NEXT IAS

NEXT IAS (Head Office) : 27-B, Pusa Road, Metro Pillar no. 118, Near Karol Bagh Metro, New Delhi-110060
Bhopal Centre: Plot No. 46, ZONE-2, M.P. Nagar, Bhopal-462011
Ph: 8081300200, 8827664612 | E-mail : mts@nextias.com | **Web:** www.nextias.com

(To be filled by candidate)

Name of Candidate : MOHIT GUPTA

NEXT IAS Roll No.: AIM24GCR1OFT Date of Examination : 30/08/23

Exam Centre : Old Rajinder Nagar ☑ Bhopal ☐ Online ☐

Test Code : TC052 Program : SLT ☐ SLT+ ☑

MAIN TEST SERIES 2023
(SECTIONAL TEST-6)

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the 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.

Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

Candidates should attempt the questions strictly in accordance with the instructions specified in the question paper and in the space prescribed under each question in the booklet. Any answer written outside the space allotted may not be given credit.

Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.

.....

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. : .....

(For filling by Examiners only)

Evaluator Code :

Q.No	Pg No.	Maximum Marks		Marks	Total
1	1				
2	3				
3	5				
4	7				
5	9				
6	11				
7	13				
8	15				
9	17				
10	19				
11	21				
12	24				
13	27				
14	30				
15	33				
16	36				
17	39				
18	42				
19	45				
20	48				
Grand Total					

Signature

MACRO COMMENTS

IMPORTANT INSTRUCTIONS

CANDIDATES SHOULD READ THE UNDERMENTIONED INSTRUCTIONS CAREFULLY. VIOLATION OF ANY OF THE INSTRUCTIONS MAY LEAD TO PENALTY.

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 leaves 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.
5. If you wish to cancel any work, draw your pen through it or write "Cancelled" across it, otherwise it may be evaluated.
6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

Candidates must not write on this margin

1. बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Battery Energy Storage Systems (BESS)? Discuss its applications and how it can revolutionize the energy program of India. (Answer in 150 words) 10 Marks

Ans) BESS refers to storage technology where charge/electricity can be stored for future use. Example - Lithium Ion Batteries.

Applications of BESS

(1) Storing Renewable Energy ⇒ Green Energy. Ex: Electricity from Green Hydrogen

(2) Automobile Applications - Ex - EVs, Hybrid EVs.

(3) Industrial applications like dealing with variability of power supply.

(4) Household Application

- Storing Standalone Produced Energy - Ex - Solar Rooftop
- Emergency Supply.

Candidates must not write on this margin

BESS to revolutionize the energy program

(1) Solving the biggest weakness of Renewable Energy: (i) Dispatchability varies due to variations of supply source. (Ex): Solar & Wind Energy.

(ii) BESS can store excess energy during peak & supply during lows.

(iii) Uniform supply & easier to integrate in electricity grid.

(2) Propel for fulfilling Panchamrit Goals i.e. 500 GW of non-fossil fuel energy.

(3) Increase market demand of EVs.

(4) Decrease load on grids as standalone systems would be efficient.

BESS are integral component of India's Energy Policy & Net Zero Goal by 2070.

Candidates must not write on this margin

2. इसरो के गगनयान मिशन में हुए विकास और उपस्थित चुनौतियों पर संक्षिप्त चर्चा कीजिए। समाज के लिए मिशन के संभावित लाभ क्या हैं?
(150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss in brief developments and challenges in the Gaganyaan mission of ISRO. What are the possible benefits of the mission for the society?
(Answer in 150 words) 10 Marks

Ans 2) Gaganyan refers to manned spaceflight of ISRO which will send 3 Indian Vyomnauts into space for 3-7 days.

Developments in Gaganyan Mission

(1) Safe Re-entry test done at Sriharikota (Dual testing at sea & land).

(2) Experiment module like Pad Abort Test CARE etc. under simulations.

(3) Training of Vyomnauts Completed with Russian Collaboration.

(4) Humanoid Tests underway (Vyommitra

Challenges of Gaganyaan Mission

(1) Difficult Re-entry manouver with

Candidates must not write on this margin

phase entry trajectory.

(2) Assessment of Cosmic Radiations on human aboard → Human life at stake.

(3) Issues with Crew Escape Module.

(4) Delay in project progress.

Benefits of mission for society

(1) Launchpad to future manned missions to moon & beyond.

(2) Data Collection for feasibility of manned space programs.

(3) International impact with India being only 3rd country to send people to space & boost to Artemis Partnership.

(4) Quest for extra-terrestrial habitation.

Gaganyaan will lay out feasibility analysis & open up opportunities for future space missions.

