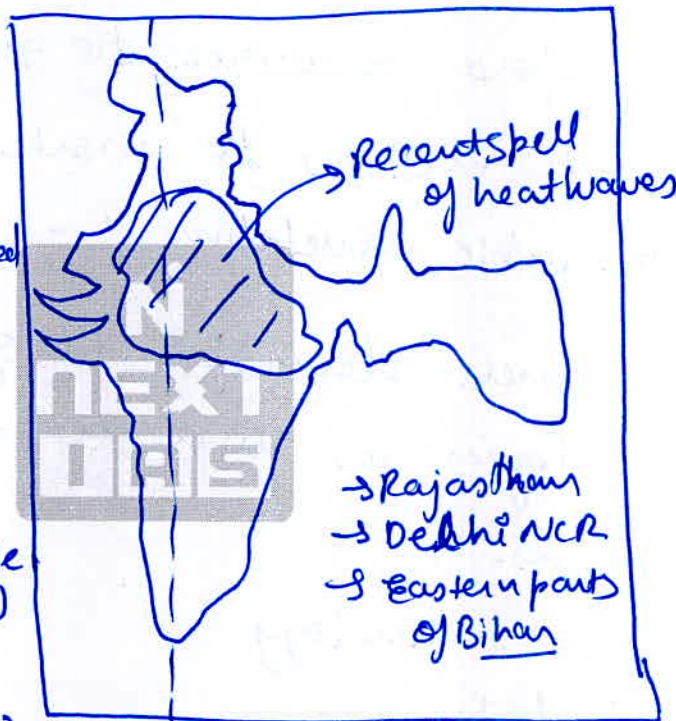
- ③ Address regional disparities and other shortfalls by applying a holistic measure.
- ④ Can significantly reduce GHG emission with risk of compliance cost.
- ⑤ Transfers resources to govt. from corporate entities to work towards sustainable development.
- ⑥ Enhances development of cleaner technologies as well as ~~promotes~~ its adoptions.
eg Solar technology
wind power.

Carbon credit trading scheme along with govt. efforts can promote cleaner energy technology to ensure India's sustainable development.

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)

WMO defines heat waves as, increase in average temperature of an area by 5°C above its normal temperature.

Heat waves in recent have increased in intensity (reaching 47°C in northern plains) frequency (multiple spells) and duration (over April, May)



Causes of heat waves →

- ① Climate change and global warming.
eg Increased global temperature by 1.2°C (IPCC AR6)

- ② Urban heat island effect caused by vehicular exhaust, concrete jungles etc.
- ③ Deforestation and encroachment of water bodies.
- ④ EL-Nino and negative Indian ocean dipole impacting Indian monsoon.

Heat waves to be included in DMA, 2005

- ① Better compliance and swift response eg Disaster relief mechanism.
- ② Early warning system and better funding for risk reduction.
- ③ Increased awareness on part of citizenry.

way forward → Restoring water bodies
→ Green spaces
→ Afforestation and re-forestation
→ Geo-engineering techniques
→ use of artificial rain using silver iodide.

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

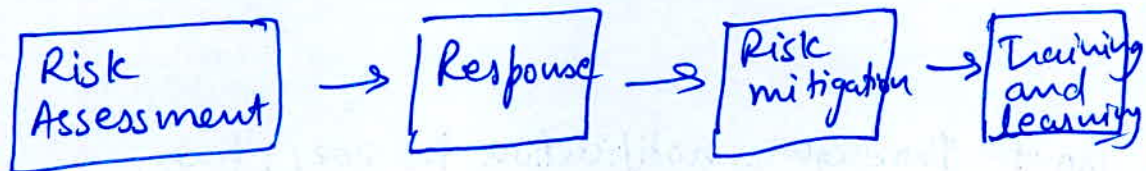
Recently formulated 'joint doctrine for cyberspace operations' by Indian armed forces will lead to strengthening of the cyber-security posture for both conventional operations as well as gray zone warfare. Examine. (10 marks, 150 words)

According to IT act 2008, cyber security refers to protecting computer, software, its data and country's critical infrastructure from potential cyber attacks. In this light Indian armed forces have formulated "joint doctrine of cyber space."

