

TEST CODE 7 1 3 3 0 4

MGP 2024

Time Allowed : Three Hours

समय : तीन घंटे

Forum IAS

Maximum Marks : 250

अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	PRATEEK MISHRA		
Roll No./अनुक्रमांक	1910140173	Medium/माध्यम	English ☒ हिंदी ☐
Center Code/परीक्षा केंद्र	ONLINE	Date/दिनांक	09/09/2024

*Center Code : For Online - 1900 / Delhi : Karol bagh - 1901, ORN - 1902, Mukharji Nagar - 1903 / Patna : Boring Rd. - 2001 / Hyderabad : Jawahar Nagar - 2101

INDEX TABLE / अनुक्रमणिका			INSTRUCTION / अनुदेश	
Q. No. प्र.सं.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक	1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet. कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें। 2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory. उत्तर पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं। 3. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं। 4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. उत्तर प्रवेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए। 5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off. प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।	
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			4:00 pm	7:00 pm.
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि : ONLINE	Online/ऑनलाइन ☒ Offline/ऑफलाइन ☐
*Examiner's Discretion is the marks awarded at the discretion of the examiner based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy. मूल्यांकन कर्ता का विवेक अंक, आपकी लिखावट, प्रस्तुति, आरेखों के उपयोग, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आया के आधार पर (लेकिन इनहीं तक सीमित नहीं) पर दिए गए अंक हैं।			For Office Use Only / केवल कार्यालय प्रयोग हेतु	
ECN CODE/ ईसीएन कोड :			EG/ईजी :	Evaluation Date/ मूल्यांकन तिथि :
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Note: Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion class the tests are also available online in your portal to aid in your preparation. Further, students are requested to see the copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and means to improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS - Answered What Is Asked**, This means whether you have addressed the core demand of the question or not. Addressing the core demand question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first attempt. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjective assessment.
2. **CD & VA - Content Density & Value Addition**. Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of (but not all!) suggestions, quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.
3. **S & F - Structure & Flow** - Whether you have structured your answer properly or not. Whether the answer has been broken into parts and sub-parts, each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.
4. **P & R - How your answer performs on the criteria of presentation, ease of read, clarity and apparent effort in writing the answer**. This affects subjective components of assessment.

Q.1) Why has there been an increased focus on negotiating, renegotiating and concluding Free Trade Agreements (FTAs) by India in recent years? (10 marks, 150 words)

ल के वर्षों में भारत द्वारा मुक्त व्यापार समझौतों (FTAs) पर बातचीत, पुनर्वार्ता और समापन पर ध्यान क्यों दिया जा रहा है? (10 अंक, 150 शब्द)

Free Trade Agreements (FTAs) are bilateral arrangements to facilitate trade and investment at mutually beneficial terms which involves reducing duties on trade items.

FTAs concluded or negotiating recently

- India-UAE CEPA
- India-Australia ECTA
- India-EFTA TEPA
- India-UK FTA
- India-EU FTA

} negotiating stage

Reasons for increased focus on FTAs in recent past

- ① Expansion to newer markets and consolidation of old ones
- ② Mutually agreed terms of trade with the biggest trading and investment partners.
- ③ In line with Atmanirbhar Bharat Philosophy of self reliance - securing of supply chain.

- ④ handicapped multilateral trade blocks
such as WTO due to internal divisions.
- ⑤ Fulfilling India's unique needs
 - ⑨ sourcing raw material from Australia.
→ ExpoA market consolidation in UAE.
- ⑥ renegotiating FTAs seek to increase economic
engagement : moving from FTAs to Comprehensive
Economic Partnership Agreements facilitating
investment
- ⑦ Increase Foreign Investment in Indian market
 - ⑩ India-UAE, India-EFTA. have significant investment
clause.

While FTAs cater to our unique needs,
they also highlight the need of reforms in regional
and multilateral trading blocks which have become
clogged due to rising protectionism.

2) A well-designed fiscal policy can serve as a vital instrument to facilitate the equitable distribution of resources and ensure the welfare of all sections of society. Elaborate. (10 marks, 150 words)

अच्छी तरह से डिज़ाइन की गई राजकोषीय नीति संसाधनों के समान वितरण को सुविधाजनक बनाने और समाज के सभी के कल्याण को सुनिश्चित करने के लिए एक महत्वपूर्ण साधन के रूप में काम कर सकती है। विस्तार से वर्णन कीजिए। (10 अंक, 150 शब्द)

A well designed fiscal policy aims to optimise the revenue and expenditure such that it accrues greatest benefit for maximum number of people.

Facilitate equitable distribution of resources

① Social justice → expenditure towards scheme focussing on welfare of the vulnerable

(eg.) Pm Awasz Yojana, Gram Sadak Yojana.

② Incentivise investment → tax rate cuts, interest subventions for the corporates to expand business and grow.

③ Empower the women → improving financial capabilities, expanding employment opportunities
(eg.) SHG-Bank linkage programme

④. Agriculture investment → ensuring better returns to the farmers, reducing rural distress

(e.g.) minimum support price, irrigation subsidy, PM KISAN.

⑤. Skill development for the youth → improve employability and reaping demographic dividend

(e.g.) PM Kaushal Vikas Yojana, Employment linked guarantee scheme.

⑥. Poverty upliftment → tackling issue of multidimensional poverty

(e.g.) PM Garib Kalyan Anna Yojana, Jan Dhan Yojana

⑦. handhold small businesses and MSMEs → to

improve their scale of operation, generate employment

(e.g.) Extended credit line guarantee scheme during covid.

~~⑧. Labour laws~~

⑧. Fiscal consolidation to facilitate crowding in

(e.g.) ~~with~~ declining Fiscal deficit [9.4% (2020) → 5.1% (2024)]

Such a fiscal policy ensures the dictum of 'Sabka Saath Sabka Vikas' - Inclusive growth.

Q.3) What are the primary factors contributing to India's significant reliance on imported edible oils? What measures do you suggest to increase domestic production and to reduce India's reliance on imported edible oils?