Candidates must not write on this margin

3. ब्रह्मोस सुपरसोनिक क्रूज मिसाइल की अद्वितीय विशेषताएँ और क्षमताएँ क्या हैं, और इसने भारत की रक्षा क्षमताओं और सामरिक स्थिति के क्षेत्र में किस प्रकार योगदान दिया है?
(150 शब्दों में उत्तर दीजिए) 10 अंक

What are the unique features and capabilities of the BrahMos supersonic cruise missile, and how has it contributed to India's defense capabilities and strategic position in the region?
(Answer in 150 words) 10 Marks

Ans 3) BrahMos was made by joint collaboration of DRDO & Russian Defence Agency as Supersonic Cruise Missile

Unique Features & Capabilities of BrahMos

(1) Range: 290 Km with extension to 600 Km for BrahMos 2.0 (MTCR regime)

(2) Fire & Forget Capability: lock enemy target & autonomous deployment.

(3) Two Stage Engine: (i) Solid: Greater speed
(ii) Liquid: Greater Manoverability

(4) Speed is greater than 1 mach & accuracy is greater than 80%

Candidates must not write on this margin

Contribution of BrahMos

(1) Defense Capabilities :- (i) 3 variants for 3 forces → Land based, Ship based, Aircraft based

(ii) Deployment on maritime as well as land borders - (LAC + LoC + Naval Borders)

(iii) Quick deployment & reaction to attacks

(2) Strategic Position :- (i) Net Security Provider in region + BIMSTEC's security partner.

(ii) Indigeneous Technology → Increase self reliance in defence.

(3) Collaboration :- Sold BrahMos to Vietnam leading to bilateral cooperation.

BrahMos is a strategic masterpiece protecting national security interests.

Candidates must not write on this margin

4. समुद्र की गहराई का पता लगाने और उसमें मौजूद संसाधनों का दोहन करने के देश के प्रयासों के अनुरूप, भारत सरकार ने गहरे समुद्र में अन्वेषण मिशन 'समुद्रयान' का प्रस्ताव रखा है। यह मिशन देश में समुद्र विज्ञान और प्रौद्योगिकी की प्रगति में किस प्रकार योगदान दे सकता है?

(150 शब्दों में उत्तर दीजिए) 10 अंक

In line with the country's efforts to explore the depths of the ocean and harness the resources it holds, the Indian government has proposed a deep-sea exploration mission Samudrayaan. How can this mission contribute to the advancement of ocean science and technology in the country?

(Answer in 150 words) 10 Marks

Ans 4) Samudrayaan is manned deep ocean program with exploration target at depth of 6000m on ocean floor.

Samudrayaan impacts on ocean science & technology

(1) Resource Exploration → Deep ocean minerals.
- Deep ocean metallic nodules
- Possible Hydrocarbon reserves

(2) Topography assessment & impact of ocean relief on ocean movements.

(3) Marine biodiversity significantly varies with increasing depth. Exploration has potential for pharmaceuticals, cosmetics etc.

Candidates must not write on this margin

(4) Technological aspect :- (i) Developing high pressure sustainable materials.

(ii) Use of nanotech for designing vehicle.

(iii) Testing wave communication & distortions at greater depth.

(5) Potential for seismic analysis - as ocean beds are most tectonically active.

(6) Discovering and analysing ocean stratification - impact on climate & ocean currents.

(7) International collaboration & data sharing for ocean technologies.

Samudrayaan will reveal deep ocean secrets & unravel resource potential of oceanbed for economic development.

Candidates must not write on this margin

5. हाल ही में जोशीमठ, उत्तराखंड में आई आपदा के आलोक में, हिमालय क्षेत्र में आपदा प्रबंधन और पर्यावरण संरक्षण के लिए मुख्य सबक क्या हैं?
(150 शब्दों में उत्तर दीजिए) 10 अंक

What are the key lessons for disaster management and environmental conservation in the Himalayan region, in light of the recent disaster in Joshimath, Uttarakhand? (Answer in 150 words) 10 Marks

Ans) Himalayan Region are youngest folded mountain - fragile & one of the most tectonically active regions of world as evident from Joshimath land cracking.

Key lessons for Disaster Management

① Mitigating anthropogenic causes - reckless construction of Hydro projects & tunnel constructions induce disaster.

② Focus on Early Disaster warnings. Ex - 1986 Report on impending disaster was ignored.

③ New forms of disaster require in depth analysis & better mitigation strategies.

Candidates must not write on this margin

④ Rehabilitation post rescue is important

Ex- Provision of only temporary facilities for Joshimath people.

⑤ Impact of river systems for weakening land & soil erosion threatening landslides.

Key lessons for Environmental Conservation

① Responsible Anthropocentrism
- Planned urbanisation
- Minimising Construction
- Harmony with Nature especially in hilly areas

② Proper Environment Impact Assessment for determining Carrying Capacity.

③ Violation of safety norms due to hydro projects in hills.

④ Impact of environmental disturbance on human settlements.

Joshimath urges us to Block Sustainability in hilly areas.

Candidates must not write on this margin

6. कोविड–19 महामारी ने सार्वजनिक स्वास्थ्य में आपदा प्रबंधन के महत्त्व पर प्रकाश डाला है। महामारी और अन्य संक्रामक रोग के प्रकोप के प्रबंधन के लिए प्रमुख रणनीतियों और चुनौतियों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

The COVID-19 pandemic has highlighted the importance of disaster management in public health. Discuss the key strategies and challenges for managing pandemics and other infectious disease outbreaks. (Answer in 150 words) 10 Marks

Ans) With loss of lives, economic activities & distressed Rural-urban structure, Covid-19 exposed vulnerabilities of public health infrastructure during pandemics.

