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(To be filled by candidate)

Name of Candidate : NAZISH UMAR ANSARI

Roll No. : 011

Registration Number : Date of Examination : 31/8/23

Exam Centre : Old Rajinder Nagar ☐

Bhopal ☐

Online ☒

Test - 7

Code : TC709

RCA Batch 2023

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. : 

[To be filled by the STUDENT]

Student's Queries for the Evaluator (if any write them below)

[illegible]

[To be filled by the EXAMINER]

Question	Response
1. What is the purpose of the study?	The purpose of the study is to investigate the effectiveness of a new teaching method compared to traditional methods in improving student performance in mathematics.
2. What are the research objectives?	The research objectives are to compare the mean scores of students in the experimental group (using the new method) and the control group (using traditional methods) on a standardized mathematics test.
3. What is the significance of the study?	The study is significant because it aims to provide evidence on whether the new teaching method is more effective than traditional methods, which could inform educational policy and practice.
4. What are the independent and dependent variables?	The independent variable is the teaching method (new vs. traditional), and the dependent variable is the student performance score on the mathematics test.
5. What is the research design?	The research design is a randomized controlled trial, where students are randomly assigned to either the experimental group or the control group.
6. What are the limitations of the study?	The limitations of the study include the potential for confounding factors (e.g., student motivation, prior knowledge) and the limited generalizability of the findings to other contexts.
7. What are the conclusions?	The conclusions are that the new teaching method resulted in significantly higher mean scores than the traditional method, suggesting it is more effective.
8. What are the recommendations?	The recommendations are that the new teaching method should be implemented more widely in schools, and further research should be conducted to explore its long-term effects.

Evaluator's response	
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(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			
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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.

1. भुगतान संतुलन (बीओपी) के घटकों के रूप में पूँजी खाते और चालू खाते के बीच अंतर का सविस्तर वर्णन कीजिए। भारत के बीओपी घाटे को संतुलित करने के लिए कुछ उपाय सुझाएँ। (150 शब्दों में उत्तर दीजिए) 10 अंक
Elaborate on the difference between Capital Account and Current Account as components of Balance of Payment (BOP). Suggest a few measures to balance the BOP deficit of India. (Answer in 150 words) 10 Marks

Balance of payment denotes the net value of proceeds through trade, remittances and transfers.

Capital Account.

- Comprises of the assets and investments
 - Remittances
 - FDI.
- Point Variable
- It denotes the attractiveness towards investment and Indian foreign earnings.
- India has meagre CA ^{surplus} due to largest remittance inward and favourable investment Environment.

Current Account

- Comprises of the trade component.
 - Import
 - Export
- Flow Variable
- It denotes the robustness of economy as a trading unit and efficient suppliers.
- India has current account deficit due to high volume Merchandise import.

Measures to balance BOP deficit

→ Export led growth

- Focus on PLI Scheme for Manufacturing
- 'Assemble in India', 'Make in India'

→ Atmanirbharata

- Cluster based approach - MSMEs
- Indigenisation of Consumer Demand - Efficiency, Quality

→ FDI Investment

- Capital Account Convertibility
- Ease of doing business

→ Robust Financial sector

- Internationalisation of Rupee
- Depth in Bond market → Credit Financing

→ Cut Import bill → Fossil fuel

- Investment in Renewable energy
eg. Solar, Hydrogen Mission

Balanced BOP promote fiscal prudence and prevent twin deficit crisis

2. लॉजिस्टिक्स (रस्तद) क्षेत्र, विनिर्माण उद्योग के विकास के महत्वपूर्ण घटकों में से एक है। चर्चा कीजिए। साथ ही, हाल ही में घोषित राष्ट्रीय लॉजिस्टिक्स नीति, 2022 के विभिन्न घटकों का भी उल्लेख कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The logistics sector is one of the important components of the growth of the manufacturing industry. Discuss. Also, mention various components of the recently announced National Logistics Policy 2022.

(Answer in 150 words) 10 Marks

Logistics sector is Key
Component of Manufacturing industry
providing forward and backward linkages.
It contributes 6% of Manufacturing GDP.
In Recent times, cost of logistics is
12% (higher than global average)

[Important Component of growth]

→ [Market availability]

→ Expand the reach of unit.
→ Broaden the Customer Base

→ [Export]

→ Earn Foreign Currency

→ [Raw Material]

→ Efficiency and cost management

Recently National logistics policy is announced by the government -

Various component

- Convergence of National Infrastructure Pipeline and National Monetisation Plan.
- Reduction of Logistic cost to 7-8%.
- Multi Modal logistics system
 ↳ Robust supply chain.
- Green Technology and Energy Integration
- Projects like Dedicated Freight Corridor
 Sagarmala — Rationalisation of
 share of Roadways, Railways.

Implementation of NLP

will require integration of channels and nodal agents that control the industrial supply chain. It can give impetus to our growth

3. डब्ल्यूटीओ के तहत मत्स्य पालन सब्सिडी पर नए समझौते पर भारत का क्या रुख है? भारत के लिए मत्स्यपालन क्षेत्र किस प्रकार महत्वपूर्ण है? इस क्षेत्र के विकास के लिए सरकार द्वारा उठाए गए कदमों का उल्लेख कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

What is India's stand on the New Agreement on Fisheries Subsidies under WTO? How is the Fisheries sector significant for India? Enumerate the steps taken by the Government to develop this sector.