आयातित खाद्य तेलों पर भारत की महत्वपूर्ण निर्भरता में योगदान देने वाले प्राथमिक कारक क्या हैं? घरेलू उत्पादन बढ़ाने और आयातित खाद्य तेलों पर भारत की निर्भरता को कम करने के लिए आप क्या उपाय सुझाएंगे?

(10 marks, 150 words)

(10 अंक, 150 शब्द)

India imported 57% of its edible oil requirement totalling \$16 billion of import bill in the last fiscal.

Primary factors contributing to India's significant reliance on imported edible oil

- ① high population leading to higher demand of edible oil
- ② growing food processing market necessitating higher use of edible oil specially oil palm.
- ③ low domestic production which can meet the demands of consumption
- ④ cost competitive imported oil owing to low import duties on palm oil from Indonesia, Malaysia

measures to increase domestic production and reduce import dependence

- ① increase area under cultivation (eg.) national mission on edible oil - oil palm seeks to increase area under cultivation in North East and Andaman
- ② higher MSP increase on edible oils to ~~push~~ nudge farmers to diversify
- ③ CAGR in MSP of oil seeds is 29-34% as compared to 6-8% on wheat - rice.
- ④ health consciousness should be increased to highlight the ill impacts of palm oil on health.
- ⑤ usher into a new age yellow revolution as the previous revolution in 1980s reaped benefits.

Government's efforts have ensured area under cultivation has increased from 25 mha to 31 mha in past five years with import demand down from 63% to 57% in the same period.

4) With the growing water crisis in India, micro irrigation offers a sustainable solution for water conservation; however, its adoption remains skewed and below its potential. Discuss.

(10 marks, 150 words)

भारत में बढ़ते जल संकट के साथ, सूक्ष्म सिंचाई जल संरक्षण के लिए एक स्थायी समाधान प्रस्तुत करती है; हालाँकि, इसका उपयोग अभी भी विषम है और इसकी क्षमता से कम है। चर्चा कीजिए।

(10 अंक, 150 शब्द)

India is facing a deep water stress with per capita availability down to ~1400 cubic meter per annum from around 5000 during independence.

micro irrigation offers a sustainable solution

- limits ground water usage - 90% groundwater used in agriculture
- improves resource use efficiency
- preserves soil health by preventing leaching and salinity.
- suitable in rainfed areas where extension of canals is difficult and water table is down

adoption remains skewed and below its potential

① high upfront cost in installation of micro irrigation systems.

② high irrigation subsidy → no incentive for farmers

to change mode and shift to microirrigation
(₹1.2 lakh crore irrigation subsidy in 2024-25)

- ③ technical challenges in maintenance and repairing micro irrigation systems
- ④ permanent pipes for drip and sprinkler irrigation are prone to damage during harvesting and ploughing.
- ⑤ resistance to change from the farmers to adopt to new systems.

→ adopt international best practices (e.g. Karnataka-Israel collaboration)

way ahead → subsidise and incentivise micro irrigation adoption with vision of "Kar Khet ko Paani"

→ FPOs and PACs to act as Kisan Samridhi Kendras and Paani Sanitis to lower installation costs

→ traditional solutions like → Bhungroo - Gujarat
→ water quotas → Ralegaon (Gujarat)

A micro irrigation fund of ₹5000 crore announced in budget 2023-24 envisions its accelerated adoption

5) The recurring railway accidents highlight the urgent necessity for addressing the myriad challenges related to safety, undercapacity and lack of modernization within Indian Railways. Analyse.

(10 marks, 150 words)

र-बार होने वाली रेल दुर्घटनाएँ भारतीय रेलवे के भीतर सुरक्षा, अल्प-क्षमता और आधुनिकीकरण की कमी से संबंधित संख्य चुनौतियों के समाधान की तत्काल आवश्यकता को उजागर करती हैं। विश्लेषण कीजिए। (10 अंक, 150 शब्द)

The past few months has seen an increase in number of train collisions and derailments highlighting safety challenges in Indian Railways.

recent rail accidents → Sabarmati express derailment
→ Coronado express collision
→ Howrah - Mumbai mail derailment
→ Kanchenjunga express derailment.

Challenges related to safety

- ① Open track access - issues of sabotaging
- ② Signal failure leading to collisions (eg Balesore accident)
- ③ No separate body to ensure safety audits of Indian railways (Kakodkar Committee suggestion)

Undercapacity

- ① Locopilot vacancy to the tune of 20000.

- ② insufficient stake supply
- ③ common routes of passenger and freight

Lack of modernisation

- ① KAVACH (Train Collision Avoidance System) has a slow rollout. only 1500 km track length kavach protected.
- ② Indian railways - triple role of board
 - regulation
 - operation
 - rule making
 Need to modernise structure
- ③ presence of level crossings.

Way ahead

- ① fill locopilot vacancy
- ② KAVACH rollout on a priority basis
- ③ plan and construct more freight corridors.
- ④ Modernise railway board in line with Kakodkar and Bibek Debroy committee recommendation

5) How does NISAR mission exemplify international cooperation in space exploration and scientific research? In what ways will it help in climate change monitoring and natural hazard management? (10 marks, 150 words)

NISAR मिशन अंतरिक्ष अन्वेषण और वैज्ञानिक अनुसंधान में अंतर्राष्ट्रीय सहयोग का उदाहरण कैसे प्रस्तुत करता है? यह वायु परिवर्तन की निगरानी और प्राकृतिक आपदा प्रबंधन में किस तरह से मदद करेगा? (10 अंक, 150 शब्द)

NISAR stands for NASA-ISRO Synthetic Aperture Radar. It is a joint mission between two space agencies for space exploration and scientific research.

NISAR exemplifies International cooperation

- ① Studying the solar winds and electromagnetic radiations generated.
- ② techno signature mission to map radiations of earth with that of ~~sat~~ space
- ③ joint collaboration in data and systems sharing.
- ④ Using the data obtained for mutual benefit such as climate change, emission intensity
- ⑤ Aid in disaster risk reduction through hazard zone mapping.