Need for joint doctrine on cyber space

- ① Increasing attacks — Ransomware report has highlighted govt. offices suffer from 68% ransomware softwares in computers.
- ② Portulans Institute has ranked India 61/131 countries on cyber security preparedness.
- ③ Post COVID-19, There has been an increase in cyber crimes, cyber threats.
eg meitY says India faces 37,000 cyber attacks per day.

Joint doctrine on cyber space $\Rightarrow$



Issues with cyber security architecture is

- ① Lack of data localisation have security and diplomatic implications.
- ② Import dependence on china for communication technology
 $\Rightarrow$ India imports 80% of telecom devices from china.
- ③ Lack of awareness on part of citizenry i.e knowledge about VPN, data analytics etc.

Other govt. efforts $\Rightarrow$

- $\rightarrow$ NCII PC (National critical information infrastructure protection centre)
- $\rightarrow$ National cyber security policy 2013
- $\rightarrow$ Cyberdome, CyCore
- $\rightarrow$ Cyber suraksha Kendra.

Leveraging technology such as quantum computing and AI is required to mitigate the risk of cyber crimes.

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)

Govt. Through a notification in 2021, has increased and uniformised BSF jurisdiction to 50 km area close to borders.

Necessity

- ① Use of technology such as drones and space balloons by cross-border terrorist
- ② Immigration → mass and mixed immigration eg Influx from Bangladesh
- ③ Drug trafficking as closeness to Golden Crescent and Golden triangle has made India both a destination and transit hub
- ④ Human and animal trafficking - Across Bangladesh border.
- ⑤ Rise in no. of overground workers along borders and proxy wars.



- ⑥ Fake Indian currency notes and other logistics support to terrorist and insurgent groups.

Issues surrounding the extension of BSF

- ① Federal issues $\Rightarrow$ BSF and other CAPF comes under union list causing friction in the relations.
eg West Bengal issue.

- ② Social apathy $\Rightarrow$ among border communities

- ③ Lack of information sharing and coordination

way forward $\rightarrow$ Community policing
 $\rightarrow$ Information sharing with local police force enforcement agencies
 $\rightarrow$ Development of border infrastructure
 $\rightarrow$ Empowering local self govt. institutions along borders.

Govt. efforts such as ~~not~~ vibrant villages programme, Border area development programme and integrated check post along with security forces and technological advanced can ensure national security.

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)

According to PLFS 2023, unemployment rate in India stood at 3.1% and India's growth forecast for 2024 is 7%.

Structural unemployment →

Employment that arises due to infrastructural bottlenecks and skill gaps.

Relevance in ~~the~~ content of India's current economic situation

① Low skill and vocational training →

According to Skill India report 2023 only 5% people in India have undergone a skill or vocational training (~~South~~ South Korea ≈ 96%, USA ≈ 82%)

② Low level of education →

Only 45.6% of ^{educated} Indians are considered employable (Skills India report)

- ③ Infrastructural bottlenecks such as high logistics cost (13~14% of GDP) and delayed infrastructure projects.

Policy measures to promote inclusive growth

- ① Academic-industry linkage → Making internship mandatory and learning from best practices around the globe eg Canada
- ② Vocational training → setting up institutes for upskilling and reskilling of Indian youth.
- ③ ^{Increasing} ~~Expenditure~~ Expenditure of welfare measures such as healthcare, reducing child stunting. (currently 35%)
- ④ Women led development, and gender centric policies to increase LFPR (currently female LFPR $\approx$ 43% (PLFS))

⑤ Bridging regional disparities and Infrastructural gaps.

eg extending Sagarmala, Bharatmala to North East.

leveraging Internal waterways for logistics.

⑥ Promoting MSME and other sectors that can readily absorb Indian youth.

⑦ Addressing disguised and voluntary unemployment by raising quality of jobs.