Key Strategies for managing pandemics

(1) Restricted movement of people - nationally & internationally to prevent infection.

(2) Real time monitoring of live cases & R-Ratio.
Ex:- Dashboard of active cases.

(3) Mobilizing governance Resources at all levels (3 tier) to mitigate impacts.

(4) Robust awareness & information channels as only way to mitigate spread & misinformation.

Candidates must not write on this margin

(5) Proactive provisioning of medical facilities - (Ex) P.o- Oxygen Cylinders & Ventilators in advance.

(6) Global Cooperation for knowledge sharing & risk alert (new variants)

Challenges to managing pandemics

(1) Difficulty to contain movement.

(2) Late actions due to lack of information i.e. reactive approach.

(3) Limitation of infrastructure & medical facilities.

(4) Difficult to design program for vulnerable sections like poor, remote villages etc.

(5) Competition between need of opening economy Vs Confining infection.

India's proactive response & Janbhagidari were key to successful fight against Covid.

Candidates must not write on this margin

7. "पंजाब में हालिया कट्टरपंथी रुझानों से पता चलता है कि खालिस्तान का मुद्दा अभी भी उबल रहा है।" हालिया घटनाक्रम के संबंध में कथन पर चर्चा कीजिए और इससे निपटने के उपाय सुझाएँ। (150 शब्दों में उत्तर दीजिए) 10 अंक

"The recent radical trends in Punjab show that the Khalistan issue is still simmering." Discuss the statement with respect to recent developments and suggest measures to handle it.
(Answer in 150 words) 10 Marks

Ans 7) Recent militant posing of Amrit Pal Singh & his associates & direct challenge to state administration reflect Radicalism as still an issue of Punjab.

Khalistan issue & Radicalism in Punjab

(1) Relative deprivation feeling due to perceived political apathy & misuse of communal tensions by non-state actors like Bhindranwale is the root of Radicalism.

(2) Rising unemployment figures, political corruption & poverty rate of Punjab provide feed to radical channels.

(3) Menace of drug network & political

Candidates must not write on this margin

shield to radical elements raising demands of Khalistan.

(4) However, recent trend was only by some people with no mass support, indicating success of past measure.

Measures to handle Radicalism in Punjab

(1) Developmental: (i) Reduce land issues & support to marginal farmers & laborers.
(ii) Employment to youth of Punjab.
(iii) Development of rural areas with emphasis on border towns.

(2) Using local communities as source of intelligence.

(3) Harmonize efforts of Central agencies like NIA, CBI & state police.

(4) Involve local Gurudwaras to counter religious extremism.

Recent episode was more of 'one man show' [illegible] measures of state.

Candidates must not write on this margin

8. ड्रोन संचालन में आसानी और साथ ही इसके संचालक की अनामिता, भारत की सीमा सुरक्षा की चुनौतियों में वृद्धि करती है। विस्तारपूर्वक वर्णन कीजिए और सीमावर्ती क्षेत्रों में ड्रोन समस्या से निपटने के लिए सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The anonymity and ease of drone operation contribute to the challenges of India's border security. Elaborate and give suggestions to tackle the drone problem in border areas.

(Answer in 150 words) 10 Marks

Ans 8) Drone technology is being misused by ~~state~~ external & non-state actors to create internal security issues in India.

Drones as challenge to India's border security

(1) Supply of drugs, narcotics etc. through cross-border drone operations. (Ex)- Drug menace of Kashmir Valley.

(2) Drone espionage to monitor border military establishment.

(3) Provide resources to sleeping cell & illegal infiltrators.

(4) Low cost technology & wide use.

(5) Difficult to establish accountability even if drone is intercepted.

Candidates must not write on this margin

Suggestions to tackle drone problem

(1) Technological measures such as network jammers, drone sensors etc. along borders.

(2) CIBMS along LoC must be upgraded to include anti-drone capabilities.

(3) Anti-aircraft systems must be deployed for monitoring drone entry.

(4) DRDO must collaborate with drone making companies to enhance monitoring capabilities.

(5) Local intelligence network for ~~drone~~ drone sightings.

(6) Training border forces for anti-drone capabilities like tracking drone path.

Emerging technological challenge must be met with technical & institutional capability building on urgent basis.

Candidates must not write on this margin

9. "पूर्वी और मध्य भारत का संसाधन अभिशाप वामपंथी उग्रवाद का एक महत्वपूर्ण चालक रहा है"। इन क्षेत्रों के सतत और समावेशी विकास के लिए उपायों को विस्तार से बताइए और सुझाव दीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

"The resource curse of Eastern and Central India has been a crucial driver of LWE". Elaborate and suggest measures for sustainable and inclusive development of the region.
(Answer in 150 words) 10 Marks

Ans 9) Resource curse refers to high underdevelopment of regions which are resource rich like Chhotanagpur Plateau which is also hotbed of Naxalism.