Feed
For OFFICE

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CD & VA
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help in climate change monitoring

- ① mapping of ^{high} emission zones and analysing the causes
- ② study melting of polar ice caps - rate and extent of melting
- ③ identify instances of forest fires.
- ④ monitor sea level rise on a real time basis
- ⑤ study weakening of currents winds, jet streams.

hazard management

- ① Study extent of earthquake and other such disasters
- ② alert regarding volcanic eruptions both on land and underwater
- ③ Early warning system for Tsunamis, cyclones, etc.

NISAR paves way for future space collaboration to tackle climate change and disasters among various space agencies.

Nuclear technology can play a transformative role in enhancing food security and agricultural sustainability. Discuss. (10 marks, 150 words)

एणु प्रौद्योगिकी खाद्य सुरक्षा और कृषि स्थिरता को बढ़ाने में एक परिवर्तनकारी भूमिका निभा सकती है। चर्चा कीजिए। (10 अंक, 150 शब्द)

India aims to triple its nuclear power generation by 2030 which has spillover effect on several other sectors.

Nuclear technology enhancing food security

- ① Nuclear energy reduces harmful emissions thereby improving crop growth
- ② High energy intensity, frees up land for expanding agriculture. - biogas plants require 8000 times the land area for nuclear power plants
- ③ Increased energy output which can be used in maintaining cold storages, etc.
- ④ Low cost of energy production bringing down food affordability through low cost irrigation and power.

5. killing pathogens through nuclear irradiation improving food safety.

enhancing agricultural sustainability

- ① greater investment in agriculture owing to low import bill from hydrocarbons (petroleum)
- ② Nuclear irradiation to provide safer pesticides thereby improving growth
- ③ Aid in growing of organic farming by safe tackling of insects and pests e.g. sterilisation

Nuclear technology can help in achieving SDG 2 - Zero Hunger.

8) Increasing frequency of forest fires in India underscores the urgent need for sustainable forest management practices. In light of the statement, bring out the causes and multidimensional impact of forest fires. Also, suggest measures for their prevention and management. (10 marks, 150 words)

रत में जंगल की आग की बढ़ती आवृत्ति स्थायी वन प्रबंधन प्रथाओं की तत्काल आवश्यकता को रेखांकित करती है। इस धन के प्रकाश में, वनाग्नि के कारणों और बहुआयामी प्रभावों का उल्लेख कीजिए। साथ ही इनकी रोकथाम और प्रबंधन के ाय भी सुझाएं। (10 अंक, 150 शब्द)

As per NDMA, 35% of India's forests are susceptible to fires.

Causes of forest fires

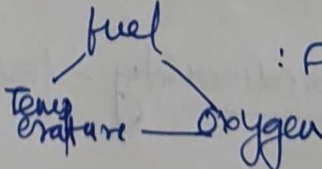
- ① Rising temperature due to global warming coupled with drought → sparks in dry leaves.
- ② waste burning practices by locals around the forests.
- ③ unsustainable tourism - campfires, matchsticks, lighters left around which causes fires.
- ④ Slash and burn agriculture practice

Impact of forest fires

- ① loss of pristine biodiversity - trees and animals
- ② Emission of Greenhouse gases like CO_2 , methane, etc. leading to global warming.

- ③. Altered landscape in and around forests causing land use change.
- ④. Loss of livelihood for forest dwellers who sustain on minor forest produce sale.
- ⑤. Health issues for the locals by inhaling dangerous fumes and particulate matter.

Measures for prevention and management

- ①. Burn lines in forests to prevent spread of fire.
- ②. Satellite tracking of forest fires. ③. Forest Fire Alert System (FAST) by NASA+ISRO+Forest survey of India.
- ③. Sustainable and eco tourism practices - safe waste disposal.
- ④. Fire safety drills for forest dwellers and disaster relief forces.
- ⑤. Cutting off one of  : Fire triangle.

Early warning detection system using remote sensing satellites, insulated electric lines, can prevent spread of forest fires.

9) What reasons can be attributed to the recent surge in terror related violence in Jammu and Kashmir? What strategies would you suggest to counter it?

(10 marks, 150 words)

मू-कश्मीर में हाल ही में आतंकवाद से संबंधित हिंसा में वृद्धि के क्या कारण हो सकते हैं? इसका मुकाबला करने के लिए क्या रणनीति सुझाएंगे?

(10 अंक, 150 शब्द)

Recently, terror incidents in Jammu regions of Reasi, Poonch have seen a surge with terrorists targeting security personnels and pilgrims.

Reasons behind recent surge

- ① Security force vacuum in the area due to mobilisation at LAC.
- ② Rugged terrain of Jammu in the south of Pir Panjal range.
- ③ Attempts by adversaries to gain the lost ground due to peace in Kashmir valley since A-370 abrogation.
- ④ High end weapons made in America which are with the insurgents who were earlier fighting Taliban.

⑤ lack of local intelligence (eg. Gujjar Bakarwals in the past provided intelligence but new generation is not much involved.

⑥ varied demography of the Tamru region making spotting of outsiders difficult.

⑦ Attempt to thwart peace in the region which witnessed high voter turnout (54%) in the recent general election.

Strategies to counter

① Troop deployment - recently Assam Rifles has been additionally deployed in Tamru.

② Infrastructure development in the region for quick mobility of troops.

③ develop local intelligence and tackle grievances of status issue of the Gujjar Bakarwals.

④ Technology interventions - Drone survey, ~~barbed~~ fencing.

The upcoming election in J&K aim to restore local democracy post abrogation. Thus security needs to be strengthened

Q.10) In the light of recent events, throw light on the possible implications of 'cyber slavery' on internal security of India. (10 marks, 150 words)

हाल की घटनाओं के आलोक में, भारत की आंतरिक सुरक्षा पर 'साइबर स्लेवरी' के संभावित प्रभावों पर प्रकाश डालिए।

(10 अंक, 150 शब्द)

Cyber slavery refers to using the cyberspace to control and monitor user activity ensuring their complete dependence upon cyberspace which is controlled by a handful of 'masters'

Possible implications of cyber slavery on internal security of India

- ① Disruption of logistics operations eg. Air traffic disrupted due to recent Microsoft glitch
- ② Threatened critical infrastructure eg. Denial of service attack on Mumbai power grid in 2020.
- ③ Control of user data eg. reports of data of 50 crore farmers on dark web.
- ④ Ransomware attacks jeopardising sensitive information eg. Kudankulam nuclear power plant cyber attack in 2019.

