

# NEXT IAS

**RECEIVED**

06 SEP 2024

## अनुभव 2024

(To be filled by candidate)

Test No. : 03

TEST CODE : ANV2403

Name of Candidate: NANCY SINGH Mobile No. ....Roll No. : GSPM23B10138 Start Time ..... End Time.....Date of Examination: 6-09-2024 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 DATE: .....

### 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 यह आवंटित समय-सीमा के भीतर ही सभी 20 प्रश्नों के उत्तर-लेखन का प्रयास करें।
4. प्रत्येक उत्तर, प्रवेश के समय चुनी गयी भाषा के माध्यम में ही लिखे जाने चाहिए।
5. अभ्यर्थियों को विशिष्ट प्रश्न के उत्तर संबंधित प्रश्न के नीचे ही लिखने होंगे। आवंटित स्थान के बाहर लिखे गए किसी भी उत्तर को क्रेडिट नहीं दिया जाएगा।
6. कृपया साफ-सुथरा लिखें। अपठनीय लेखन से बचें।
7. QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS: .....

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**Student Concerns / Query**

1 .....  
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**Evaluator's Feedback / Response**

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**MARKING SCHEME \***

Marks Per Ques	Below Average	Average	Above Average
10 Marks	Below 3.00	3.00 - 3.75	4.00 and above
15 Marks	Below 4.50	4.50 - 5.75	6.00 and above

\* Subject to change without prior notice.

**IMPORTANT QR CODES**



Topper's Copy



Common mistake and Correct Filled QCAB



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**MACRO COMMENTS**

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

**STRENGTHS OF THE CANDIDATE**

**AREAS OF IMPROVEMENT**



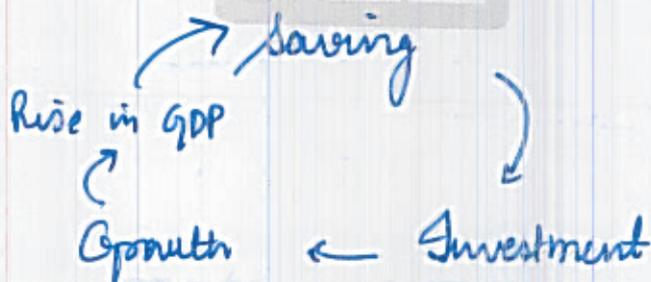
**IMPROVEMENT SUGGESTIONS**

1. घरेलू बचत भारतीय अर्थव्यवस्था की संवृद्धि में किस प्रकार योगदान देती है? क्या आपको लगता है कि घरेलू बचत दर में गिरावट भारतीय परिवारों में ऋणग्रस्तता और संकट में वृद्धि का संकेत देती है? (उत्तर 150 शब्दों में दीजिए) 10 अंक
- How do household savings contribute to the growth of the Indian economy? Do you think that the recent fall in household savings rate marks a rise in indebtedness and distress among Indian households? (Answer in 150 words) 10 marks

According to RBI report, savings in India fell to a level way below at 5.1%.

Households savings → contribution to growth

① Virtuous cycle



② Household savings provides avenues to banks to invest in foreign countries, stock market.

③ Savings when investment invested for infrastructure creation leads to growth in GDP and economy.

Recent fall in saving rates ~~has~~ marks  
rise of indebtedness

(A) Yes

↳ loss of jobs on account of automation  
and AI, rise of pandemic.

Example: 25 million jobs will be lost  
due to AI according to Nasscom.

↳ Fall in productivity in agriculture →  
rising indebtedness.

(B) No.

↳ Fall in savings rate is due to  
speculations and fluctuation in market

↳ rise in ~~new~~ inflation leading to  
low <sup>real</sup> interest rate inhibits savings.

↳ slowdown.

Savings is a key pillar for growth  
of economy.

2. भारत के एफडीआई (FDI) क्षेत्र में उल्लेखनीय गिरावट देखी जा रही है। वे कौन से कारक हैं जो विदेशी निवेशकों के बीच भारत में निवेश करने के प्रति आशंका उत्पन्न कर रहे? सरकार द्वारा इस गिरावट की प्रवृत्ति को उलटने/रोकने के लिए कुछ सुधरात्मक उपाय सुझाइए।

(उत्तर 150 शब्दों में दीजिए) 10 अंक

India's FDI sector is seeing a significant downward trend. What factors are causing apprehensions among the foreign investors to invest in India? Suggest some corrective measures that must be taken by the Government to reverse the falling trend.

(Answer in 150 words) 10 marks

FDI refers to investment in the country in the form of technology, development of greenfield projects etc.

Recently, according to economic survey, there has been fall in FDI. It was approximately \$ 42 billion in 2023.

Factors causing apprehension among foreign investors

- ① Strict labour laws and lack of ease of doing business.
- ② Currency fluctuations → depreciation of rupee
- ③ Trade protectionist policies of India

to provide support to domestic industries.

- ④ Frequent changes in FDI limit.
- ⑤ Also, huge dependence on China realised that dependency can have negative repercussions so countries are opting for offshoring.

Corrective measures that can be taken

- ① Easy land acquisition policies.  
Example: National Land Bank Portal
- ② Use of technology for easy clearances.  
Example: Clearances for port within 24 hours
- ③ Removing offset conditions
- ④ PLI for industries to be promoted.
- ⑤ MIGA → To secure investment.

FDI can drive economic growth by providing technological knowhow.  
FDI is required for growth of nation.