Resource Curse of Eastern & Central India as Crucial driver of LWE

(1) Land Alienation of tribals & widespread displacement owing to mining operations.

(2) Loss of traditional forest rights & livelihood coupled with faulty Compensation & rehabilitation.

(3) Continuous development lag → Resource exploitation but governance apathy.

Candidates must not write on this margin

(4) Above factors led to tribal & peasant discontent. Combined with communist militant politics of Charu Mazumdar & CPI(Maoist), LWE became explosive.

Measures for sustainable & inclusive development

(1) "Development as antidote to extremism".

- Job opportunities
- Infrastructure like Roads, Schools etc.
- Human Development Indicators

(2) Autonomy to locals under PESA Act & IIth Schedule to decide on local developmental discourse.

(3) Reducing & rationalising mining operations, skilling of youth for local opportunities.

(4) Special Central Assistance Grant should be increased.

SAMADHAN Doctrine must be harnessed to combine security response with development.

Candidates must not write on this margin

10. उत्तर पूर्व और जम्मू–कश्मीर क्षेत्र में हिंसा की घटती प्रवृत्ति के आलोक में क्या आपको लगता है कि एएफएसपीए (अफ्स्पा) अपनी उपयोगिता बरकरार रख पाया है? टिप्पणी कीजिए (150 शब्दों में उत्तर दीजिए) 10 अंक

In light of the declining trend of violence in the North East and J&K region do you think that AFSPA has lived its utility? Comment. (Answer in 150 words) 10 Marks

Ans (10) AFSPA gave wide power to military forces to tackle real time situation & reduce insurgent tendencies.

AFSPA has lived it's utility

(1) Removed from more than 70% areas reflecting declining importance

(2) Misuse of AFSPA by forces led to local discontent & demand for repeal.

(3) Shifting focus from 'supression' to 'participation' i.e. using locals in fight against extremism.

(4) New developmental demands & AFSPA provisions are contradictory.

Candidates must not write on this margin

(5) Empowering state police & withdrawal of central forces -

However, AFSPA is still relevant because

(1) Changing form of extremism from direct violence to proxy attacks
- Drug & Arms trafficking
- Misuse of free Movement Regime
- Instances of infiltration.

(2) Many areas of J&K & Northeast are still disturbed. Withdrawing AFSPA completely will see resurgence of extremism.

(3) Rising impact of external actors (Ex) - Chinese assertion in Arunachal.

(4) Defence operations will face roadblock. 360° Assessment of ground situation & intelligence inputs are necessary before contemplating removal of AFSPA.

Candidates must not write on this margin

11. परमाणु ऊर्जा और अंतरिक्ष प्रौद्योगिकी के क्षेत्र में क्रमशः डॉ. होमी जहाँगीर भाभा और डॉ. विक्रम अंबालाल साराभाई के योगदान से भारत को रणनीतिक रूप से किस प्रकार लाभ हुआ? (250 शब्दों में उत्तर दीजिए) 15 अंक

How India benefitted strategically from the contributions of Dr. Homi Jehangir Bhabha and Dr. Vikram Ambalal Sarabhai in the fields of atomic energy and space technology respectively? (Answer in 250 words) 15 Marks

Ans 11) Indian Space Programme & Nuclear Programme was initiated due to stalwarts like Dr. Homi Jehangir Bhabha → Father of Indian Nuclear Program & Dr. Vikram Sarabhai → Father of Indian Space Program.

Contributions of Dr. Homi Jehangir Bhabha

① Initiated Nuclear Program by convincing political bosses for it's strategic & technological importance. This was in the era when Nuclear Disarmament was popular.

② laid the foundation of 3point Indian Nuclear Program → initially focussed on global help & then indigenous capabilities.

Candidates must not write on this margin

(3) Participated & represented India in Geneva Nuclear Conference & advocated for civilian use of nuclear technology.

(4) International Collaboration with Canada & Russia for PHWR nuclear reactors.

(5) Bhabha Atomic Research Centre (post demise) as apex nuclear research institute.

(6) Laid foundation of IGCAR - pioneering for indigenous nuclear capabilities.

Contributions of Dr. Vikram Sarabhai

(1) Established Indian National Space Council which was later institutionalised as Indian Space Research Organization in 1962.

(2) Collaborated with Russia &

Candidates must not write on this margin

for launch of Aryabhatta (First Satellite)

(3) Along with Satish Dhawan, established India's own launching station.

(4) Honed Rocket technology by launching sounding rockets from Thumba.

(5) Laid plans of future space programs by envisioning launch vehicles like PSLV.

(6) Stressed on Civilian use of space technology (Ex: Weather Analysis, Topographic Mapping

(7) Headed BARC after Dr. ~~Homi~~ Bhabha's death.

Today, India is nuclear power & space pioneer due to robust foundation laid by these visionaries.