⑤. 'coloured revolution' through manufactured content by social media giants (eg. alleged role of Facebook targeting user sentiments in recent Bangladesh crisis).

⑥. Data mining and illegal extraction of user data

(eg. TikTok ban by Indian government).

way ahead

- ① develop indigenous systems to limit dependence on foreign systems.
- ② monitoring of social media with strict compliance with IT Rules 2021.
- ③ strengthen cyber security architecture → hire 50000 skilled professionals in line with cyber security policy of 2013.

→ ④ develop a national social media policy in line with cyber security policy which too needs update.

→ ⑤ practice good cyber hygiene to ensure data privacy (eg. microsoft report suggests 80% Indians use public wifi to access sensitive information).

care must be taken to ensure an egalitarian and safe cyber space.

11) "The liberalization policies of 1991 significantly enhanced India's economic dynamism, but the evolving global and domestic landscape necessitates 'Reforms 2.0' for sustained economic development and prosperity." Comment. (15 marks, 250 words)

1991 की उदारीकरण नीतियों ने भारत की आर्थिक गतिशीलता को महत्वपूर्ण रूप से बढ़ाया, लेकिन उभरते वैश्विक और घरेलू परिदृश्य में सतत आर्थिक विकास और समृद्धि के लिए 'सुधार 2.0' की आवश्यकता है। टिप्पणी कीजिए। (15 अंक, 250 शब्द)

Past economic liberalisation of 1991, India has grown at CAGR of 7% in past two decades to have become the 5th largest global economy.

Evolving global and domestic landscape

- ① Technology growth → Emerging and disruptive technology like AI, ML had brought an era of Industrial Revolution 4.0.
- ② Climate change → and rising focus on Sustainable economy, green energy, etc.
- ③ Increased inequality due to market led growth. Oxfam reports India as among the most unequal nations.

④ Supply chain disruptions → due to warfare and rising protectionism eg. Red sea crisis

⑤ economic downturns of 2008 and covid-19 shifted focus on self reliance

Reforms 2.0 for sustained economic development and prosperity

① Sustainable growth

a) climate smart agriculture to focus on ecoregreen revolution amidst climate change

b) push to green energy and increasing renewable potential. (500GW target by 2030)

② Employment driven growth as India has experienced jobless growth since 1991 (Jobs growth at CAGR of 2%)

③ Focus on self reliance through Atmanirbhar Bharat and limited ^{govt.} presence only in strategic sectors (space, nuclear, banking, etc)

- ④ Easing land acquisition - digital record keeping (SUAKHVA) for improved ease of doing business
- ⑤ Contract enforcement streamlining - one nation one contract.
- ⑥ Implementing labour law reforms to give impetus to labour intensive growth.
- ⑦ Improve logistics sector with enhanced focus of Bharatmala, national logistics policy.
- ⑧ Diversify income of farmers - reduce pressure on land.
- ⑨ Skill development to reap the demographic dividend.

Reforms 2.0 can give India the first mover advantage in sustainable economy taking us further towards our 'Viksit Bharat Sankalp' by 2047.

Feedback

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Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.12) Infrastructure development is essential not just for economic transformation but also for sustainable development and societal well-being. Elaborate with examples. (15 marks, 250 words)

बुनियादी ढांचे का विकास न केवल आर्थिक परिवर्तन के लिए बल्कि सतत विकास और सामाजिक कल्याण के लिए भी आवश्यक है। उदाहरणों के साथ विस्तार से समझाइए। (15 अंक, 250 शब्द)

Infrastructure development has picked pace in India in last five years with government provisioning ₹11.11 lakh crore (3.4% of GDP) on infrastructure capital expenditure in budget 2024-25.

Infrastructure development $\Rightarrow$ economic transformation

- ① Reduces logistics cost - currently at 14% of GDP
- ② Eased doing business improved with better road, electricity and communication connectivity.
- ③ Agriculture growth by post harvest infrastructure development (storage, & marketing).
- ④ Improves last mile connectivity of people with

markets eg. PM Gram Sadak Yojana connects fields to Gramin Agriculture Markets.

- ⑤ Post led infrastructure development improves potential of India as a transshipment hub
- ⑥ Employment generation due to infrastructure creation.

Infrastructure $\Rightarrow$ Sustainable development

- ① Improves resource use efficiency but reducing transit time and losses (eg. truck waiting time)
- ② Green energy plants - solar, wind mills, biogas plants construction for clean energy
- ③ waste utilisation in construction eg. plastic and land fill waste in road construction
- ④ reduce emission intensity $\rightarrow$ electrification of railways, electric vehicles

Infrastructure $\Rightarrow$ societal well being

- ① Improved standard of living eg. PM Awas Yojana
- ② Better access to amenities eg. Household tap water connection via Jal Jeevan Mission
- ③ Improved healthcare facility eg. Community Health Centres.
- ④ Improved education facilities eg. PM SHRI schools
- ⑤ Digital connectivity via broadband and mobile towers
- ⑥ Improved labour mobility via all weather roads.
- ⑦ Electricity saturation eg. SAUBHAGYA Yojana

Infrastructure development causes crowding in of private investment giving impetus to economic growth

Q.13) Bring out the significance of aquaculture towards nutrition security, livelihood generation, and economic growth. Also, mention various measures taken by the government to promote aquaculture in the country. (15 marks, 250 words)

पोषण सुरक्षा, आजीविका सृजन और आर्थिक विकास के लिए जलीय कृषि के महत्व पर प्रकाश डालिए। साथ ही, देश में जलीय कृषि को बढ़ावा देने के लिए सरकार द्वारा उठाए गए विभिन्न उपायों का उल्लेख कीजिए। (15 अंक, 250 शब्द)

India became world's third largest fishery producer with fishery sector growing at a CAGR of 14%.

aquaculture => nutrition security

① fulfills food security needs of coastal area population and hinterland → protein requirement

② aquaculture supported with kelp cultivation ~~fish~~ fulfills vegan dietary requirements and as nourishment fodder for livestock

Livelihood generation

① 7500 km coastline → provides employment opportunity to people in coastal areas

- ② Inland fishery production is double that of marine fishery → diversifies income streams and reduces disguised unemployment ~~at~~ from agriculture

Economic growth

- ① fishery sector accounts for 10% of India's export market
- ② accounts for over 30% of agricultural GVA
- ③ processing plants and industries improve value addition in fisheries → higher income returns.