3. कृषि सब्सिडी भारत में फसल विविधता, फसल प्रतिरूप और कृषि संधारणीयता को किस प्रकार प्रभावित करती है?  
(उत्तर 150 शब्दों में दीजिए) 10 अंक
- How do farm subsidies impact crop diversity, cropping patterns and agricultural sustainability in India?  
(Answer in 150 words) 10 marks

Farm subsidies account for one fifth of the agricultural income. It accounts for approximately 2% of India's GDP.

Farm subsidies crop diversity, cropping patterns and agricultural sustainability

① MSP: It promotes mono cropping and inhibits crop diversification

Example: 45% of GCA → paddy and wheat

② Irrigation subsidy → Intensive agriculture practices and crops like rice grown in Punjab Region → causes desalinisation and lowering of groundwater.

Example: India is the largest consumer of groundwater (32% → agriculture)

③ Fertilizer subsidy → leads to diverting of urea for industrial applications  
↳ Also excessive use leads to reduced soil fertility

④ Electricity subsidy → Diverted to industries  
→ losses for DISCOMS

⑤ Open procurement → leads to growing of rice and wheat → less production of oilseeds → imports (\$16 bn. in 2023)

Way Forward

→ Neem coated urea

→ Rationalisation of subsidies

as per Shanta Kumar Committee

↓  
DBT in fertilizers.

↳ MSP ~~should~~ to be given for all crops.

Subsidies inhibit diversification and leads to stagnant growth in agriculture. It needs to be nationalised for Krish Vikas.

4. "परिशुद्ध कृषि" के सिद्धांतों पर चर्चा करते हुए, परिशुद्ध कृषि में "इंटरनेट ऑफ थिंग्स" के उपयोग को विस्तार से समझाइये।

(उत्तर 150 शब्दों में दीजिए) 10 अंक

While discussing the principles of "precision agriculture", elaborate on the uses of "Internet of Things" in precision agriculture.

(Answer in 150 words) 10 marks

Precision agriculture refers to application of inputs in such a manner that minimises the wastage and increases efficiency.

Principles of Precision Agriculture

- Micro-irrigation (Drip, sprinkler)
- Use of nano urea, nano DAP
- Use of ICT and IoT
- Minimise input and maximise Output

Uses of IoT in precision agriculture

① Production stage :

↳ IoT helps to identify the sowing season for crops.

Example : Microsoft's AI sowing app.

② It helps to in deployment of sensors

which can help in knowing about soil nutrients, moisture and thus inputs can be used efficiently. Example: ICAR  $\rightarrow$  Yields  $\uparrow$  se by 20%  
via precision agriculture

### ③ Weed management

$\hookrightarrow$  IoT and use of UAVs allows for monitoring of crops and applying weedicide, pesticide at appropriate point of contact.

④ Monitoring of farms and receiving farm specific, stage specific information via SMS. Example KISAN Suvidha App,

⑤ Also IoT can help in knowing info about market demands. Example AGRINET

⑥ Also, data about farms can be used for agricultural credit

Challenges  $\rightarrow$  Digital infra missing  
 $\rightarrow$  Digital illiteracy

Precision agriculture via IoT can help revolutionize agriculture and increase productivity

5. लघु मॉड्यूलर नाभिकीय रिएक्टर (SMR) क्या हैं? लघु मॉड्यूलर नाभिकीय रिएक्टरों को पारंपरिक नाभिकीय ऊर्जा संयंत्रों का सुरक्षित विकल्प क्यों माना जाता है? (उत्तर 150 शब्दों में दीजिए) 10 अंक
- What are Small Modular Nuclear Reactors (SMRs)? Why are SMRs considered a safer alternative to conventional Nuclear Power Plants? (Answer in 150 words) 10 marks

Recently Budget 2024-25 made announcement for establishment of Small Modular Nuclear Reactors.

Small Modular Nuclear Reactors are those which produce have a capacity between 30 MWe to 300 MWe. They can address our energy security needs.

SMRs → safer to conventional Nuclear Power Plants

- ① They are small in size
  - ↳ Thus they are economical
- ② Can be assembled and transported to any remote place
  - ↳ Help to provide electricity in far off regions.

be automatically switched off in case of any threat, leakage etc.

- ④ It will occupy less land and has less risks.
- ⑤ It will produce less waste.
- ⑥ Provide electricity in remote ~~and~~ areas help to achieve India's objective of electrification and reduces usage of power cutages.

Challenges → At the stage of idea  
→ Lack of funds and R&D  
→ Private sector not allowed.

Budget 2024-25 provides for increasing R&D in SMR. This will help India achieve net zero by 2070.

Zoonotic diseases are emerging recently at a increase rate and pose several challenges

### Reasons for rise

#### ① Climate change

↳ Changes in genes of animals and rise of different viruses and bacteria → susceptibility increased.

#### ② Use of antibiotics for animal ~~use~~

Example: Acetofenac given to poultry, livestock

③ Rise in epidemics and growth of viruses. Example: COVID virus from Uuhan

④ Cultivation of animals in unhygienic manner.

② Ebola virus

③ Monkey pox virus - from rodents to humans.