Govt. efforts

① MSME's → Ramp, ECLGS, PLI scheme

② Skill development → National Skill development mission
PMKVY, Skill India

③ Housing → PMAY-U and PMAY-S

④ Startups → Stand up India,

A complete overhaul of India's education system and job market is required to promote Inclusive growth and achieve goal of Ekl Bharat, Shreshtha Bharat.

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 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 share a significant portion in GVA (~23%) ~~and~~ in manufacturing sector while also providing employment to (~13 crore) individuals.

Role of MSME's in fostering regional growth

- ① Mobilising local savings and turns them into investment.
- ② Promote local artifacts and other traditional items such as textiles, handicrafts
- ③ Provide employment to local youth and skill training, ~~and~~ vocational education.
- ④ Bridge ^{regional} disparities i.e local knowledge to foster cooperation among local people.

- ⑤ Raising standard of living and reducing poverty and inequalities in wealth, and income.

MSME's in achieving industrial diversification

- ① Food processing ⇒ Food processing MSME's provide a window of opportunity for both boosting economic growth and absorbing low skilled labour.
- ② Technological innovations such as semiconductors, electronic items etc.
- ③ Boosting startup ecosystem
eg In textile industry
in waste to wealth plants.
- ④ Linkage with global value chains and promoting Indian exports.

MSME's in achieving technological ~~improvement~~ advancement

- ① MSME's in service sector promoting technological advancement such as data analytics, quantum computing, etc.

- ② Mobilising savings and bringing in FDI while also ensuring technology diffusion such as automation.

Govt. efforts to promote MSME's

- ① RAMP scheme for dealing with external shocks.
- ② SIDBI and ~~and~~ Mudra banks for providing loans.
- ③ Redefining MSME's and raising the cap.

eg Micro	investment 1 crore	turnover 5 crore
Small	5 crore	25 crore
Medium	100 crore	50 crore
- ④ All MSME loans are qualified for PSL norms.
- ⑤ ECLHS scheme for guarantee.

MSME's role is crucial in achieving growth in double digits while also providing quality jobs.

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)

Currently MSP is provided for 23 crops which is recommended by CACP and approved by CCEA. MSP helps farmers to address sudden price shocks arising out of externalities.

Arguments in favour of legalising MSP

- ① Enhance reach → According to Shanta Kumar committee only ~6% of farmers avail MSP, hence this will ensure a wider reach and cover more farmers while bridging regional disparities
- ② Increases awareness while also opens up legal measures if MSP is denied or the case of exploitation of farmers.
- ③ Enhance crop diversification, if MSP is rationalised
i.e. will promote ~~crop~~ intercropping,

Cultivation of millets, pulses etc.

- ④ Addresses political grievances and farmer distress (i.e. reducing farmer suicides)

Arguments against legalising MSP

- ① Financial burden $\Rightarrow$ Burden of MSP already spans in lakhs of crore while also its administrative cost will increase.
- ② Capital Investment $\Rightarrow$ Reduces govt focus on ~~and~~ increasing capital investment such as cold storages, transportation, drying yards.
- ③ Rising middlemen $\Rightarrow$ Ahatiyas are already a menace, ~~and~~ eating away rights of farmers while also increasing leakages.
- ④ Can promote monocultural practices if open ended procurement is continued.

Other measures that can be taken :-

- ① Price deficiency scheme → on the lines of Bhavanatar Bhugtan yojana of Madhya Pradesh.
- ② PPP model to enhance agricultural marketing.
- ③ Implementing model APMC laws.
- ④ Scheme of one state one license for wider reach and reduce exploitation of farmers.
- ⑤ Democratising APMC's while enhancing capital expenditure on storage facilities.
- ⑥ Village level procurement as suggested by Mahesh Kumar Jain committee.

Currently MSP is issued at 1.5 times the input price, increasing it to include family labour is the short term measure while also strategizing long term way forward.

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

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

Food corporation of India is a statutory organisation established in 1965. It overlooks and implements PDS under NFSA, 2013.