(Answer in 150 words) 10 Marks

Recently WTO has adopted New Agreement on Fisheries subsidies to deter the distortionary impact on trade.

India's Stand

- Proponent of the economy, India pledged to support the growth and development of Aquaculture and Sustainable livelihood through schemes like PM Matsya Sampada Yojana

Significance of Fisheries

Employment

- Coastal communities. eg. Konkan
- ~~Export~~ Aquaculture → Animal Industry

Export

- India one of the largest exporter.
- Earn foreign exchange.

- Key component of blue economy
 - ↳ Coastal management through responsible economics.
- Food sources
 - ↳ Part of diet (protein/fat source)
 - ↳ Oil industry.

Step taken to develop

- ↳ PM Matsya Sampada Yojana
 - ↳ Financially assist in capacity building of farmer.
- ↳ Integration of Aquaculture with Agriculture
- ↳ Kisan Credit card to Fisherman
- ↳ NAVIC Support to Fisherman
 - ↳ Prevent any geospatial issue
- ↳ IDs issued to fisherman
 - ↳ Identification in international water.

Fishery industry has potential to boom and scientific sustainable fish farming ~~could~~ can generate employment as well as capital

4. उन प्रणालीगत और संस्थागत बाधाओं का विश्लेषण कीजिए जो भारत में भूमि सुधार प्रयासों में बाधा बनी हुई हैं और भूमि के न्यायसंगत वितरण को सुनिश्चित करने के लिए व्यावहारिक समाधान प्रस्तावित कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Analyze the systemic and institutional constraints that continue to hinder land reform efforts in India and propose pragmatic solutions to ensure equitable distribution of land.

(Answer in 150 words) 10 Marks

Land reform has been an issue of public debate. Unequal distribution of land and land fragmentation poses fresh challenges.

Systemic and Institutional Constraints that hinder Land reform efforts

- Lack of Patta document
 - ↳ Poor Record Keeping → Illiterate
- Ambiguous Ownership
 - ↳ Multiple claim on single piece of land
 - ↳ Family Disputes
- Land fragmentation
 - ↳ Generational skewing of land
- Corruption and Benami Properties
 - ↳ Fake Stamp paper → Land papers
- Complex resolution : Judicial pendency
- Government land → fragmented into departments

- Pragmatic solution → Equitable distribution
- GIS Mapping of land → Understand the geographical extent.
 - Blockchain technology → Record the dataset of ownership.
 - Allow claims of land to be raised
 - ↳ Use of AI and Machine learning to adjudicate the claim
 - ↳ Fast track courts for resolution
 - Geotag the allotted land → Digital Certificate to the owner.
 - Benami properties to be seized → Land Bank at District level
 - ↳ Land to be distributed to needy → On lease
 - ⇓
 - Revenue Source

Land Resource is scarce and need multi pronged strategy to be utilised and need equitable distribution for distributive justice.

5. 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 defence capabilities and strategic position in the region?

(Answer in 150 words) 10 Marks

BrahMos Supersonic Cruise
Missile is designed by joint venture
of DRDO and Russian counterpart.

Unique features

- Its latest version can be mounted on Aerial vehicle → Helicopters
- Nuclear capabilities → carry payload of Nuclear Arsenal
- Mid Air Maneuver → Better targeting of the enemy.

Capabilities

- Supersonic (Faster than sound of speed)
- It travels in the upper troposphere against the airflow.

Contribution to India's defence capabilities and Strategic position

Defence capabilities

- Ready for Nuclear warfare.
- Targetting of enemy with precision and speed → Deterrence against attack
- Strengthen the Aerial security
- Indigenous technology.

Strategic position

- ↳ India as defence exporter
 - ↳ Recent deal for BrahMos selling.
- ↳ Sophisticated targeting → Precision
- ↳ Other Variant will aid the Maritime security in Indian Ocean Region

BrahMos set the path for
defence Atmanirbharta and use of
technological excellence to meet strategic
goals

6. 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

Recently Indian Government proposed 'Samudrayaan' - a deep sea exploration mission to explore the possibilities of oceans.

Explore the depth

↳ Mapping of Ocean floor

↳ Study the varied demographic features

↳ Study the earth's hydrosphere

↳ Blue carbon Sequestration potential
↳ Faunal and Floral biodiversity

Harness the resources

↳ Rare earth Metals + Poly metallic nodules

↳ Critical for EV and Frontier tech

↳ Fisheries → Blue economy.

→ Ocean Energy → Geothermal as well as Current energy (Tidal).
 ↳ Green energy source.

Mission contribution to advancement

Ocean science

↳ Data driven objective decision making
 ↳ regulate sustainable fishing.
 ↳ Understand Monsoon pattern.
 ↳ Mitigate the cyclone threat.
 ↳ Information about earth's interior.

Technology

↳ Greentech → Used in Fuel Cell.
 ↳ Solar Photovoltaic cell

- Weathering Monitoring System
- Ocean Radar and Surveillance System
- Submarine - struts

Ocean exploration can aid us to achieve sustainability and achieve SDG Goal of 'life below water'

7. वैश्विक मीथेन प्रतिज्ञा क्या है? क्या आपको लगता है कि वैश्विक मीथेन प्रतिज्ञा मीथेन उत्सर्जन को कम करने की दिशा में एक सकारात्मक कदम है? इस मुद्दे पर भारत का रुख स्पष्ट कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

What is Global Methane Pledge? Do you think the Global Methane Pledge is a positive step toward mitigating methane emissions? Explain India's stance on this issue. (Answer in 150 words) 10 Marks

Global Methane Pledge is signed in COP26 Glasgow to reduce the emission of Methane which is second largest GHG contributor after CO₂.