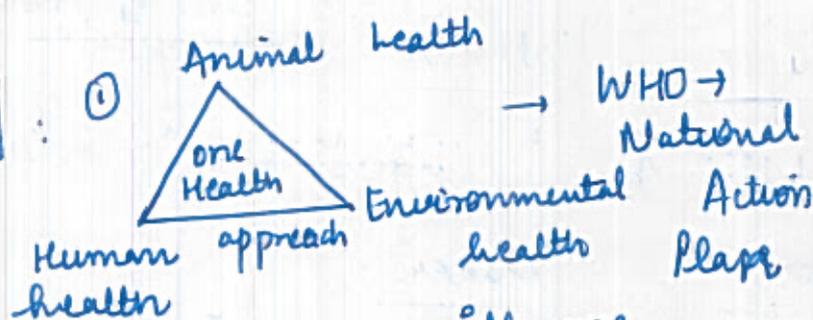
④ Brucellosis

⑤ Influenza virus . H1N1.

⑥ COVID - 19 pandemic which was spread through bats.

⑦ Nipah virus : It passes from fruit bats to humans.

Way Forward



② Global Anti-microbial surveillance system

③ AWARE strategy

Zoonotic pathogens need to be controlled for promoting health and development.  
(SDG 5)

congregations in India. In the light of NDMA's "Suggestive Framework for Preparation of Crowd Management Plan for Events Venues of Mass Gathering", suggest measures to prevent stampede incidents.

(Answer in 150 words) 10 marks

Recently Hathras stampede in religious gathering draws attention for crowd management during gatherings.

Major challenges of crowd control in large socio-religious gatherings

① Blind faith in religious influencers.

Example: Hathras stampede where crowd was eager to touch the feet of leader.

② Such gatherings constitute mostly of illiterate or less literate who are difficult to be controlled.

③ Poor preparedness

① Training of personnel for such emergency situation.

② Estimation of people and thus appropriate space for gathering.

③ Technological deployments

Example : Artificial pressured water release to disperse crowd.

④ Also, use of cameras for continuous monitoring

Stampede incidents can be easily controlled with adequate measures taken.

8. 'संयुक्त राष्ट्र हाई सी ट्रीटी 2015 के पेरिस समझौते की महत्ता और सार्थकता के बराबर है।' इसके संदर्भ में, समुद्री जैव विविधता के संरक्षण और निष्पक्ष व न्यायसंगत संसाधन-साझाकरण के लिए संयुक्त राष्ट्र हाई सी ट्रीटी के महत्त्व पर चर्चा कीजिए।  
(उत्तर 150 शब्दों में दीजिए) 10 अंक

UN High Seas Treaty was recently concluded for protection of high seas. It is popularly known as BBNJ treaty.

Comparable to Paris Agreements

→ Talks about saving high seas and mitigating impacts of climate change

↳ Conservation of resources

Importance of UN High Seas Treaty

① Conservation of Resource

↳ It deals with conserving of resources beyond EEZ.

② Equitable and fair distribution of resources.

### ③ Inclusion of communities

↳ Attention to indigenous communities and proposing for fair and equitable sharing.

### ④ Impact Assessment

↳ To know about the adverse effects ~~on~~ in high seas.

⑤ Global high seas → Global common which requires combined efforts and cooperation for sustainable use.

UN High Seas Treaty will help in conservation of biodiversity.

using ,  
↳ Also deepfake of leaders or fake  
voices can be misused

③ It can also increase radicalisation.  
Example: Racial discrimination visible in  
arts produced by DAUG.

Bletchley Park Declaration was signed  
for safe and trusted use of AI.

India can  beef up its cybersecurity

① Global collaboration

↳ Global Partnership on AI.

② Ethical Practices

↳ NITI. Aayog Principles for AI.

③ Skilling

↳ Future Skills Prime

④ Codes and Laws

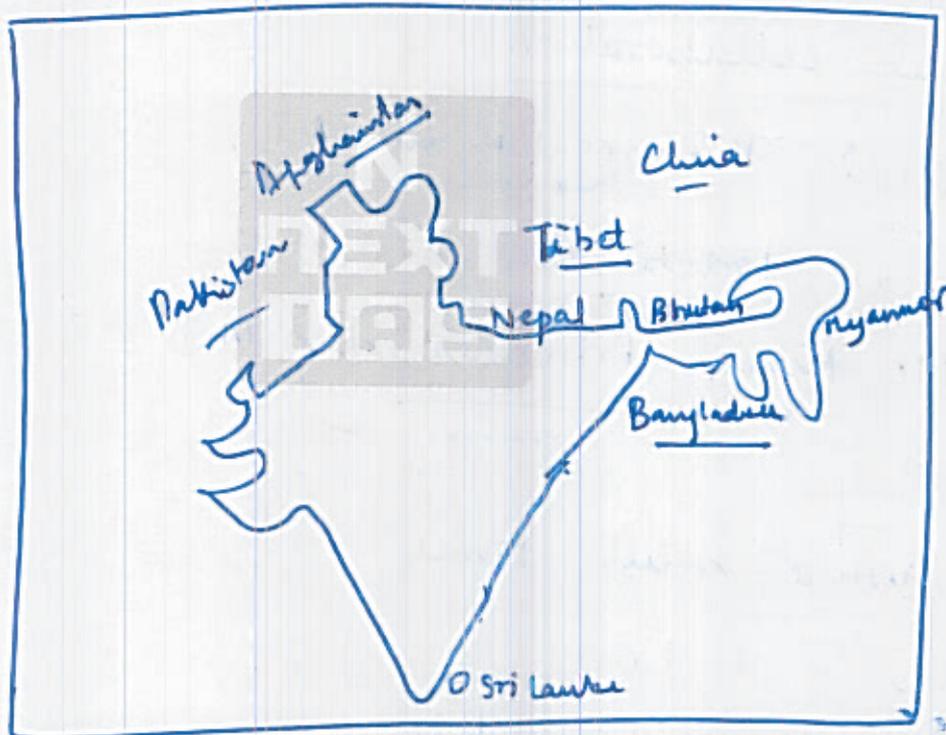
↳ Digital India Bill

... .. Kendras

AI is a double edged sword. Reforms need to be introduced for responsible use of AI.