Role of Food corporation of India (FCI)

- ① Procurement → FCI is bestowed with functions of procurement of crops at MSP to farmers while also outsourcing it to states.
- ② Transportation → FCI transports the procured crops such as wheat, Rice.
- ③ Storage → FCI stores crops in FCI godowns while also maintaining buffer stocks.
- ④ Distribution → FCI distributes food grains to Ration shops on central issue prices.

Challenges in functioning of FCI

① Procurement $\Rightarrow$ Procurement is done ~~mostly~~ majorly in 3 states of Haryana, Punjab, U.P, hence causing regional disparities.

② Transportation $\Rightarrow$ leakages during transportation while also high logistics cost.

③ Storage $\Rightarrow$ outdated storage systems such as cover and plinth system damages food crops.

Also there is lack of cold storages and other warehouses.

④ Distribution $\Rightarrow$ leakages in distribution network, ~~many~~ cases of adulteration and low technological adoption.

Measures that can be taken① Shanta Kumar committee

- (i) Outsourcing procurement to states while also addressing regional disparities.
 - (ii) Rationalising PDS from 67% to 40%
 - (iii) Doing away with cover and plinth method of storage and inventing scientific methods.
 - (iv) End to end computerization to reduce leakages.
- ② Ensuring Nutritional security ~~with~~
i.e including coarse grains and food fortification.
- ③ PPP models of distribution and storage.

Rationalisation and Overhauling of FCI
of PDS
is required to achieve SDG 1, SDG 2,
SDG 3.

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 that branch of science which works on nano-particles (1-100 nm) for human and environment benefit.

Role of Nanotechnology in enhancing agricultural productivity and food security

- ① Soil → understanding nature of soil and soil health using Nanosensors.
- ② Water → Purifying water using bio-nano filters while also ensuring water efficiency.
- ③ Crop → Assessing diseases using bio sensors.
- ④ Seeds → Fortification and germination of seeds at a faster pace using nano-films and coating.

- ⑤ Preservation $\Rightarrow$ Silver nano-particles for food preservation
Such as preventing ~~odor~~ odour. ~~and~~
- ⑥ Pest management $\Rightarrow$ use of nano-bots and nano materials to repel pest.
- ⑦ Herbicide and pesticides $\Rightarrow$ Better absorption of pesticides while direct ~~at~~ application on leaves.
- ⑧ Fertiliser efficiency $\Rightarrow$ increase rate of absorption.

Recent developments $\rightarrow$ Nano-urea
 $\rightarrow$ Nano-DAP by IFFCO

Potential benefits of Nano-urea & Nano-DAP

- ① only 500 ml of ~~urea~~ nano urea is required as opposed to 45 kg of solid urea (IFFCO)
- ② It will drastically reduce logistics cost and storage cost.

- ③ Better resource efficiency on direct application ~~of~~ on leaves and stem.
- ④ low risk of eutrophication and percolation to groundwater.

Risks ⇒

- ① lack of risk assessment on part of Environment.
- ② Can create super bugs and pest resistance.
- ③ Bio-accumulation and Biomagnification to disrupt food chain.
- ④ low awareness on part of farmers on application of nano-urea.

way forward ⇒

- ① Regulatory framework and close field trials.
- ② Risk assessment
- ③ Raising awareness on use of nano-fertilisers. for precision agriculture.

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 are microscopic particles whose property varies ~~also~~ with change in shape, size, orientation. Recently Nobel prize was awarded to 3 scientist for synthesis of quantum dots.

Applications of quantum dots ⇒

- ① Screens ⇒ Screens with higher brightness and lower response time can be manufactured using quantum dots.
- ② Communication devices ⇒ such as optical networks, sea lanes of communication, ~~state~~ can be manufactured. use in mobile chips, semiconductors and motherboard.
- ③ Battery storage and other electrical appliances can be used to increase

Their efficiency.

④ Quantum computing $\Rightarrow$ use for big data analytics and solving complex mathematical problems.