Candidates must not write on this margin

12. जेनरेटिव एआई निकट भविष्य में नवाचार की सीमाओं को आगे बढ़ाने का सामर्थ्य रखता है, फिर भी इसका सामाजिक प्रभाव पर्याप्त चुनौतियाँ खड़ी करता है। सविस्तार उत्तर दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Generative AI holds the potential to push the boundaries of innovation in the near future, yet its societal impact raises substantial challenges. Elaborate. (Answer in 250 words) 15 Marks

Ans) Generative AI refers to technology based on neural network systems which can generate unique output on query based on large data training. (Ex) - Chat GPT and Google's Lambda.

Potential of Generative AI

(1) Corporate Usage :- (i) Easier sorting of data & processing of data.

(ii) Less spending on content creation & corporate graphic designing.

(iii) Easy to build tools for UI & website launch.

(2) Education Sector :- (i) Detailed answer for student queries - Customised learning -

Candidates must not write on this margin

(ii) Potential in remote education & thus inclusive classrooms.

(3) Governance Applications :- (i) Wide application in grievance redressal. (Ex)- Chatbots

(ii) Awareness generation for government schemes.

(iii) Government schemes like Bhashini which use Generative AI on vernaculars.

(4) Health applications with easy address of small issues, certified prescriptions etc.

(5) Reduce cost of generating new graphics & potential for entertainment industry.

Social Implication : Associated Hazards

(1) Automation & Job loss (Ex) : Content writers, marketing teams etc.

Candidates must not write on this margin

(2) Intellectual Property Rights issues :-

- Who owns Copyrights
- Copyright Violations
- Passing input by human actor.

(3) Potential of misinformation & misuse.

(Ex) :- GPT perpetuating racial bias.

(4) Issues of Plagiarism & weakening critical thinking among students.

(Ex) :- Harvard saw 17 GPT generated applications.

(5) Threat for cyber security → with decreasing human-machine distinction.

(6) Accountability issues in case of crimes & hazards. (Ex) :- Who's responsible for crimes done by AI.

- Global Regulation & Civil society inputs in AI regulatory framework can maximize benefits & minimize harm.

Candidates must not write on this margin

13. रोगाणुरोधी प्रतिरोध (एएमआर) एक तेजी से बढ़ता संकट है जो दुनिया भर में सार्वजनिक स्वास्थ्य के लिए एक गंभीर खतरा है। रोगाणुरोधी प्रतिरोध की बढ़ती समस्या में योगदान देने वाले प्रमुख कारक क्या हैं, और इस वैश्विक स्वास्थ्य खतरे से निपटने के लिए कौन से कदम उठाए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक

Antimicrobial resistance (AMR) is a rapidly escalating crisis that poses a grave threat to public health worldwide. What are the major contributing factors to the growing problem of antimicrobial resistance, and what steps can be taken to address this global health threat? (Answer in 250 words) 15 Marks

Ans) WHO defines AMR as condition where existing antibiotics, antibacterials etc. i.e. antimicrobial drugs do not work on drug resistant bacteria. (Ex) :- Multi drug resistant TB.

Factors for growing AMR issue

(1) Overuse of drugs like antibiotics.
(Ex) :- Consumption without prescription i.e. Over the Counter Availability (OTC).

(2) Misuse in poultry & fisheries.

(3) Incomplete antibiotic administration & wrong prescriptions by untrained doctors.

(4) Release of effluents from pharma companies to land & water bodies.

Candidates must not write on this margin

(5) Community interaction (Ex) - Common bathing at swimming pools.

(6) Lack of implementation of prescription standards & OTC laws.

Steps to address this global health threat

(1) Global Steps :- (i) GLASS Campaign for AMR Monitoring by WHO.

(ii) Prescription standards issued under International Health Regulation.

(iii) WHO has recommended Composite Doses to ensure completion of prescribed medicine course by patients.

(2) National Steps :- (i) National Policy on AMR :- Use, sale & production of

Candidates must not write on this margin

antibiotics to be regulated.

(ii) Access, Watch, Reserve (AWaRe) strategy for graded use of antibiotics.

(iii) Red line Campaign to deter OTC availability.

(iv) Health Campaigns like TB Mukt Bharat also factor in AMR cases.

(3) Way Forward : (i) Public funding & private R&D to develop new antibiotics (which are otherwise non-profitable)

(ii) Community Awareness on health hazards of AMR.

(iii) Revamping National Health Policy, 2017 to factor in AMR threat

Concept of One Health need to be implemented at all levels, to effectively counter AMR threat.

Candidates must not write on this margin

14. विघटनकारी नवाचारों से आप क्या समझते हैं? हाल के दिनों में विघटनकारी नवाचार के कुछ उदाहरण बताइए और यह भी बताइए कि इन नवाचारों ने उद्योगों के संचालन के तरीके को किस प्रकार परिवर्तित किया है?

(250 शब्दों में उत्तर दीजिए) 15 अंक

What do you understand by Disruptive innovations? What are some examples of disruptive innovation in recent times, and how have they changed the way industries operate?