10. पड़ोसी देशों में बढ़ते राजनीतिक संकट के कारण भारत की सीमा सुरक्षा गंभीर दबाव में है। विस्तार से समझाइये।  
(उत्तर 150 शब्दों में दीजिए) 10 अंक  
India's border security is under severe pressure due to the rising political crisis in neighbouring countries. Elaborate.  
(Answer in 150 words) 10 marks

India has vast borders of 15,100 km and this brings up challenges for India especially when our neighbourhood is hostile.



Border security under pressure

Zia regime and instability in has posed threats of illegal migration.

↳ Persecution of minority → threat of migration

① Myanmar crisis : Military coup in Myanmar and threat of Rohingyas puts pressure on our borders.

② Political turmoil in Pakistan → This poses threats of infiltration and terrorist attacks. Example : Recent rise in terrorist attacks in Jammu.

④ Taliban rule in Afghanistan poses risk of terrorist attacks.

⑤ Also, China creates pressure over LAC → Galwan valley dispute.

... with Nepal for Kalapani

⑦ Sri Lanka crisis → Jamil Sri Lanka's  
migration threat.

Way forward → CIBMS → Winning Heart & Mind  
→ UAR  
→ Counter-radicalisation

Borders <sup>security</sup> is crucial for maintaining peace,  
law and order in our country.

## NEXT IAS

Pg 21

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write on this margin

11. "कौशल के बिना व्यक्ति संपत्ति नहीं बल्कि राष्ट्र के विकास पर एक दायित्व है"। प्रासंगिक कौशलों का समावेश भारत के जनसांख्यिकीय लाभांश में किस प्रकार योगदान देता है? युवाओं में कौशल अंतर को कम करने के लिए सरकार द्वारा हाल ही में कौन सी पहल की गई हैं? (उत्तर 250 शब्दों में दीजिए) 15 अंक
- "A person without skill is not an asset but a liability on the nation's growth". How infusion of relevant skills contribute to the demographic dividend of India? What recent initiatives have been undertaken by the Government to reduce the skill gap among young Indians? (Answer in 250 words) 15 marks

According to NITI Aayog, 45% of India's growth has been due to increase in labour productivity which has a direct link with skills.

Person without skill is a liability

→ leads to structural unemployment  
Example: 3.2% unemployment (PIFS 2023)  
→ Demographic dependency

Infusion of skills → contribution to demographic dividend

- ① Aids in making one employable as per the needs of industry

Example : According to Economic Survey 2023-24, more than 50% of India's youth is unemployable due to lack of skills.

- ② Skills help an individual to deal with advancing technologies like AI, blockchain, IoT

- ③ Semi-skilled workers can be infused in manufacturing sector in India.

Example : Footwear, textile, electronics → labour intensive

- ④ ... sector growth in India due

Example : ~ 30% workforce contributes to 53% of service sector GDP.

⑤ Skills minimise structural employment and leads to growth



## Government initiatives to promote skills

① PM Kaushal Vikas Kendras

↳ Aims to impart skills to the workers.

② Budget 2024-25 : Skilling initiatives

↳ 1000 Industrial training institutes to be set up

↳ 500 top companies to be chosen where youth will be given internship

③ Formation of National Skill Development Cooperation

④ Kaushal Vikas Kendras

⑥ Lakshpati Didi → Skills to operate drone

⑦ Skilling farmers through Custom Hiring Centres

Thus skilled youth will help in reaping demographic dividend and lead to Sabke Saath Sabke Vikas.

## NEXT IAS

Pg 24

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12.

भारतीय विमानन क्षेत्र में देश में परिवहन का प्राथमिक साधन बनने की अपार संभावनाएँ हैं। भारत के विमानन क्षेत्र में संवृद्धि को बढ़ावा देने वाले कारक क्या हैं? इस क्षेत्र के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इसमें सुधार के उपाय सुझाइए।  
(उत्तर 250 शब्दों में दीजिए) 15 अंक

The Indian aviation sector has immense potential to become the primary mode of transportation in the country. What are the factors propelling growth in India's aviation sector? Highlight the challenges that the sector faces and suggest measures for improvement.

(Answer in 250 words) 15 marks

India's aviation sector has immense potential to improve connectivity and can help in economic growth.

Factors propelling growth in aviation sector → Rise of upper middle class (white collar workers who can afford to travel via aviation).

→ Growth in India's GDP → propels investment in aviation

removed by government

FDI in aviation sector

India's tourism sector is on a continuous rise

Agricultural products like fresh fruits and vegetables can be transported.

### Challenges faced by aviation sector

- ① High tax on Aviation turbine fuel  
↳ This increases the overall cost inhibiting growth.
- ② Absence of MRO → Ats Maintenance, Repair and overhaul operations
- ③ lack of skills among the youth.
- ④ Not easy to enter aviation sector.
- ⑤ High taxes are charged by provincial states which further adds up the cost.

measures

- ④ Airlines have to pay charges for using airport services like landing etc.
- ⑤ Low traffic on non-metropolitan routes.

NEXT IAS

Pg 26

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### Measures for improvement

- ① Taxes on Aviation Turbine Fuel must be ~~removed~~ reduced.
- ② Availability of MRO operations
- ③ Schemes like Regional Connectivity Scheme - UDAN (Ude Desh Ka Aam Nagrik must be promoted)
- ④ Government support like viability gap funding can boost aviation sector.
- ⑤ R&D in aviation sector

fleets

Thus reforms in aviation sector can give a boost and help in easing logistics of India.