⑤ Surgery and medical usage $\Rightarrow$ creation of precise medical equipments and other diagnostic tools.

⑥ Sustainable energy $\Rightarrow$ such as use of perovskite on solar plates to improve their efficiency.

⑦ Image sensing and facial recognition can be made accurate.

eg FIRBMS.

⑧ Space exploration $\Rightarrow$ Quantum dots can be harnessed to understand black holes and dark matter.

Govt. efforts

- ① National Quantum mission 2023
- ② National ~~semiconductor~~ Semiconductor mission
- ③ QUEST
- ④ Increasing funding in institutes like IISc, TIFR to study quantum dots.

Quantum dots have variety of applications in agriculture, electronics, environment conservation.

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 in India are established under wildlife protection act, ~~isotat~~ with state govt. empowered to establish wildlife sanctuaries, National parks etc and union govt. can declare Biosphere reserves, National parks etc.

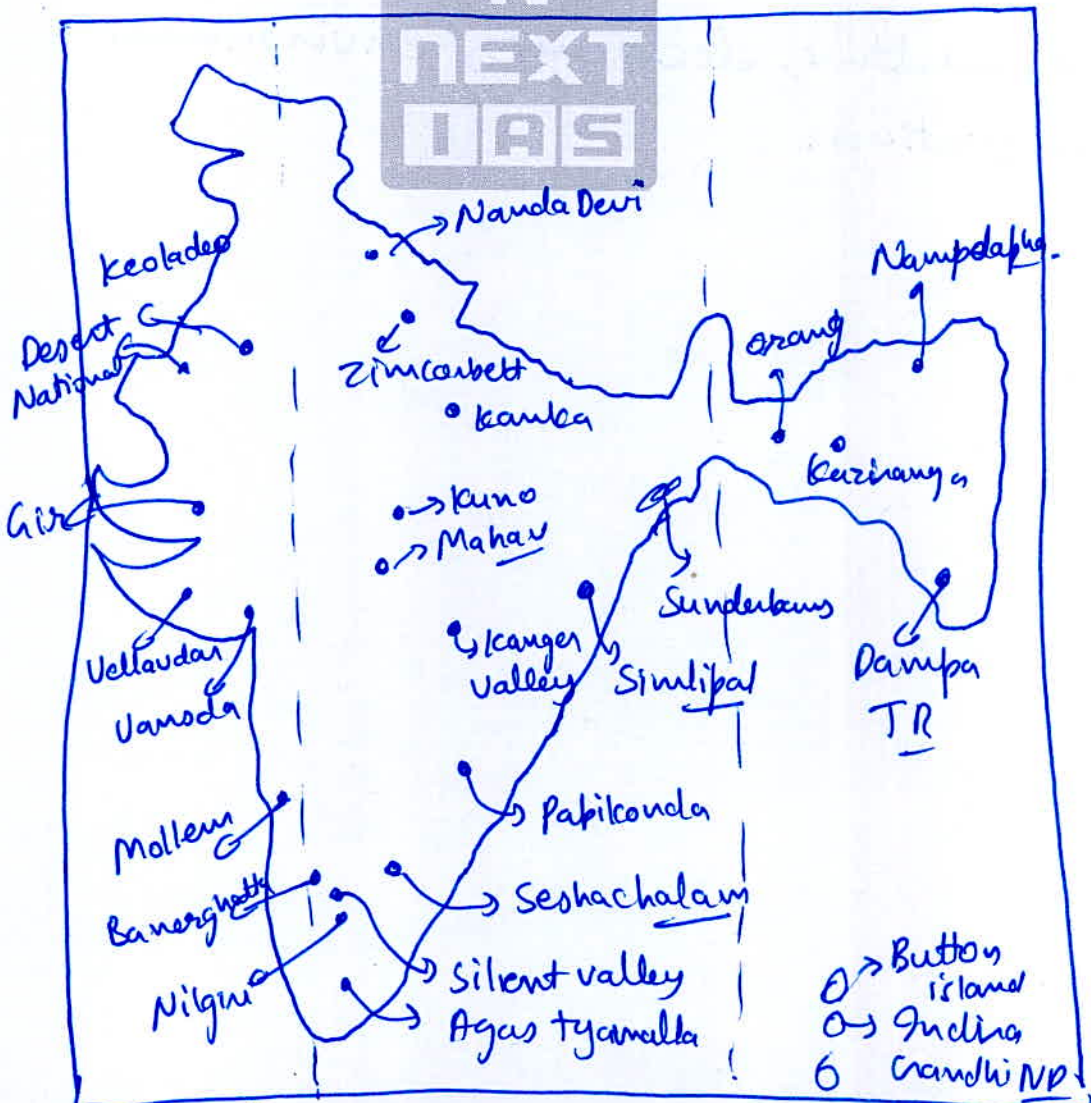


Fig Protected areas in India.

Role of protected areas in biodiversity conservation India

- ① Provide habitat and core wildlife zone for wildlife to flourish. eg Tiger reserves
- ② Limited interference from humans and other anthropogenic activities
- ③ Prevents habitat fragmentation and trade in wildlife.
- ④ Links traditional knowledge with modern methods to conserve ~~the~~ biodiversity. eg Community forests & sacred groves
- ⑤ Provides corridors such as elephant corridors to support migration and reduces man animal-conflict. eg Kutra elephant reserve
- ⑥ Provides a holistic view on state of wildlife in India. eg Gulf of Mannar biosphere reserve.

Effectiveness of National parks, wildlife sanctuaries and Biosphere reserves

- ① Rise in no. of tigers i.e currently close to 3500 (Tiger census)
- ② Invasive alien species are put in check that disrupts ecosystem.
- ③ Increased awareness on part of citizenry.
- ④ Sustainable use of wildlife resources such as minor forest produce