Positive Step

- Mitigate climate change
 - ↳ Reduce global warming/potential
- International cooperation
 - ↳ Target based approach.
- Alternate Energy source push
 - ↳ Green energy like solar, wind, Hydroelectric

Challenges

- Agriculture → Major Methane emitter
 - ↳ Important for food security
- Livestock → Methane

→ Clean source of energy → Coal bed methane
 { Methane gasification (Shale gas)
 → Developing country moving to
Gas economy.

→ Eurocentric → European bias.
 ↳ to reduce their intake through carbon

India's Stance

→ Not signed Methane Pledge
 → Agriculture is key component of
 Indian economy and livelihood -
 → India already is on the way to
 achieve its climate target
 ↳ through investment in green tech
 ↳ Carbon reduction → Decarbonising
the transport
 ↳ Forest cover restoration.

→ India will look for Carbon Sequestration
techniques for meet the need to
 reduce Global Warming potential

Global Methane Pledge
 should accommodate the concern of
 the developing nations reliance on
Gas

8. 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 रणनीतियाँ और चुनौतियाँ 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

COVID-19 has caused huge distress in terms of livelihood losses, human life losses and demand for preparedness to avoid such in future.

Importance of disaster management in public health

→ ~~One Health Approach~~ ~~Integration of~~

→ ~~Threat to human life~~ → Large scale

↳ Novel pathogens can spread & wreak havoc.

→ Overwhelm public infrastructure

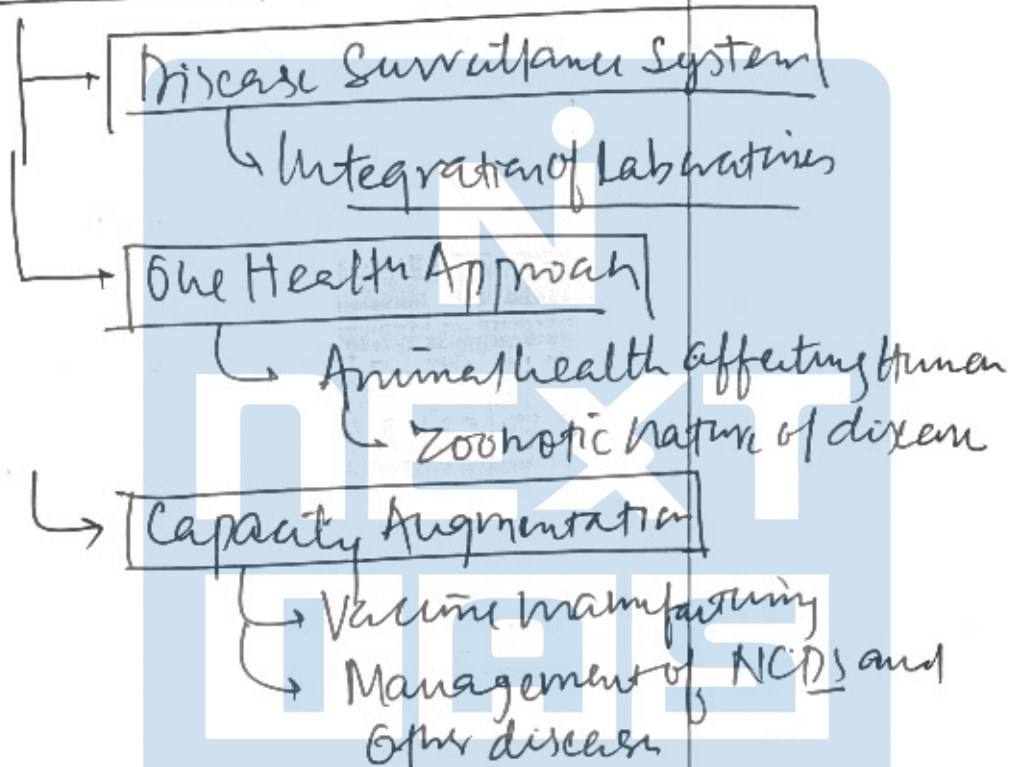
↳ No oxygen supplies

↳ Medicine scarcity

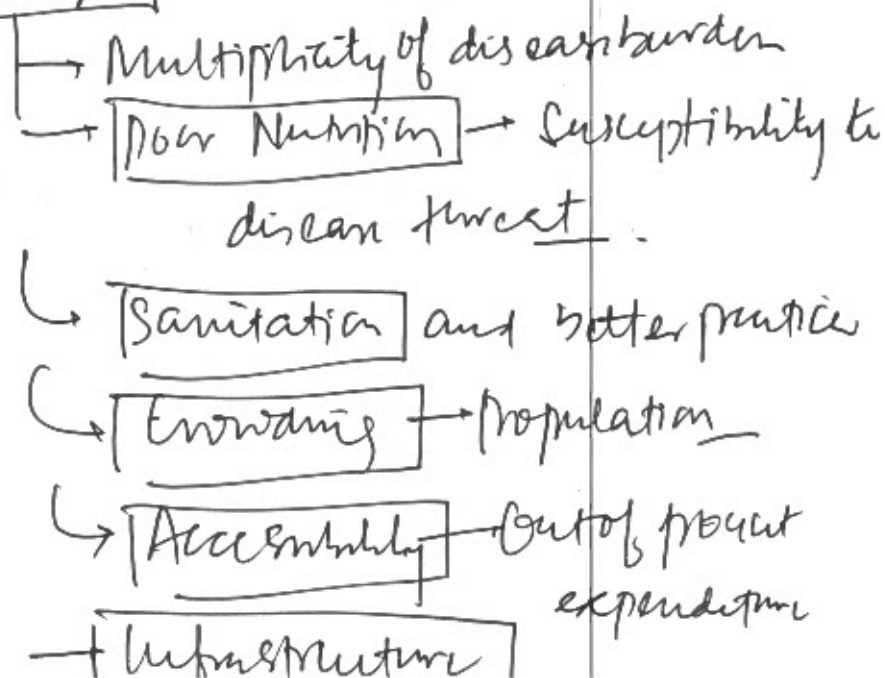
↳ Vaccine latency.