NEXT IAS

Pg 27

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13. किसान उत्पादक संगठन (एफ.पी.ओ.) कृषि-नवाचार के इंजन हैं। इस संदर्भ में, कृषि में विखंडन और आधुनिकीकरण के अभाव की समस्या के समाधान में एफ.पी.ओ. के भूमिका की चर्चा कीजिए। कृषि में एफ.पी.ओ. की भागीदारी को बढ़ावा देने के लिए सरकार द्वारा की गई पहलों पर प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए) 15 अंक
- Farmer Producers' Organizations (FPOs) are engines of agri-innovation. In this context, discuss the role of FPOs in addressing the issue of fragmentation and lack of modernization in agriculture. Highlight the initiatives the Government took to promote the participation of FPOs in agriculture. (Answer in 250 words) 15 marks

Agriculture employs 46% of workforce and contributes 17% to India's GDP.

FPOs → engines of agri-innovation → Helps farmers to become agri-preneurs → R & D can take place to have improved seeds and weather extension services and weather extension services like drones

Role of FPO in addressing issue of fragmentation & modernization

① Custom Hiring Centres → FPOs have CHCs which provide machinery

NEXT IAS

Pg 28

Candidates must not write on this margin

to farmers which can address low mechanisation

Example: Only 45% mechanisation in India as per Economic Survey 2023-24.

② FPOs allow farmers to do joint cultivation which help in reaping economies of large scale and address issue of small landholding.

③ Deployment of precision agriculture techniques via FPOs

④ Soil Health Card, Kisan Credit ... provided via FPOs

⑤ FPOs can play crucial role in food processing industry → can allow easy procurement.

⑥ Modern technologies like use of bots, nano UAVs can be deployed for pest control.

Initiatives taken by the government to promote FPOs

① Operation Greens

↳ It aids for development of FPOs for 22 crops like fruits, vegetables -

② Government announced establishment of 10000 FPOs.

③ PM-Kisan Sampada Yojana → FPOs for providing procurement at primary processing centres.

④ NABARD → Provides loan to FPOs →

- ⑤ scheme of \_\_\_\_\_
- ⑥ Establishment of Custom Hiring Centres
- ⑦ Providing technological aid to FPOs.

Budget 2024-25 aims to promote FPOs for vegetable procurement and other agricultural produce. It will propel growth in agriculture,

14. भारतीय अर्थव्यवस्था के सबसे मजबूत विकास इंजनों में से एक होने के बावजूद, कुछ अपस्ट्रीम और डाउनस्ट्रीम मुद्दे हैं जो भारत में खाद्य प्रसंस्करण उद्योगों के विकास को प्रभावित कर रहे हैं। चर्चा कीजिए। भारत में खाद्य प्रसंस्करण उद्योगों के समग्र विकास को मजबूत करने के उपाय सुझाइए। (उत्तर 250 शब्दों में दीजिए) 15 अंक

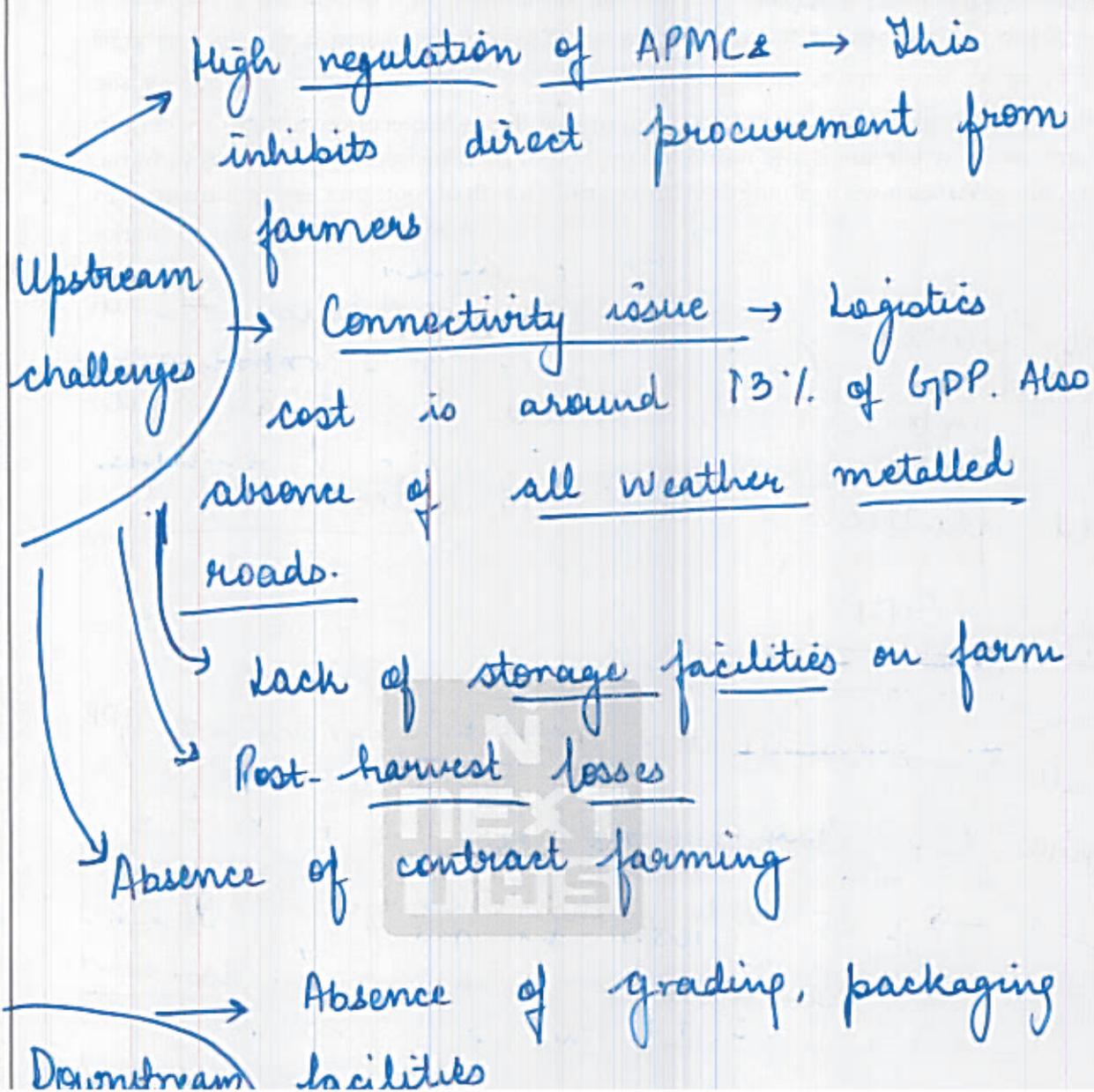
Despite being one of the strongest growth engines of the Indian economy, there are certain upstream and downstream issues ailing the growth of food processing industries in India. Discuss. Suggest measures to strengthen the overall growth of food processing industries in India. (Answer in 250 words) 15 marks