- ⑤ Increase law and order and compliance
eg Assam govt. burnt thousands of horns of Rhino.
- ⑥ ~~Secured~~ A secured home for wildlife
eg Great Indian Bustard in Jaisalmer.
Lion in Gir forest.

Though National parks, wildlife sanctuaries and biosphere reserves have been preserving biodiversity, India still is behind its target of 33% forest area.

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

(15 अंक, 250 शब्द)

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

(15 marks, 250 marks)

Particulate matter (PM_{2.5} and PM₁₀) and ozone pollution is on all time high in this years AQI index across various cities.

Causes of PM_{2.5}, PM₁₀ and ozone pollution

① Natural factors ⇒ • Such as dust storms, sand storms.

eg Dust storms in Rajasthan raising PM level.

- Geographical topography combined with climatic factors such as air subsidence on Delhi.

② Anthropogenic factors ⇒

① Vehicular exhaust ⇒ unburnt and half burnt particles of hydrocarbons emanating from vehicles releases PM and ozone

eg old Diesel vehicles,

② Road dust and construction dust
creating problems such as respiratory
diseases.

③ Industrial pollution → lack of
compliance with
regulatory norms ~~the state~~ releases
lethal amounts of PM 2.5 and ozone

④ Stubble burning → Stubble burning
of rice husk
in adjoining areas of Delhi NCR
Increases concentration of ozone & PM 10.

⑤ Low quality of paints usually degrade
over time to cause ozone pollution.

⑥ Waste Incineration is the biggest
contributor to PM pollution.

eg open burning of waste such as
plastics, sofa, Thermo coal.

Govt. steps taken to mitigate the same

- ① NAAQS
- ② Graded action plan.
- ③ BS ~~III~~ phase 2
- ④ AQI Index
- ⑤ NCAP

Effectiveness ⇒

- ① Air quality continues to be poor among different cities.
eg 39 cities out of 50 are of India in world's most polluted cities.
- ② Rising respiratory and other health problems.
- ③ Stubble burning still continues, with AQI in surrounding cities crossing 180.