- Disaster Risk Assessment help to assess the impact of Health emergencies.
- It reduces the pressure on public health infrastructure

Strategies



Challenges



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

In Recent times, left wing extremism has seen a reduction in impact in states like Jharkhand, Odisha, AP.

Resource curse - a driver

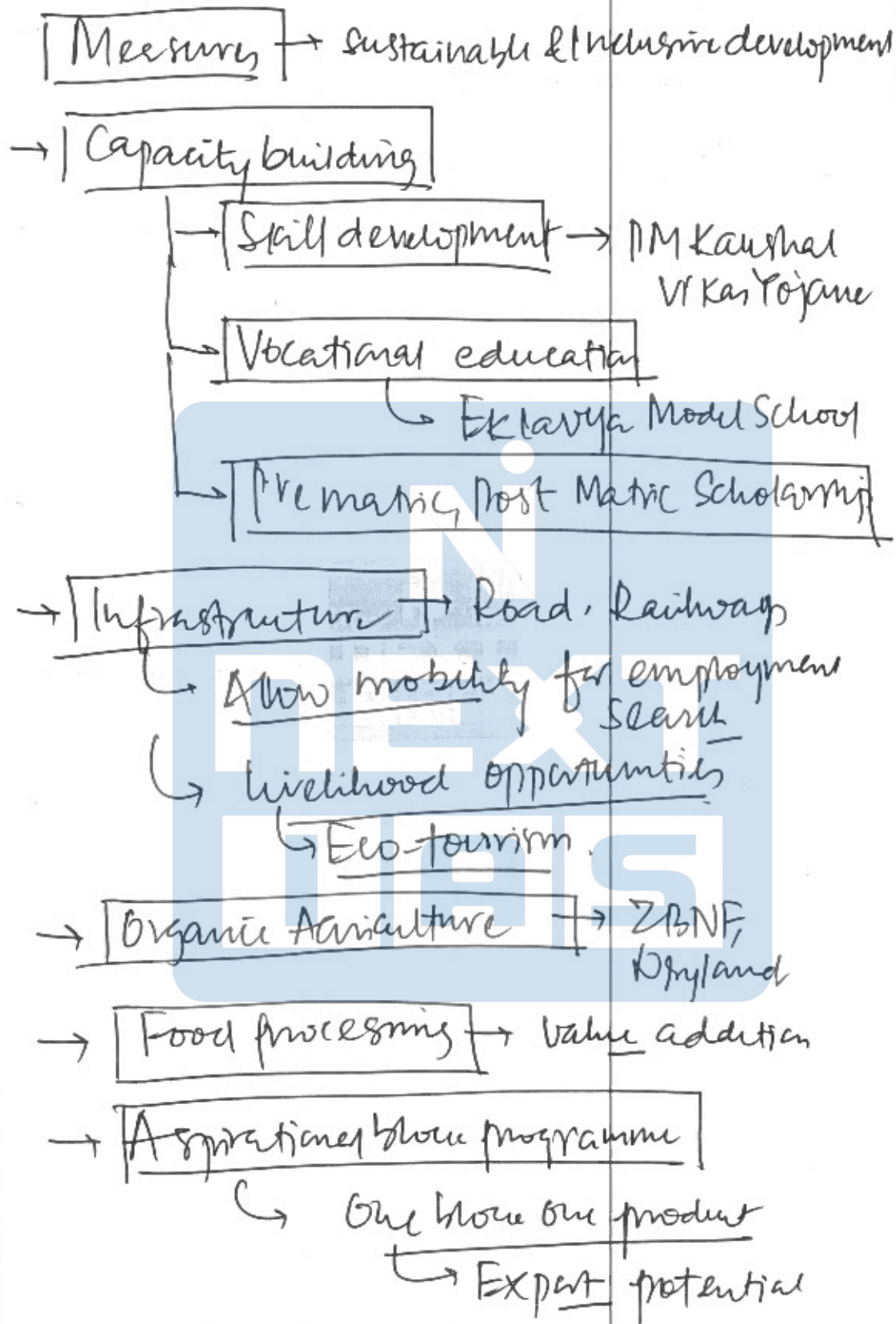
↳ Lack of employment

↳ Livelihood Challenges
↳ Easy to fall prey

↳ Social Injustice → led to picking weapons for Grievance Redressal

↳ Trust deficit → Poor socio-economic parameter
↳ Ethnic faultlines, not addressed
eg. Tribals exploitation

→ Infrastructure → Lack of connectivity
↳ Difficult to deploy Security



Left wing extremism springs from deprivation and need equitable distribution and distributive justice to eradicate

10. उत्तर पूर्व और जम्मू-कश्मीर क्षेत्र में हिंसा की घटती प्रवृत्ति के आलोक में क्या आपको लगता है कि एएफएसपीए (अफ़्सा) 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

J&K and North east saw the declining instances of the violence based on separation and terrorism.