Measures taken by government

- ① PM Matsya Sampada Yojana → promote fish processing of aquaculture products.
→ improved marketing, storage and branding

2. Kisan Credit Card (KCC) extended to aquaculture farmers for formal credit
3. ₹ 600 crore sanctioned for fishery development under Matsya Sampada in budget 2024
4. Development of local ponds, lakes, etc to carry out fishery cultivation
5. Research and development with regard to better feed and nursery to grow fishes (gene banks setup).
6. Export support via remission of duties (BODTEP), logistics (SAGARMALA) and branding facilities.

India's fishery sector has immense potential which can further be tapped by following Dilip Kumar Committee recommendations

Feedback

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Please put tick marks in the above table.

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TOTAL MARKS	
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Q.14) The MSP system, though well-intentioned, has led to market distortions and ecological stress necessitating reforms to make it more inclusive and efficient. Examine. (15 marks, 250 words)

MSP प्रणाली, हालांकि अच्छी नीयत से बनाई गई है, लेकिन इसने बाजार में विकृतियां और पारिस्थितिकी तनाव पैदा किया है, जिससे इसे और अधिक समावेशी और कुशल बनाने के लिए सुधारों की आवश्यकता है। परीक्षण कीजिए। (15 अंक, 250 शब्द)

MSP system was brought in 1960s to provide a guaranteed income support to farmers if they did not find buyers. However, over the years it has created several challenges.

Market distortions and ecological stress due to MSP

- ① led to monoculture cropping - excessive production of wheat and rice.
~230 MT of wheat and rice (70% of total food grain production)
- ② demand-supply mismatch leading to distress sale by farmers
- ③ reduced export competitiveness due to higher MSP in domestic market.

- ④ Regional inequality in terms of procurement at MSP. Economic Survey 2021 → only 11% farmers benefit from MSP.
- ⑤ Higher food inflation owing to high MSP.
- ⑥ "virtual water export country" due to high MSP on rice (paddy), sugarcane.
- ⑦ cultivation in unfavourable agroclimatic zone of sugarcane in Maharashtra.
- ⑧ Excessive use of fertiliser to enhance production → soil health crisis (N:P:K ratio → 14:3:1 instead of 4:2:1).
- ⑨ heavy extraction of groundwater → 80% of Punjab blocks are in 'dark zones'.
- ⑩ Indigenous varieties have vanished → increased risk of crop loss due to pest attack.

reforms to make it more inclusive and efficient

- ① Nudge economics → incentivise diversification of crop by higher MSP increase in pulses, oilseeds
- ② Replace MSP by minimum Reserve price (MRF) (Ayog suggestion) → auction
- ③ Price Deficiency payment scheme can lead to diversification
- ④ Allow contract farming → higher upfront remuneration to farmers
- ⑤ Prioritise investment over remuneration in farming (Madhwa Committee)
- ⑥ Increase network of APMC markets (currently 6000 as against 22000 recommended by Shanta Kumar Committee).

MSP provides income support to the farmers, however changing time necessitates reforms such as technology adoption (eNAM) and diversifying income

Q.15) Biotechnology holds immense potential for achieving sustainable food production, efficient waste management and significant advancements in human health. Elucidate. (15 marks, 250 words)

जैव प्रौद्योगिकी में टिकाऊ खाद्य उत्पादन, कुशल अपशिष्ट प्रबंधन और मानव स्वास्थ्य में महत्वपूर्ण प्रगति हासिल करने की अपार संभावनाएं हैं। स्पष्ट कीजिए। (15 अंक, 250 शब्द)

Biotechnology involves modification of biological systems, processes or organisms to make them suitable to perform tasks for humans.

Biotechnology potential in sustainable food production

- ① High yielding variety of seeds can be produced improving production and productivity.
- ② Bio fertilisers to provide nutritional support to plants limiting chemical usage.
- ③ Transgenic crops for higher yield e.g. Bt Cotton, GM Mustard.
- ④ Biotechnology intervention in pest control in cultivation and storage.

- ② Biofortification of seeds to better nutrition in crops.

Efficient waste management

- ① Bio gas plants → waste to energy conversion using biotechnology solution.
- ② Bioremediation of organic waste e.g. oil voracious (oil zipper bacteria) for oil spill cleaning
- ③ Biotechnology solution for plastic dissolution e.g. lab created bacteria which can decompose plastic.

Advancement in human health

- ① Medicine and vaccine development e.g. Covishield (Adenovirus vector vaccine)
- ② Nutrition pills to fulfill nutrition requirements e.g. fish oil tablets.

(Don't Write anything in this Area / इस स्थान पर कुछ न लिखें)

- ③ Treatment of genetic diseases such as muscular atrophy
- ④ CRISPR-Cas9, TALENs, Zinc finger nuclease for gene silencing and targeted drug delivery
- ⑤ CAR-T cell therapy for cancer treatment
- ⑥ Prevention of zoonotic diseases like rabies, etc.
- ⑦ organ transplantation of pig's heart - Xenotransplantation

Concerns → Biological leaks of coronavirus
 → Bio warfare
 → Interference with body's DNA
 → Immune system rejection.