(Answer in 250 words) 15 Marks

Ans) Disruptive innovations are sudden breakthroughs in technology which has potential to revolutionize the existing technical ecosystem. It is in contrast to sustained technology which develop gradually.

Examples & Applications of Disruptive Innovations

(1) Artificial Intelligence :- Use of large training sets to generate intelligent systems. Applications :-

(a) Automated & Remote Controlled Plants.

(b) Generative AI to reduce business costs like UI Design, marketing content etc.

Candidates must not write on this margin

(iii) Applications in defence industry with self navigable smart missiles.

(iv) Education applications : ICT enabled classrooms & Remote education.

(2) Blockchain Technology : Use of data blocks to create secure, verifiable & unchangeable record of transactions.

Examples : (a) Agricultural land titling resolutions & maintaing supply chain records

(b) Finance Sector for verifying transactions.

(c) Industries to keep tabs on product movement

(3) Internet of Things : Remotely Controlled appliances through internet commands. Applications :

(i) Self Automated smart industries.

Candidates must not write on this margin

(ii) Electronic Appliances. (Ex) - Remotely operated air-conditioners etc.

(iii) Automation of Assembly lines.

(4) Drone Technology : Controlled flight ~~of~~ devices with applications like :

(i) Delivery Systems. (Ex) : Amazon Drone.

(ii) Surveillance & military use

(iii) Cadastral mapping. (Ex) : SVAMITVA

(5) Satellite Communication Systems : Use of direct data from satellite network for fast processing & low latency. (Ex) - Starlink by Tesla for self-driving cars, fast sending & receiving of data etc.

Disruptive innovations are being harnessed under Deep Tech Startup Mission & National Research Foundation funding by India.

Candidates must not write on this margin

15. आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

The Formation of the Coalition for Disaster Resilient Infrastructure brings more robustness to the Disaster Management approach in India. Comment and justify the need for a new strategy to tackle Disasters in India.
(Answer in 250 words) 15 Marks

Ans(15) Coalition for Disaster Resilient Infrastructure (CDRI) was launched in 2018 following Asian Conference on Disaster Risk Reduction led by India.

CDRI to bring Robustness to Disaster Management Approach

(1) Focus on mitigating man & material loss as part of Disaster Preparedness.

(2) In line with Sendai Framework to increase institutional capacity.

(3) Global Collaboration & sharing of best practices. (Ex) - Japan's Earthquake resistant homes.

(4) Low cost solutions for vulnerable

Candidates must not write on this margin

Communities - (Ex) - Coastal fishermen.

(5) Minimise disruption of business & help in post-disaster response actions.

(Ex) :- Easy evacuation of victims.

Need for new strategy to tackle Disasters

(1) Changed nature of disasters :

- Increasing intensity & frequency (Ex) : Cyclones
- Newer Disasters (Ex) :- landslides in Tsunamis
- Impact of global warming - Flash flood & droughts

(2) Increased population & material base necessitating expansion of institutional framework. (Ex) :- Increased NDM Fund.

(3) Need of separate cadre of National Disaster Response Force instead of deployment based system.

Candidates must not write on this margin

(4) Need for decentralisation of power & resources for Disaster Risk Reduction.

Ex:- Using Panchayats during & after calamities.

(5) Need of legal backing & enforcement of existing codes. Ex:- National Building Codes (Earthquakes) & fire safety norms.

(6) Need to harmonize urban development plans with Disaster Management.

Ex:- Urban Floods as recurring disasters.

(7) Boost to newer technology & quicker adoption. Ex:- Mechanism for Himalayan landslides.

"Disasters are global in origin & local in impact" Need of the hour is to revamp disaster strategy with evolving needs & resources.

Candidates must not write on this margin

16. आपदा प्रबंधन सिर्फ आपात स्थिति से निपटने के बारे में नहीं है, बल्कि लचीले समुदायों के निर्माण के बारे में भी है। उन प्रमुख रणनीतियों पर चर्चा कीजिए जिनका उपयोग सामुदायिक लचीलापन बनाने और आपदाओं के प्रभाव को कम करने के लिए किया जा सकता है।
(250 शब्दों में उत्तर दीजिए) 15 अंक

Disaster management is not just about responding to emergencies but also about building resilient communities. Discuss the key strategies that can be used to build community resilience and reduce the impact of disasters.
(Answer in 250 words) 15 Marks

Ans) High Vulnerability & Risk to Communities especially Vulnerable groups like poor, old age etc. are reasons for greater loss to natural calamities. This necessitate Community Resilience as the first step to Disaster Risk Reduction.

Key Strategies to build Community Resilience

(1) Education & Awareness :- (i) About impacts, frequency & intensity of disaster.

(ii) About mitigation strategies at individual level.

(iii) About available & potential Community Resources.

(2) Infrastructural Capacity Upgrading :-

Candidates must not write on this margin

(i) Building Community shelters through Community participation. Ex:- Cyclone Shelters of Odisha.

(ii) Social audit of disaster norm following by local buildings, societies etc.