Reason

- ↳ Capacity development and employment opportunities
- ↳ Tourism and life development
- ↳ Winning Hearts and Minds
- ↳ Confidence building among people
eg. Community level engagement

↳ Border security

↳ Check cross border terrorism

↳ Narco-terrorism busted

AFSPA in sulcan can be a dead letter.

To be removed

- ↳ Civilian police can do the job of administration
- ↳ Community level engagement more effective
- ↳ Notion of TMA and Narmalay among people
- ↳ People against AFSPA

Still relevant

- ↳ Threat of cross border activities
 - ↳ Sensitive to weapon and drug business
- ↳ Separatist incidents → one occasion
- ↳ Security and safety → important for peace

AFSPA can be regulated

And recommendation of Reddy Committee can be applied to reduce the tension and bring development in the region of J&K & N-East

11. अंतर्राष्ट्रीय व्यापार प्रमुख मुद्रा प्रतिमान (डीसीएम) पर केंद्रित है। अंतर्राष्ट्रीय व्यापार में हार्ड करेंसी (दुर्लभ मुद्रा) के महत्व का आलोचनात्मक विश्लेषण कीजिए और डॉलर साम्राज्यवाद के विकल्प के रूप में वैश्विक व्यापार में रुपये की स्वीकार्यता की संभावना पर चर्चा कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक
- International trade is centred on the dominant currency paradigm (DCM). Critically Analyze the importance of Hard currency in International trade and Discuss the potential of rupee acceptance in global trade as an alternative to dollar imperialism
(Answer in 250 words) 15 Marks

Recently, the de-dollarisation has attained impetus in the market and international trade community.

International trade Centred on Dominant currency paradigm

- DCM denotes the use of a major currency in settling international transactions
- Status depends on the mobility and acceptability of the currency, depth of the economic market.

eg. Dollar is a dominant currency with 60% of world trade occurring in Dollar due to its easy convertibility, floating exchange rate and American markets.

It is called Hard currency due to its usage.

Importance of Hard Currency

- Single transaction reference
 - ↳ Easy to do trade with known exchange rates (Market Controlled)
- Stability to world trade → Uniformalise the economies
 - ↳ Account balancing
- Foreign Reserve
 - ↳ Allow countries to meet their immediate needs (Imports).

Challenges

- Susceptible to Economic Sanction
 - ↳ eg. Iran, Russia
- Too much Volatility
 - ↳ Impact on Domestic economies
eg. 2008 Financial recession
- Exchange Rate rise in trade & Debt financing
- Hegemony of USA in DFI like IMF
 - ↳ Forced policy manipulation
for restructuring

Potential of rupee as an alternative

→ India's increasing trade volume

↳ Recent engagement with UAE and Russia through bilateral payment.

→ High Cap Market

↳ FDI investments
↳ Convertibility of currency

Steps needed to meet potential

- Full Capital Account Convertibility
- Free float of Exchange rate
 - ↳ Prevent rate manipulation
- Bilateral and Multilateral treaties
to enhance the rupee mobility
- Stable Economic growth
- Depth in Bond Market → Credit Growth
- International Arbitration
- Payment of Imports in Rupee.

Though it's a long road,
the initiative like BRICS currency is
a way ahead

12. जनसांख्यिकीय लाभांश संवृद्धि सुनिश्चित नहीं करता है, यह केवल सामर्थ्य उत्पन्न करता है। जनसांख्यिकीय परिवर्तन से उत्पन्न अवसरों का लाभ उठाने के लिए सरकार द्वारा उठाए गए कदमों पर ध्यान दिया जाए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

A demographic Dividend does not ensure growth; it only generates potential. Discuss the steps made by the government to take advantage of the opportunities presented by the demographic transition.

(Answer in 250 words) 15 Marks

Demographic dividend
refers to the working age population
that can aid to the growth and
development through skill and human capital.
India has 76% population in age
group of 18-60 years.

Demographic dividend - Not ensure growth

→ Skill Demand supply Mismatch

↳ Structural unemployment issues

→ Jobless Growth

↳ lack of jobs in labour intensive
industries like textile

→ Crime and Drugs

↳ Addiction led to loss of potential.

→ Infrastructure

↳ For skilling lacking.

→ Lack of job creation eg. large no. of
application for govt.

Potential

- India as Skill exporter
 - ↳ Lack of labour supply across world due to aging population.
- Impetus to development
 - ↳ Multisectoral development
 - ↳ Aid in scientific advancement eg. ISRO
- Entrepreneurship
 - ↳ Innovative solution to problems
 - ↳ Wealth creation.
 - ↳ Optimised resource use

Steps taken by government

- PM Kaushal Vikas Yojana
 - ↳ Skilling of youth through hands on training
- AIPUN — Foundational literacy and Numeracy
 - ↳ learning outcomes
- National Apprenticeship Programme
 - ↳ vocation training

- Vocational education in National Education Policy → Skill Impact.
- Skill India Mission
 - ↳ Augment Skill training
- Startup India
 - ↳ Assist the entrepreneur.
 - ↳ Seed Fund Scheme → Aid startups from Tier 2 & Tier 3 cities.
- PM JAY → Jan Aarogya
 - ↳ Healthy people can be Asset
 - ↳ Reduce out of pocket expenditure.
- MUDRA scheme → Support to MSMEs
 - ↳ Employment generation
- SHG linkage scheme
 - ↳ Facilitate SHG for women empowerment

Demographic dividend of India need to be made a reality to achieve the Saptarishi target of Inclusive development.