Food processing refers to <sup>any</sup> addition of in raw material to make a final value added products. It contributes ~ 9% to India's GDP.

Growth engines

- Contributes 11% to agricultural GPP
- Sunrise sector
- 25 lakh firms employed 74% of agricultural workforce in food sector

challenges which are till the range  
of procurement while from procurement  
till the supply in market, challenges  
within this refers to downstream  
challenges



→ Integrated cold supply chain  
is missing  
→ Logistics costs is very high  
→ Lack of adherence to food quality standards → sanitary and phytosanitary issue

Measures to strengthen

- ① Schemes like PM-Kisan Sampada Yojana must be promoted.
  - ↳ Facilitate cold storage chain
  - ↳ Building of food parks and mega clusters
- ② Operation Greens to minimise post-harvest losses.
- ③ National Logistics Policy must be worked upon to increase connectivity.
- ④ Essential Commodities Act to be revised for promoting investment from private sector.
- ⑤ FDI and PLI to be promoted

⑥ MSMEs for irradiation and quality testing

Hon'ble Prime Minister has rightly said that 21st Century India needs food processing revolution.

NEXT IAS

Pg 33

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15. कृषि विज्ञान व सांख्यिकी के क्षेत्र में क्रमशः डॉ. एम.एस. स्वामीनाथन और डॉ. सी.आर. राव के योगदान से भारत को क्या लाभ हुआ? (उत्तर 250 शब्दों में दीजिए) 15 अंक
- How was India benefitted from the contributions of Dr M.S. Swaminathan and Dr C.R. Rao in the fields of agricultural science and statistics respectively?
- (Answer in 250 words) 15 marks

Dr. M.S. Swaminathan and C.R. Rao have ~~played~~ <sup>made</sup> great contribution for agriculture and statistics and have been awarded Nobel Prize for the same.

Contribution of Dr. M.S. Swaminathan

① Along with Norman Borlaugh, M.S. Swaminathan worked upon HYV of wheat → This helped in green revolution and

② Establishment of Biotechnology Research Institute.

③ He made advancement in protection of potato from cold and parasite nematode.

NEXT IAS

Pg 34

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④ Gave the concept of calculation of MSP at 1.5 C<sub>2</sub> → Comprehensive Cost.

⑤ GM-Rice → Salt tolerant variety of rice → Climate smart agriculture.

⑥ He worked with International Rice Research Institute.

⑦ Gave concept of evergreen revolution.

⑧ Irrigation reforms from both demand and supply side.

⑨ World Food Prize was awarded in

## Contribution of C.R. Rao

- ① He formulated Cramer-Rao bound.
- ② He trained numerous statisticians at Indian Statistical Institute.

NEXT IAS

Pg 35

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- ③ Rao - Blackwellization concept  $\rightarrow$  helps in estimator efficiency
  - ④  $\hookrightarrow$  This is also used in rock dating.
  - ④ His works include multivariate analysis, estimation theory and differential theory.
  - ⑤ Orthogonal transformation
- Thus Dr. M.S. Swaminathan and C.R. Rao brought great levels for our

16. कृत्रिम बुद्धिमत्ता (AI) समग्र बौद्धिक संपदा प्रतिमान को किस प्रकार चुनौती दे रही है? नवप्रवर्तन को बढ़ावा देने और कृतियों एवं आविष्कारों को प्रोत्साहित करने के लिए कृत्रिम बुद्धिमत्ता को बौद्धिक संपदा के साथ कैसे संतुलित किया जा सकता है? (उत्तर 250 शब्दों में दीजिए) 15 अंक
- How is Artificial Intelligence (AI) challenging the overall intellectual property paradigm? How can AI be balanced with intellectual property to foster innovation and incentivize creations and inventions? (Answer in 250 words) 15 marks

Artificial intelligence has seen a continuous growth with advancement in technologies and is currently driving 4th Industrial Revolution.