A holistic plan ~~with~~ encompassing regulatory framework along with cleaner energy technology is required to address the issue of ozone and particulate matter 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)

International Narcotics control board report (INCB)

highlights growing menace of drug trafficking due to proximity with Golden triangle and golden crescent along with other security issues.



Confluence of organised criminal groups and terrorist groups to help each other overtly and covertly has put security agencies at middle of it.

- ② Social challenges $\Rightarrow$ Rising drug addiction, mental health issues, crimes.
eg youth in Punjab
- ③ Finances $\Rightarrow$ This happens along with money laundering, arms supply, human trafficking..
- ④ Rise in cross-border wildlife trade ~~is~~
eg Racket busted in Gurgaon supplying Snake venom for toxication.

Multi-Pronged approach to address it

- ① International and regional cooperation
Leveraging role of SAARC, SCO and BIMSTEC to deal with the issue.
- ② India as a net security provider in Indian ocean to neutralise the threats.
- ③ Border area development and community policing to stop the menace.

- ④ Institutional and organisational capacity such as empowering local self govt. and state police forces.
- ⑤ Hard security measures such as cross border operations to create a strong deterrence.
- ⑥ Joint patrolling with other nation's security forces.
eg operation all clear
CORPAT exercise.

Govt. efforts →

- ① NDPS act 1988
- ② Strengthening FIU and ED to bust out money laundering.

Drug trafficking is a serious challenge that ~~causes~~ confluences with other crimes which possess a National security. Hence risk assessment and Information driven response is required to address the issue.

20. वामपंथी उग्रवाद के प्रति भारत की प्रतिक्रिया (कारवाई) में नक्सलवाद के मूल कारणों को दूर करने के लिए कठोर सुरक्षा उपायों के साथ-साथ सामाजिक-आर्थिक नीतियों और संवाद जैसे नरम दृष्टिकोणों/उपायों (Soft approaches) को एकीकृत करने की आवश्यकता है। चर्चा कीजिए। (15 अंक, 250 शब्द)
India's response to left wing extremism needs to integrate soft approaches like socio-economic policies and dialogue along with hard security measures to address the root causes of Naxalism. Discuss. (15 marks, 250 words)

Incidences of left wing extremism (LWE) has reduced by 77 % in 2021 from level of 2009 (MHA). However recent attacks in Bastar on security forces has highlighted the persistent and ongoing challenge.

Causes of LWE →

- ① Relative deprivation and tribal apathy on part of their rights, education and critical health infrastructure.
- ② Developmental and ~~co~~ lack of connectivity infrastructure.
- ③ Lack of participation in policy formulation and implementation as well as political grievances
eg Dysfunctional Tribal advisory Council (Schedule 5)
- ④ Parallel Institutions created by LWE to garner tribal support.
- ⑤ Issue of Tal, Tangal, Tameen,

Socio-economic policies as response to LWE

- ① Bridging developmental deficits such as healthcare, education & schools, connectivity. eg Aspirational district program
- ② Grievance redressal mechanism to protect the tribal rights and swift response.
- ③ Water and sanitation promoting projects. In the hinterlands.
eg In Dantewada only 28% of houses has access to tap water.
- ④ Anti Poverty and other welfare measures.
eg Eklauya Schools
- ⑤ Promoting local handicrafts and ~~ascrib~~ ascribing them GI tags
eg Dhokra art
- ⑥ Skill development and vocational training
eg National skill development mission
- ⑦ Empowering tribal advisory council and MSP to minor forest produce

Dialogue and hard security measures

- ① A comprehensive surrender cum rehabilitation policy to break the culture of violence.
- ② Peace agreements and ceasefire agreements with LWE groups.
- ③ Establishing special forces such as Gray hounds, Cobra trained in Guerilla warfare to weed out the extremist groups.
- ④ Joint security forum for Information Sharing between states and CAPF for swift response.

LWE has plagued the country from insides hence a 2 pronged approach (developmental measures and offensive measures) along with SAMADHAN doctrine is the way forward.

NEXT IAS

Space for Rough Work

NEXT IAS

Space for Rough Work

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

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