13. 'जीनोम एडिटिंग (जीनोम संपादन) में फसल सुधार की अपार संभावनाएँ हैं, लेकिन यह नैतिक और सुरक्षा संबंधी चिंताओं को भी जन्म देती है।' भारत में जीनोम-संपादित पादपों के सुरक्षा मूल्यांकन के लिए नए दिशानिर्देश आनुवंशिक रूप से संशोधित फसलों की सुरक्षा को कितना सुनिश्चित करते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक
- 'Genome editing holds immense potential for crop improvement, but it also raises ethical and safety concerns'. How far do the new guidelines for the safety assessment of genome-edited plants in India, ensure the safety of genetically modified crops? (Answer in 250 words) 15 Marks

Genome editing allows the genetic manipulation of a crop to enhance its resilience and alter its productivity.

Potential for Crop Improvement

- Pest resistance
 - ↳ eg. Bt Cotton, GM Mustard
- High Yield
 - ↳ Productivity. eg. HAPV seeds
- Efficiency
 - ↳ per hectare productivity (↑)
- Disease free
 - ↳ CRISPR-Cas9 to silence the pathogen.
 - ↳ Healthy Crop → Healthy Food.
- Climate resilience
 - ↳ Adaptability in Arid and wasteland!

Ethical concern

- Living thing Manipulation
 - ↳ Artificial changes in living things.
- Unknown side effects
 - ↳ Not communicated to consumer

Safety concern

- Mutation → May hamper the Human
 - ↳ Carcinogenic → Cancer-causing
- Resistance development with time →
Threaten food security
- Soil Impact → Degradation.
- Biodiversity → Even kill Pollinators
like Bees.

New Guidelines for safety Assessment

- Multi Stage testing of impact of
gene editing on the crops
- Potential mapping of Human
impact due to consumption
 - ↳ GEAC approval necessary
for commercial usage

- No foreign gene to be induced in Food crops
eg. Use of SDN1&2 for slicing of a segment only.
- Controlled environment testing before releasing in environment
- Labelling → to aware people about Genetic modification
- Benefits → How far it affects
 - Awareness → Objective decision making
 - Prevent future Hazard → Human Health
 - Increase the success rate of crops in field → Resilience

Genome editing need to be applied within the framework of ethical considerations and transparency

14.

भारत में कृषि क्षेत्र पर प्रत्यक्ष और अप्रत्यक्ष कृषि सब्सिडी के प्रभाव की चर्चा कीजिए। न्यूनतम समर्थन मूल्य (एमएसपी) ने कृषि अर्थव्यवस्था को किस प्रकार प्रभावित किया है? (250 शब्दों में उत्तर दीजिए) 15 अंक
Discuss the impact of direct and indirect farm subsidies on the agriculture sector in India. How have Minimum Support Prices (MSP) affected the agricultural economy? (Answer in 250 words) 15 Marks

Indian Agricultural sector employs about 45% of working population and regime of MSP and subsidies tries to keep Agriculture viable.

Impact on Agriculture Sector

Direct Subsidies → Food Subsidy, Fertiliser Subsidy

→ Price Distortion → for supplies

↳ led to excess use of chemicals

↳ Pollution → Eutrophication

→ Food Accessibility

↳ 75% of Rural and 50% of Urban population dependent.

↳ Nutritional Security

→ ~~Distorted Cropping Pattern~~

→ Market price Manipulation

↳ Pushes the prices up (inflation).

Indirect subsidies → MSP
PM-KISAN

→ Income support → Increase in Investment
 ↳ Enhance capital Formation
 ↳ Productivity Increase
 eg. Tractors :

→ Diversification : Inter cropping & other
 ↳ Soil Health Improvement
 ↳ Increase in personal Income

→ Cropping Pattern
 ↳ MSP farmers motivate Rice Cultivation
 ↳ Rice - water guzzling
 ↳ Water export → Water scarce

→ No taxation → No Agritax

Both form of subsidies are

Welfare measures to prevent exploitation
of farmers and keep pace of growth of
Agriculture sector.

Minimum Support price was
flagged by WTO recently in terms of
Agreement on Agriculture

Effect of MSP on Indian Agriculture

Positive

→ Minimum disposable Income →
Income security → Cushion

→ Early declaration → Decision making
in cropping

Negative

→ Rice Wheat Dominant
→ Regional disparity → Benefit for
States like Punjab, Haryana
↳ APMC applicability

↳ High food prices → Inflation

↳ Slower investment and competitiveness

↳ Not realising export potential

→ No focus on food processing.

Policy should shift from
securing Agriculture to diversifying the
scope to food processing

15. 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

Antimicrobial Resistance is the ability of the pathogen to deter the impact of Antibiotics.

Escalating Crisis

- Rising instances of bacterial AMR and failure of first generation of Antibiotics against diseases like LTB.

Threat to Public Health

- Increase the disease burden.
- Affect the poor and malnourished the most.
- May undo the development of Antibiotics and treatment efficacy.