(3) Information Dissemination System:-

(i) Quick information about impending disasters & appropriate steps.

(ii) Broad casting relief & rescue operations post disaster.

(4) Using local Self Government for reducing disaster risks:- (i) Ensuring adequate provisions of relief.

(ii) Mobilizing communities for awareness & information campaigns.

Candidates must not write on this margin

(iii) Ensure Hazard Zonation Mapping of their area.

(5) Involving NGOs & civil society organizations for both pre-post disaster operations - (Ex) :- local info about trapped residents.

(6) Communities can be used to build accessibility routes to remote areas - (Ex) - Delay in Raigad landslide operations due to absence of roads -

(7) Coastal communities can be connected to nearest headquarters - Proper information channels are to be built.

Community Resilience can act as "FIRST LINE OF DEFENCE" to mitigate material & impact of all disasters.

Candidates must not write on this margin

17. महत्त्वपूर्ण बुनियादी ढाँचे (क्रिटिकल इंफ्रास्ट्रक्चर) और प्रमुख निगमों को लक्षित करने वाले रैंसमवेयर हमलों में हुई हालिया वृद्धि ने मजबूत साइबर सुरक्षा उपायों और नीतियों की तत्काल आवश्यकता पर प्रकाश डाला है। इस प्रवृत्ति में योगदान देने वाले प्रमुख कारकों पर चर्चा करते हुए, विभिन्न क्षेत्रों पर इन हमलों के प्रभाव का विश्लेषण कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

The recent rise in ransomware attacks targeting critical infrastructure and major corporations has highlighted the urgent need for stronger cybersecurity measures and policies. Discussing the key factors contributing to this trend, analyze the impact of these attacks on various sectors.

(Answer in 250 words) 15 Marks

Ans) Recent ransomware attack on AIIMS & disruption of services for two days exposed the vulnerability of critical infrastructure to cyber attacks.

Factors contributing to this trend

(i) Attack initiators :- (i) Easy access to advanced ransomware. (Ex) Wannacry was available through Google.

(ii) Better masking tactics - (Ex) :- Deceiving as official mails → Hyderabad police 2018.

(iii) Organized crime groups & terror nexus resorting to cyber crimes. (Ex) :- ISIS Cyber Cell to attack state network architecture.

Candidates must not write on this margin

(iv) Support through State actors. (Ex) - Israel funded Cyber attacks on Palestine; Bombay 2020 Grid Attack has Chinese origin.

(v) Anonymity & Difficult to track.

(2) Attack Victims :- (i) Weak cyber security infrastructure (Ex) :- AIIMS Network.

(ii) Collusion of internal people for introducing Ransomwares.

(iii) Lack of digital literacy among employees.

(3) Delayed response of CERT (avg is 48 hours as compared to 12 hours globally).

(4) Annual Budgets of corporate & institutions don't factor in ☆ cyber security.

Impact on various sectors

(1) Corporate Sector :- (i) Disruption of services & loss -

Candidates must not write on this margin

(ii) Stealing data & operational details.
Ex:- Aveeon Data leak through Ransomware.

(2) Health Sector :- (i) Disrupted medical facilities directly impact patients -
(ii) Loss of stored health records & test reports.

(3) Financial Sector :- (i) Threat to financial architecture & fraud, stealing etc -
(ii) Reduced credibility & reliability of banking system.

(4) Defence Sector :- (i) Loss of critical information like military strategies -
(ii) Exposed Defence Weakness.

(5) Attack on electricity grid at Bombay kept city in dark for 10 hours.

Cyber Security should be priority and all stakeholders must be aware of cost of lapses.

Candidates must not write on this margin

18. सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है? (250 शब्दों में उत्तर दीजिए) 15 अंक

In the context of border security, how can cooperation and coordination between different security agencies be improved to ensure effective and efficient management of coastal and terrestrial borders? (Answer in 250 words) 15 Marks

Ans(18) Our coastal & territorial borders are manned by 15 & 18 different agencies respectively, necessitating the need for cooperation & coordination between security agencies -

Coordination & Cooperation for Coastal Borders

(1) Navy Maritime Coastal Security Strategy 2015 aimed at harmonizing efforts of 3 different agencies: (i) Marine Police Force for territorial waters
(ii) Indian Coast Guard
(iii) Indian Navy

(2) Intelligence Networks can be harmonized to prevent duplication of efforts.

(3) Efficient resource utilization like

Candidates must not write on this margin

sharing of radar devices.

(4) Prevent infiltration of terrorists, narcotics, arms etc due to lack of coordination. (Ex): 26/11 terrorists came through Sir Creek Estuary.

(5) Prevent conflict among forces & also federal conflict over monitoring maritime area.

(6) Quick communication & harmonized operations can also counter rising non-traditional security threats. (Ex): Piracy & Trafficking in Indian Ocean.

Coordination & Cooperation for territorial borders

(1) Rationalise deployment of personnel.

(Ex): Army, SSB & ITBP all guard LoC along India-Pak border.