Biotechnology research can aid in achieving SDG 11 (zero hunger) along with SDG 12 (responsible consumption and waste management)

Feedback

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TOTAL MARKS	
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Q.16) Climate change is leading to significant alterations in ecosystems, resulting in cascading effects on biodiversity, ecosystem services, and human livelihoods, necessitating integrated approaches to conservation and climate adaptation. Analyse. (15 marks, 250 words)

जलवायु परिवर्तन के कारण पारिस्थितिकी तंत्र में महत्वपूर्ण परिवर्तन हो रहे हैं, जिसके परिणामस्वरूप जैव विविधता, पारिस्थितिकी तंत्र सेवाओं और मानव आजीविका पर व्यापक प्रभाव पड़ रहा है, जिसके कारण संरक्षण और जलवायु अनुकूलन के लिए एकीकृत दृष्टिकोण की आवश्यकता है। विश्लेषण कीजिए। (15 अंक, 250 शब्द)

IPCC AR6 report suggests that the world is facing increase in global average temperature by 3°C over pre-industrial level by 2100 due to climate change and global warming.

Climate change → significant alterations in ecosystems

- ① Ocean acidification → ~~coral~~ coral bleaching
- ② Forest fires → biodiversity and animal life loss
- ③ Arctic melting → alteration in Tundra ecosystem (Permafrost melt)
- ④ Glacier melt → floods (glacial lake outburst) and landslides in mountains
- ⑤ Altered climate (too heavy or too less rainfall) in tropical grasslands.

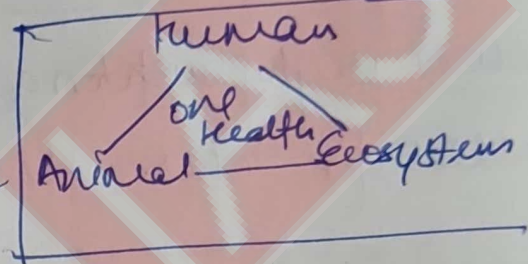
cascading effect on biodiversity, ecosystem services and human livelihoods

- ① corals are called rainforests of oceans → bleaching leads to mass fish extinction
- ② lower phytoplankton growth → reduced fodder for fishes.
- ③ Increase in jellyfish population → ocean scavengers
- ④ threatened native trees and animal species of mangrove ecosystem
- ⑤ Regulatory services of ecosystem affected due to weather variabilities - uneven rainfall, etc.
- ⑥ provisioning services → reduced productivity of ecosystems
- ⑦ cultural services → thwarted due to pollution, etc.
- ⑧ Increased man-animal conflict - loss of human life
- ⑨ Climate change induced disasters - loss of livelihood e.g. Wayanad landslide.

- (16) Agriculture crop failure due to drought or flood (livelihood loss).

Integrated approaches to conservation and climate adaptation

- (1) One Health approach:
reduce instances of zoonotic disease



- (2) Integrated farming → agriculture, agroforestry, aquaculture to improve resilience

- (3) Technological solutions → ocean carbon sequestration, temperature resilient corals, resilient seed varieties

- (4) Global collaboration on mitigation and adaptation - e.g. UNFCCC

- (5) Leveraging traditional knowledge for climate adaptation

India's Lifestyle for Environment (LiFE)

Campaign is important to build resilience against and limit impact of climate change.

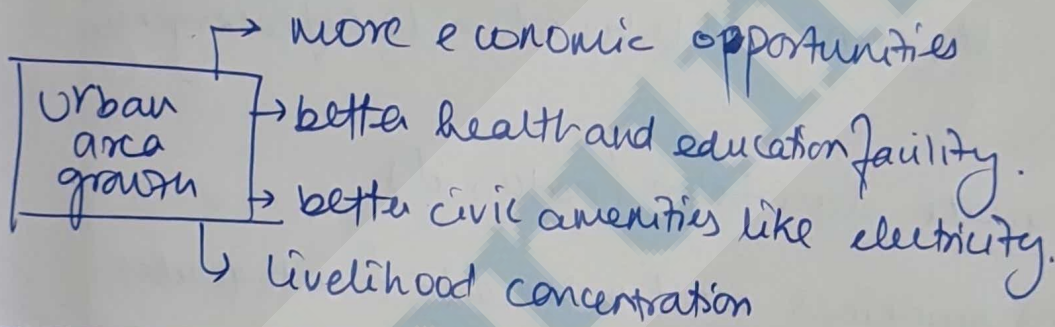
Q.17 Urban areas, often referred to as the cradle of civilization and growth engines, are increasingly experiencing various natural and man-made disasters. Discuss in the Indian context. Also, suggest suitable mitigation and management strategies.

(15 marks, 250 words)

शहरी क्षेत्रों को अक्सर सभ्यता और विकास के इंजन के रूप में संदर्भित किया जाता है, जो विभिन्न प्राकृतिक और मानव निर्मित आपदाओं का सामना कर रहे हैं। भारतीय संदर्भ में चर्चा कीजिए। साथ ही, उपयुक्त शमन और प्रबंधन रणनीतियों का सुझाव दीजिए।

(15 अंक, 250 शब्द)

As per estimates, urban population is slated to rise upto 40% by 2038. It further exacerbates the urban resources paving way for disasters.



Urban areas facing disasters

(I) Urban Heat Island (Natural + manmade)

- due to excessive concentration of urban areas
- buildings in close proximity - amplifying temperatures
- emissions from ACs, industries further increase temperature

(I) Urban flooding (manmade + natural)

- a) reduced green cover and lake encroachment
- b) lack of stormwater drainage
- c) poor regulation of building laws - construction in river catchment area

(II) Urban building fires (manmade)

- a) close squandered buildings
- b) poor ventilation and low quality wiring.
- c) fire safety norms not followed → lack of emergency exits.