AI → Challenging property paradigm

① Plagiarism

↳ ChatGPT content is creating issue of  
copyright rights.

## ② Issue of Copyrights

↳ Innovation via use of AI puts question into who shall completely hold copyright for a software or content

③ Trademarks generated through AI tools like DALL-E, ChatGPT again rises issue of ownership rights.

## Balancing AI with intellectual property

① Australia: It has recognised AI as a co-creator to resolve IP issues.

② Data Regulation Act:

Example: Cloud Act of USA, AI principles of EU, General Data

③ Ethical principles and frameworks to be evolved with skilling people in AI.

Example: NITI Aayog's principles for AI, HAP process Hiroshima AI Process.

④ Integration of AI prospects within IP laws like Copyrights Act, Patent Act etc.

Balancing AI with intellectual property rights is the need of the hour for safe, trusted and secure use of AI.

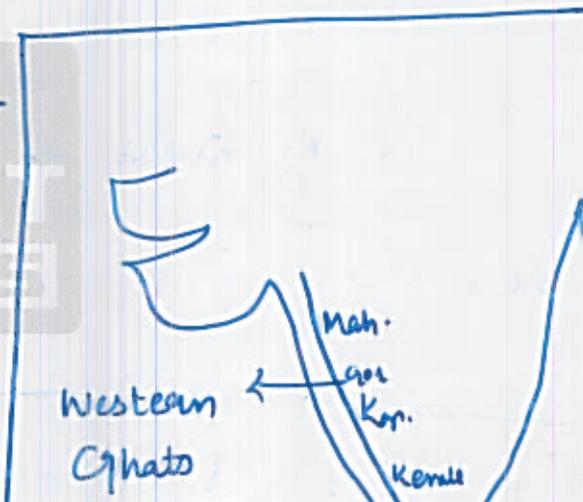


17. भारत की जैव विविधता को परिरक्षित और संरक्षित रखने में "पश्चिमी घाट" के महत्त्व पर प्रकाश डालते हुए, इस नाजुक और पारिस्थितिक रूप से संवेदनशील क्षेत्र के सामने आने वाले खतरों पर चर्चा कीजिए। पश्चिमी घाट पारिस्थितिकी तंत्र की सुरक्षा के लिए भारत सरकार द्वारा किए गए उपायों को विस्तार से समझाइये। (उत्तर 250 शब्दों में दीजिए) 15 अंक
- Highlighting the significance of "Western Ghats" in preserving and conserving the biodiversity of India, discuss the threats faced by this fragile and ecologically sensitive Region. Elaborate on the measures taken by the Government of India to protect the Western Ghats ecosystem. (Answer in 250 words) 15 marks

Western Ghats cover 6 Indian states and are one of the biodiversity hotspots of India

Significance of Western Ghats

① Steep: The submerged coast due to its steepness has



of deep ports. Example: JNPT, Mangalore

② Flora and fauna → Western Ghats is rich in flora and fauna and has many endemic species.

Example: Malabar civet

NEXT IAS

Pg 40

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③ Tourism: Western Ghats numerous tourists sites which help in growth and economy

Example: Ooty, Hampi

④ Presence of laterite soil helps in plantation crops like spices, cashewnut, coconut,

⑤ Rich in mineral resources.

⑥ Short swift rivers → Waterfall

Example: Jog falls

... land has fragile and ecologically

① Illegal mining and encroachment  
of wetlands

Example: Pallakarnai wetlands have been encroached.

② Invasive Alien species

Example: Venkateshpura lake → encroached →

NEXT IAS

Pg 41

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write on this margin

growth of water cabbage → loss of  
biodiversity.

③ Climate change → This has led to heavy and sudden downpour → landslide

Example: Recent Waynad landslide.

④ Unsustainable tourism.

Government steps

① Madhav Gadgil Committee → declared entire Western Ghats as eco-sensitive.

② Kasturirangan Committee → Proposed for  
as Ecologically sensitive  
37%.

4) Declaration of BSZ under National Action Plan

Western Ghats are pristine. It needs to be conserved and protected for reaping its benefits with sustainability.

NEXT IAS

Pg 42

18. जलवायु परिवर्तन पर संयुक्त राष्ट्र फ्रेमवर्क कन्वेंशन (UNFCCC) के पक्षकारों के सम्मेलन (COP) के 28वें सत्र के प्रमुख निष्कर्षों का वर्णन कीजिए। COP-28 के दौरान भारत द्वारा शुरू की गई ग्रीन क्रेडिट पहल की क्या विशेषताएँ हैं? (उत्तर 250 शब्दों में दीजिए) 15 अंक

Describe the major outcomes of the 28th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the features of the Green Credit Initiative launched by India on the sidelines of COP-28?

(Answer in 250 words) 15 marks

UNFCCC was formed in 1992 Rio Summit. Its highest decision making body COP meets annually to take measures on climate change.

Major outcomes of COP 28 → held in UAE

① First Global Stocktake

↳ NDC determined by states needs to be reviewed and its report in the

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(2) Global Pledge on reducing cooling energy demand by 68% by 2030.

(3) Loss and Damage Fund

↳ It has been operationalised

↳ separate fund set aside for least

developed countries.

(4) Pledge to triple renewable energy by 2030.

(5) New Collective Quantified Goal

↳ Climate finance of \$ 500 bn. required

(6) Double energy efficiency by 2030.