Candidates must not write on this margin

(2) Demarcate areas of operations to reduce burden (Ex- Assam Rifles & ITBP can be relieved of their civilian deputations.

(3) Harmonize information channels & local information regarding illegal activities can be harnessed.

(4) Will prevent lapses against operations to counter insurgent groups (Ex:- ULFA & NSCN misused Free Movement Regime

(5) Troops can be specialized in training according to area for better efficiency.

(6) Optimal utilisation of resources.

Integrated Border Commands can be conceptualised to increase efficiency & effectiveness of Border Management Framework in India.

Candidates must not write on this margin

19. मेटावर्स और वर्चुअल एसेट्स जैसी नई और उभरती प्रौद्योगिकियों के उपयोग के माध्यम से आतंकवाद का परिवर्तन चिंता का विषय है। हम आतंकवादी उद्देश्यों के लिए नई और उभरती प्रौद्योगिकियों के उपयोग का मुकाबला किस प्रकार कर सकते हैं? इस संबंध में "दिल्ली घोषणा पत्र" के महत्व को स्पष्ट कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

The transformation of terrorism through the use of new and emerging technologies like metaverse and virtual assets is a matter of concern. How can we counter the Use of New and Emerging Technologies for Terrorist Purposes and Elucidate the importance of the "Delhi declaration" in this regard?
(Answer in 250 words) 15 Marks

Ans (q) Rising use of cryptocurrency for financing, digital channels for organisation, Radicalisation & execution of terror crimes is emerging challenge to internal security.

Negative Impact of misuse of emerging technology

(1) Easier financing & anonymous transactions.

(2) Difficult to fix accountability due to digital anonymity.

(3) Rapidly changing channels of communication.

(4) Misuse of Deepweb & Darknet for terror purposes - Ex: Sale of weapons like RPG.

(5) Traceability is issue due to limited capacity of counter-terror agency.

Candidates must not write on this margin

Countering Use of New & Emerging Technologies for Terror Purposes

(1) Legislative Actions: Reform IT Act, 2000 & revamped Digital Data Protection Act to Counter terror use.

(2) Institutional Steps: (i) New wing of Cert-In just to monitor misuse of new technology.

(ii) Cyber terror wing in ~~NIA~~ NIA.

(iii) Monitoring use of Cryptocurrencies.

(3) Training manpower & Course modules to have relevant skills.

(4) Engaging private software firms to Counter evolving technology.

(5) Transnational Cooperation due to international operations of digital terror networks.

Candidates must not write on this margin

Delhi Declaration's Importance

Adopted in recent meeting of global players to counter emerging technology threats :

(i) Establishing Collaborative forum for tracking & information sharing.

(ii) Capacity Building at national level by upgrading cyber-capabilities.

(iii) International agency to monitor misuse of new tech like cryptocurrency.

(iv) AI regulation, Crypto & NFT monitoring to flag any terror financing.

(v) Harmonizing global legislative framework.

Delhi Declaration promises a coordinated response to misuse of New Technology for terror purposes.

Candidates must not write on this margin

20. "अग्निपथ योजना हमारे सशस्त्र बलों के लचीलेपन और प्रभावकारिता के लिए आवश्यक एक कड़वी गोली है।" प्रासंगिक तर्कों के साथ कथन का आलोचनात्मक विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

"The Agnipath scheme is a bitter pill needed for the resilience and efficacy of our armed forces." Critically Analyze the statement with relevant arguments. (Answer in 250 words) 15 Marks

Ans) Agnipath Scheme was rolled out to rationalize the size of army & make it future ready.

Agnipath scheme to increase resilience & efficacy of armed force

(1) Younger & better adapted armed force i.e. reducing mean age of army.

(2) Rationalising Army Expenditure :- (i) 40% of Army Budget goes for pensions & more for salaries.

(ii) Need to expand expenditure on technology → pivoting financial resources.

(3) Change in warfare patterns :- Technology; Cyber warfare etc. gaining ground

Candidates must not write on this margin

over Conventional wars.

(4) Better skilled personnel → only 25% of batch will be retained after 4 years subject to performance.

(5) Easier training & upskilling of a leaner armed force.

(6) Increased recruitment as resources will be freed up.

(7) In line with international practices.

Ex: China & America already use this model.

Shortcomings of Agnipath Scheme

(1) Issues about future employment & ~~&~~ Career of Agniveers. i.e. absence of alternate employment avenues.

Candidates must not write on this margin

(2) Weakening of army's strength as initial recruits won't be properly trained.

(3) Bilateral issues with Nepal over Gorkha Regiment

(4) Around 8 months of 4 years will be spent in training — waste of resources in training if services are limited in time.

(5) Issues of favouritism & nepotism in 25% retention after 4 years.

(6) Issues regarding Compensation if personnel is injured during 4 years.

(7) Apprehension on dilution of Discipline & culture of military in new recruits.

Agnipath is a bitter pill, however continuous updations to scheme by monitoring output can maximise gains for army & military

Space for Rough Work

Candidates must not write on this margin