(IV) Earthquake devastation (natural)

- a) high rising buildings most vulnerable to earthquakes
- b) not following seismic zone codes while construction.
eg. Delhi in seismic zone IV

Mitigation and management strategies

- ① depopulate concentrated spaces - satellite town development to reduce damage intensity
- ② follow building codes - fire norms ~~etc~~

- seismic zone regulations in construction.
- ③ green areas - urban forestry measures like Miyawaki technique
 - ④ pumped storage of groundwater aquifer recharge
 - ⑤ decongest close residential complexes of alternative site for coaching institutes proposed in Delhi
 - ⑥ sustainable building material to limit damage of use of bamboo, etc.
 - ⑦ reduce cooling demand (India cooling action plan) - reduce heat island effect
 - ⑧ Disaster risk preparedness - training to population during disaster.

City master plans should be drafted keeping in mind disaster preparedness and sustainable measures of Bhopal master plan

Feedback

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Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS

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Q.18) "India's disaster management framework has made significant progress in the 21st century yet challenges persist in ensuring timely response and effective coordination during crises." Comment. (15 marks, 250 words)

“भारत के आपदा प्रबंधन ढांचे ने 21वीं सदी में महत्वपूर्ण प्रगति की है, फिर भी संकट के दौरान समय पर प्रतिक्रिया और प्रभावी समन्वय सुनिश्चित करने में चुनौतियां बनी हुई हैं।” टिप्पणी कीजिए।
(15 अंक, 250 शब्द)

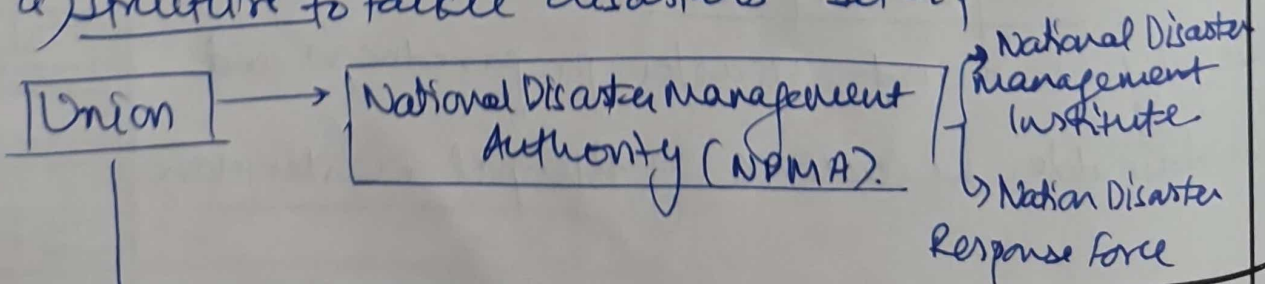
India's disaster management framework has shifted focus from disaster response to disaster preparedness and mitigation in the past two decades. -

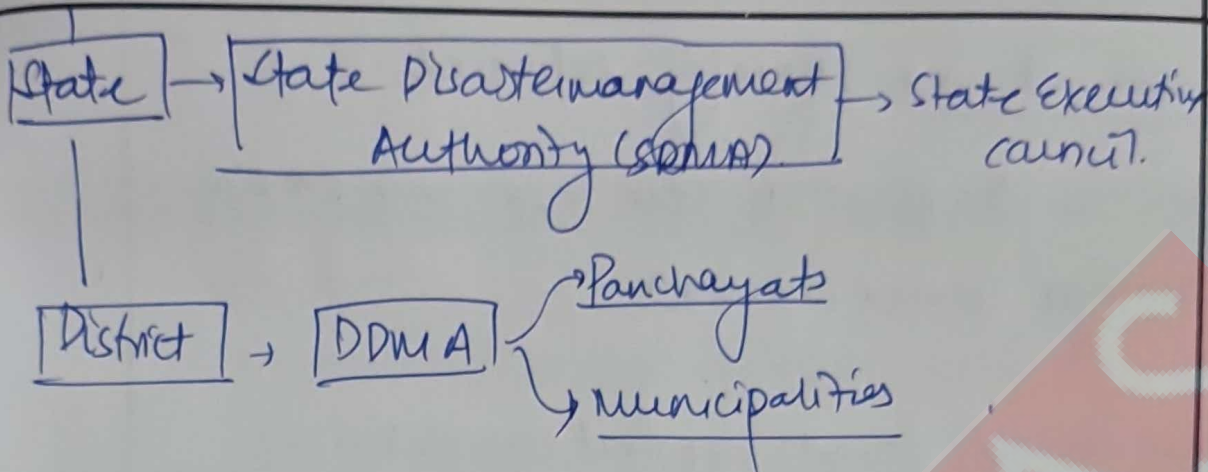
Disaster management framework - significant progress

① Shift from reactive approach to proactive developmental approach covering entire cycle of disaster (mitigation, preparation, response, recovery)
pre disaster post disaster

⑤ National Disaster management Act 2005 passed

a) Structure to tackle disasters setup.





b) Funds created:

- National Disaster Response Fund
- State Disaster Response Fund

Challenges persist

- ① NDMA overburdened
- ② overlapping jurisdiction of NDMA, Cabinet Committee on Security
- ③ use of funds for mitigation not allowed
- ④ administrative inefficiencies (CAQ Report)
 - ↳ project delays.
 - ↳ delay in fund release
 - ↳ SDMA not formed y. Jharkhand.
- ⑤ Federalism issues eg. as witnessed during Covid-19 crisis.

- ⑥ Compensations not timely delivered.
- ⑦ poor emphasis on disaster insurance (< 1% of damages covered in India)
- ⑧ time bound targets of project completion not defined
- ⑨ Role of corporates and civil societies not outlined
- ⑩ low emphasis on disaster risk training and including disaster in school curriculum.

way forward

- emphasis on disaster insurance
- creation of a mitigation fund
- improved interagency coordination → NDRI, IDRI
- include new disasters in notified list eg heatwaves.
- stakeholder involvement
 - government
 - corporates
 - civil societies
 - citizens.