(7) India's initiatives :

(i) Global River Cities Alliance

(ii) Green Credit Initiative

(iii) Lead IT 2.0

## Features of Green Credit Initiative

- ① It is a pro-active initiative which aims to provide funds from individual as organization for different activities.

NEXT IAS

Pg 44

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- ② Activities included → Afforestation, Soil Management, Water pollution control.
- ③ Applications to be made to ICFRE → Indian Council of Forest Research Education → Dehradun.
- ④ After plantation, <sup>after</sup> ~~af~~ two years assessment will be done by ICFRE to provide green credit via platform.
- ⑤ It is presented separately unlinked Carbon Credit which is under Energy Conservation Act, 2001.

Thus Green Credit initiative and other initiatives will help India to achieve net zero by 2070.

19. शेल कंपनियों ने भारत में धन-शोधन (मनी लॉन्ड्रिंग) के खतरे में किस तरह योगदान दिया है? क्या धन-शोधन रोकथाम अधिनियम, 2005 में हाल ही में किए गए संशोधनों से ऐसी शेल कंपनियों के साथ ग्राहकों की लेन-देन संबंधी प्रकृति की समस्या का समाधान करने में सहायता मिलेगी? (उत्तर 250 शब्दों में दीजिए) 15 अंक
- How shell companies has contributed to the menace of money laundering in India? Do you think recent amendments to the Prevention of Money Laundering Act, 2005 will help address the problem of the transactional nature of clients with such shell companies? (Answer in 250 words) 15 marks

Shell companies are the one which are <sup>generally</sup> formed for malpractices and they themselves are not engaged in any production.

Shell companies  
contributing  
money

→ Tax evasion → Misuse  
of Double ~~taxation~~  
taxation avoidance  
agreements

profit shifting

Anti - pricing strategies  
use to launder money

Shell companies through fraud  
transaction help in placement and

NEXT IAS

Pg 46

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write on this margin

layering of money.

↳ Also, shell companies make use  
of fake invoicing to help convert  
black money into white.

Money Laundering refers to the act by  
which illegitimate proceeds are shown  
as coming from legitimate source. PMLA

Amendment 2023 helps to address  
challenges presented by shell companies.

regulation

↳ more reporting of such companies can help in addressing money laundering.

### ② Beneficiator regulation :

↳ One who owns 10% share will now be termed as beneficiator → This

will help in increased control over such companies.

### ③ Increased definition

④ More powers to ED for investigating case of money laundering

Way Forward

→ Financial Intelligence Unit to be strengthened

→ PATF guidelines to be followed

→ Extradition treaties with other countries

→ CERT-In to look into frauds

Money laundering is a menace that needs to be resolved for promoting growth of economy and reducing organised crime.

## NEXT IAS

Pg 48

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20. चर्चा कीजिए कि अपराध-उग्रवाद गठजोड़ ने पूर्वोत्तर भारत में जातीय संघर्षों और उग्रवाद की वृद्धि में किस प्रकार योगदान दिया है। इस चुनौती से निपटने के लिए कौन से संस्थागत उपाय किए जा सकते हैं?

(उत्तर 250 शब्दों में दीजिए) 15 अंक

Discuss how the crime-insurgency nexus has contributed to the rise in ethnic conflicts and insurgencies in North-East India. What institutional measures can be undertaken to address this challenge?

(Answer in 250 words) 15 marks

Insurgency is form of war against the established government to demand for separate statehood.

Crime insurgency nexus contributing to rise  
in ethnic conflicts

① Organised crime → Crimes like drug cultivation like poppy farming in

are fuelling insurgent activities.

② Support from state actors like China, Myanmar for arms via borders of India - Myanmar → leads to armed conflicts.

NEXT IAS

Pg 49

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③ Human trafficking for engaging youth into insurgent activities → leads to radicalisation and ethnic conflicts.

④ Money laundering and fake Indian currency notes to promote the insurgent activities in North-East.

⑤ Ethnic conflicts in Manipur seen recently were propelled by insurgent groups to advocate for their agendas.

⑥ Cyber security threats and cyber

of data to promote

Institutional measures that can be undertaken

① Border issues need to be resolved:

CIBMS techniques → laser ~~sensors~~ barriers,  
surveillance radars to have complete

NEXT IAS

Pg 50

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surveillance of borders.

② Resolving disputes with insurgent  
groups like NSCN, ULFA and have  
peace accords with them.

③ Development

↳ Promoting development in North East

Example . PM-DEVINE, North East

Infra Development project.

↳ IMT and Kaladan multimodal project  
for increased connectivity.

④ Reducing cultural isolation among tribes

Example : show casing of  
in Amrit Udyan.

⑤ FMR regime removal is a step in the  
right direction.

⑥ Building trust between people and government.

North East is crucial for maintaining our  
diversity and Act East Policy.

**NEXT IAS**

*Space for Rough Work*

## NEXT IAS

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*Space for Rough Work*

## NEXT IAS

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#### **DONT'S**

1. Do not write your name or registration no. anywhere inside this Question-cum-Answer Booklet.
2. Do not write anything other than the actual answers to the questions anywhere inside your QCA Booklet.
3. Do not tear off any pages from your QCA Booklet, if you find any page missing do not fail to notify the supervisor/invigilator.
4. Do not leave behind your QCA Booklet on your table unattended, it should be handed over to the invigilator after conclusion of the exam.

#### **DO'S**

1. Read the Instructions on the cover page and strictly follow them.
2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
3. Write legibly and neatly. Do not write in bad/illegible handwritings.
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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## NEXT IAS

### 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

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।