Major factors

→ Drug without Prescription

↳ Over the counter access

→ Incomplete course

↳ Random ~~eat~~ taking antibiotics
even in case of mild symptoms

→ Food Industry

↳ Dairy Animals treated with
doses of antibiotics.

↳ transferred to Human.

→ Climate change

↳ Biofilm producing bacteria
common

↳ offer AMR

→ Water supply

Steps that can be taken

→ Second line of Antibiotics

↳ prepare against the
existing diseases

→ Stop unregulated medical supplies

- ↳ Penalize over the counter drug
- ↳ Awareness regarding proper course of treatment
- Restructure dairy industry
 - ↳ Ban use of common antibiotics repeatedly
 - ↳ Quality measurement → Microbial
- Food Habits
 - ↳ Heating, Boiling
- Use of Bacteriophage Virus
 - ↳ DNA recombination technology to kill AMR.

AMR need to tackle with urgency and Government programme like Integrated Health Management National Health Digital Ecosystem should incorporate this.

16.

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

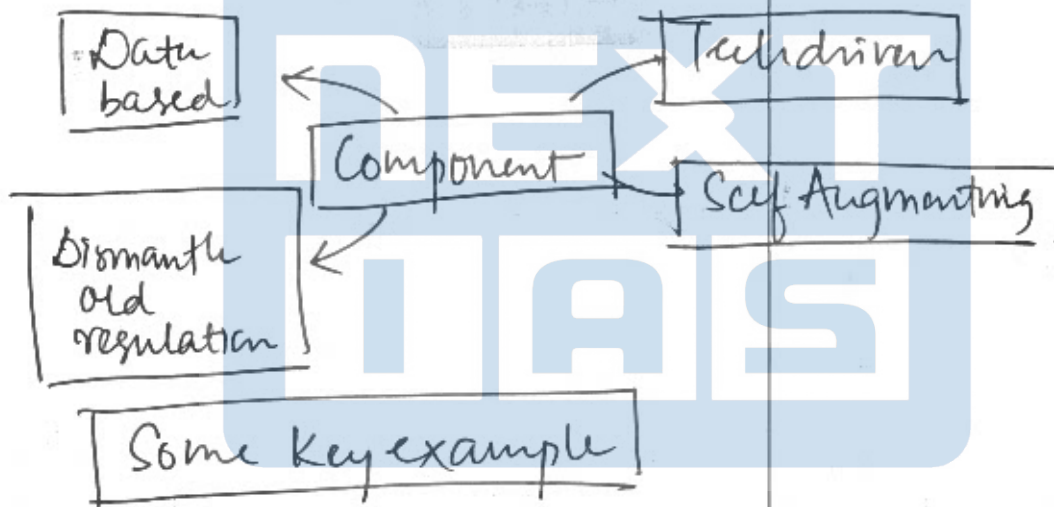
What do you understand by Disruptive innovations? What are some examples of disruptive innovation in recent times, and how have they changed the way industries operate?

(Answer in 250 words) 15 Marks

Disruptive Innovations are

termed to technologies which has potential to bring irreversible changes to the economic and industrial landscape

eg. Frontier tech → AI, ML, Generative Natural language processing.



→ Robotics → Automation

↳ Replace the human Manual labour

↳ Increase in speed and efficiency

↳ Precision

→ Artificial Intelligence

→ Can manage an Industrial unit through Command-Order System

→ Generative AI → aided by ML

→ Real time Response through Analysis of data

→ Fast decision making
→ Replication → Learning

→ Blockchain

→ Large volume of data collection

→ Stored Collated

→ Uniformisation of Dataset

→ Financial Industry

→ eg. Cryptocurrency, NFT

→ Decentralised and transparent

→ Supply Chain

→ Virtual / Extended Reality

→ Metaverse Generation

→ Allow training of individuals through real experience

→ Natural language processing

- ↳ Human like responses
- ↳ Disrupt education system.
eg. Homework, Assignment

→ Quantum Computing

- ↳ Superfast and low latency
- ↳ Can solve complex problem
- ↳ Supply chain management
 - ↳ Data crunching and processing
- ↳ Data communication
 - ↳ Secure through Quantum Key encryption

Disruptive technologies may have changed the industrial paradigm but it should be equitable and act as a facilitator rather than replacing the human workforce

17. हानि और क्षति (L&D) कोष के क्रमिक विकास को चिह्नित कीजिए। COP27 में हानि और क्षति कोष से संबंधित कौन-से प्रमुख घटनाक्रम हुए हैं? इस सम्मेलन में भारत ने क्या प्रतिबद्धताएँ व्यक्त की हैं?

(250 शब्दों में उत्तर दीजिए) 15 अंक

Trace the evolution of the Loss and Damage fund. What are the major development related to loss and damage funds in COP 27? What are the commitments made by India in this conference?

(Answer in 250 words) 15 Marks

UNFCCC at COP27 @

Shantanu Shrivastava announced the launch of Loss and Damage fund which aligns with India's vision of Common but Differentiated responsibilities and respective capabilities.

Evolution of Loss and Damage Fund

- Since the Financial mechanism demand at Kyoto Protocol was raised, the impetus on the loss and damage was clear.
- All countries which are historical polluters were asked to contribute to prevent the losses done by Climate Change events.