Prime Minister's 10 point agenda on Disaster Risk Reduction should be followed which calls for international collaboration, R&D and risk mapping

Q.19) Explain how the symbiotic relationship between organized crime and terrorism further aggravates internal security concerns. What steps can be taken to address this linkage and the threats emerging from it? (15 marks, 250 words)

बताइए कि संगठित अपराध और आतंकवाद के बीच सहजीवी संबंध किस तरह आंतरिक सुरक्षा संबंधी चिंताओं को और बढ़ाता है। इस संबंध और इससे उत्पन्न होने वाले खतरों से निपटने के लिए क्या कदम उठाए जा सकते हैं? (15 अंक, 250 शब्द)

Organised crime groups and terrorists have a relationship of customer service provider with each scratching the other's back.



Symbiotic relationship between organised crime and terrorism.

- ① Terrorists infiltrate via routes of traffickers
eg. drug traffickers infiltrated Palawama terrorists
- ② Organised crime groups provide slaves, children for training (through trafficking) to the terrorists.

- ③. Terrorists taking up roles of organised criminal groups to sustain their activities
eg. Northeast insurgent groups involved in drug and arm smuggling.
- ④. Come together for common religious ideology
eg. D-company sponsors terrorists to attack in India - religious fundamentalism.

It further aggravates internal security concerns

- ①. find support from Over the Ground workers making identification difficult of Kashmir insurgents
- ②. blend in within the population - act as sleepers cells.
- ③. Twin challenge for security forces
 - dismantle network
 - prevent terrorist instances
- ④. deepens the net of black economy due to money laundering

- ⑤ makes extradition difficult as direct link with terrorism difficult to establish.

Steps to address linkage and threats emanating

- ① Bring a dedicated legislation against organised crime
- ② Coordination among security agencies - army, border security forces, police.
- ③ Development of local intelligence to identify vulnerabilities
- ④ Border security architecture → ^{outposts} laser fencing to prevent infiltration.
- ⑤ Increasing digital payment and limiting usage of cash economy
- ⑥ Bilateral extradition treaties

Following and integrating SAMADHAN approach of security forces with SMART pricing along with technological intervention can help thwart this linkage.

Feedback

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TOTAL MARKS	
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Q.20) Strengthening security apparatus in border areas and forging developmental partnerships with the locals are essential components of a robust and effective border management strategy. Discuss, with initiatives taken by the government in this regard. (15 marks, 250 words)

सीमावर्ती क्षेत्रों में सुरक्षा तंत्र को मजबूत करना तथा स्थानीय लोगों के साथ विकासमूलक साझेदारी बनाना एक मजबूत और प्रभावी सीमा प्रबंधन रणनीति के आवश्यक घटक हैं। इस संबंध में सरकार द्वारा उठाए गए प्रयासों के साथ चर्चा कीजिए। (15 अंक, 250 शब्द)

Indian government's approach towards border area has seen a shift in approach from treating them as last villages to the first villages of India.

Strengthening security apparatus and forging development partnership with locals.

* Security apparatus

- ① Strengthening border security through integrated check posts and laser fencing.
- ② mechanical fencing and Comprehensive Integrated Border management System (CIBMS) in line with Nadkarni Gupta Committee recommendation
- ③ Developing local intelligence with border area dwellers.

- ④ strengthening of signal corps to intercept communication among terrorists near the border.
 - ⑤ Drone surveillance and satellite based mapping to strengthen border security.
 - ⑥ Joint operations with neighbouring countries to dismantle training camps of insurgents near border
 of opⁿ all clear with Bhutan, operation Sunrise with Myanmar.
 - ⑦ infrastructure development - road construction by BEO for quick deployment of troops and arms etc.
 LAC border.
- Forging developmental partnerships
- ① Border Area Development Programme to provide government scheme extension to border areas
 - ② Vibrant village programme - focussing on socio-economic development along border areas (Shankar Committee)

- ③ Forging trust between locals and security forces of Operation Sadbhavana in Kashmir.
- ④ Communication services provided via mobile towers and satellite.
- ⑤ Village Defence Corps - training of locals by security forces for self defence.
- ⑥ Synergy between locals and security forces - development of local intelligence network.
- ⑦ employment and education opportunities for border locals to keep them mainstreamed with rest of population.

A synergy of technology, locals and security agencies is required to secure the border areas and thwart the threats emanating from them.

Feedback

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Mentor Feedback Questions

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- 2
- 3
- 4
- 5

Test Goal

- 1 ☐
- 2 ☐
- 3 ☐

Outcomes

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Marking Scheme

Mark	Good	Average	Below average
10 Marker	3.75 – 5.0	3.0 – 3.5	< 3.0
15 Marker	5.75 – 7.0	4.0 – 5.5	< 4.0
20 Marker	7.75 – 10	6 – 7.5	< 6
✓✓	Key / Relevant Point		
✗	Vague / Irrelevant		

* Subject to change without prior notice.

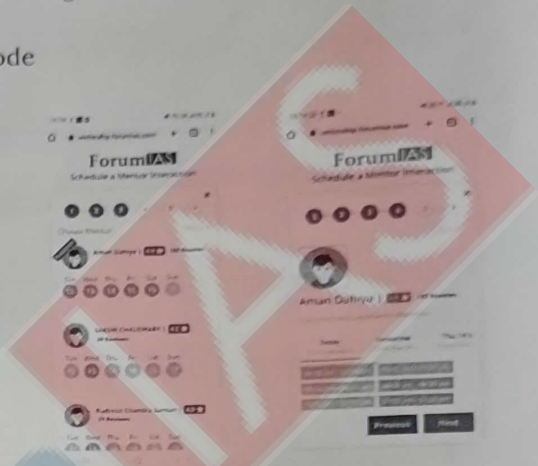
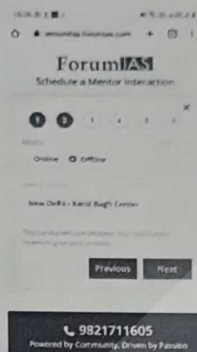
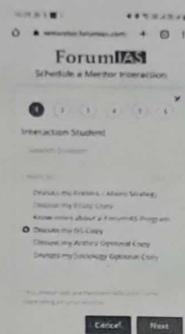
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