→ Paris Agreement cements the resolution of Loss and Damage Fund to be established and announcement of NDC targets in COP26 (Glasgow) necessitates the contribution of advanced economies in Climate mitigation journey of vulnerable countries

Major development in COP27

- Loss and damage Fund → to be funded by historical polluters
- Proceeds will be used for
- ↳ Climate resilience → In Island nations and littoral regions of coastal countries facing rising sea level.
 - ↳ Mitigation → Reconstruction and Redevelopment on lines of sustainability in devastated region

Loss and Damage fund also to be accompanied by the individual steps countries need to take to arrest the rising temperature (1.1°C currently).

Commitment made by India

- India to be targeting 500 GW of renewable energy
- 'Pro Planet People' - Initiative
- Expedite the decarbonisation of transport sector
 - ↳ National Green Hydrogen Mission
- Carbon Sequestration → Forest Green cover
- Assistance to Island Nation under CDRI (Coalition for Disaster Resilient Infrastructure).

Loss and Damage need to be incorporated with technology transfer for better adaptability

18. 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

Disaster management begins with the integration of community resilience to any hazard.

[Not just about responding]

→ [Post facto] → Damage already done
↳ Loss of infrastructure & Human lives

→ [Just Analysis] → Susceptibility to future crisis

→ [Costly] → livelihood loss

[Building Resilient Communities]

→ [Response] → Adequate Disaster responsiveness

→ [Disaster Mitigation] → Reduction of impact

eg. Cyclone in Odisha

→ Impact management → Prevent Infrastructure
disruption

→ Disaster return → Normalcy and elasticity
in approach
eg. Japan

Key strategies

Build Community Resilience

→ Training → Scientific and Objective
→ Generate awareness and
Confidence

→ Scientific Assessment → Early Warning
System
→ Integrated with Community
→ Realtime Tracking

→ Infrastructure → Disaster oriented
eg. Deep foundations in
earthquake

→ Disaster Impact Assessment →
Simulation of Hazard

→ Community participation in
response → food, shelter

Reduce Impact of Disaster

- Supply Chain Intact → Stockpiling in susceptible areas
- Mapping of Hazard prone zones
 - ↳ Alert system
- Quick Rehabilitation : Mass shift camp
- Integrated Surveillance and accessibility management → Food supplies
- Restoration of critical infrastructure
 - ↳ Satellite internet
- Power backups → Mean of Grid failure
- Mobile Health facility → Take care of injured

Disaster take shape when communities fail to mitigate the hazard. It's through stakeholder approach and application of Sendai Framework, we can achieve it.

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

Terrorism has been in a phase of transformation in the digital age. Advent of deepfakes, blockchain and AI has complicated the anti-terrorist operation.

New and Emerging Tech

→ Metaverse → Virtual Reality

↳ Giving training across the world

↳ Realistic experience

↳ Bomb making training

↳ Deepfakes to spread hysteria.

→ Virtual Assets

↳ Digital Assets like Cryptocurrency used to buy weapons and sophisticated technology

→ Earn money laundering and financial theft.

Counter the use

→ Robust digital infrastructure

- ↳ Firewall development
- ↳ Protect critical infrastructure
- ↳ Prevent data leakages
- ↳ Surveillance at Damc net and Damc web

→ Regulate Digital Currency/Asset

- ↳ Taxation
- ↳ Origin information

→ Institutional framework

- ↳ CERT-IN
- ↳ National Coordination Centre for Cyber Crime

— Legal Measure

- ↳ Incorporate digital terrorism and organised crime

→ International Cooperation

↳ Global Security Architecture

↳ Internet Integrity → Addressal
through Internet Intermediaries
↳ Global regulation to stop use of
social media for radical ideas
propagation.

Importance of Delhi Declaration

- SCO key target to tackle terrorism
separatism.
- It acknowledged the increase in
usage of cyber medium by terrorist
groups in weapon acquisition, training
and transaction.
- Align the cyber security apparatus
and prevent proliferation of digital
assets to terrorist groups.
- No indulgence in cross border terrorism
facilitation through digital system.
 - Smokerless war is truth
of future and need preventive measures
to reduce the damage

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

Recently, Government
 launched Agnipath Scheme for the
 recruitment of the army personnel.

Provision

- Training followed by 3 years of Service
- Impetus on Skill development and
enhance employability

A Bitter pill

- Temporary employment → Contractual
nature → No long term
benefits currently
present in Armed forces

Necessary for

Resilience for Armed forces

- Increase in the youth percentage
in Armed forces
- Improves the skill and the

Capacity building

- ↳ Performance based appointment at
armed forces
↳ competition

Efficacy → for Armed forces

- ↳ Need based utilisation
↳ wars are not so frequent.

- ↳ Resource efficiency
↳ large amount of defence
expenditure going to salaries and
pension
↳ Cut the Revenue expenditure
↳ Can be used in capital
investment.

eg. Weapon System
Indigenisation of defence
System

- ↳ Better utilisation of trained professionals
in other sector

Challenges

→ Jobless growth → lack of employment opportunity

→ Quality of Job → Gig economy
 ↳ No social security
 ↳ Contractual labour

→ Armed forces Sentiments
 ↳ for sense of nation

→ Objective criteria for selecting people
 for continuing the service after
 training.

→ Threat of Weakening of Armed force
 ↳ Hostile Neighborhood
 ↳ Border skirmishes e.g. Galwan

Aggravate Scheme

Can help the Indian defence sector to put its resources at right allocations and extract maximum benefit. But it should ensure a better future for Armed

Space for Rough Work

Candidates must not
write on this margin

