

NEXT IAS

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(To be filled by candidate)

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Online

MTS - Full Length Test-1 : 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. :



(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

Next IAS ID: MT23FLT8N004, TC003, 08-09-2023 09:49 AM



Ans1

Windfall Tax

"The most important obligation of state is to secure the well-being of the citizen." Rawlyan

Windfall tax refers to tax on sudden and unexpected gain by an individual or corporation due to reasons beyond his/her control.

Ex) The recent tax applied on gains by refinery companies in India by government when the prices saw an increase due to the conflict in Ukraine.

Windfall tax and redistribution of tax

Criticisms → It can lead to cutting of profit of the firm, which would affect its long term productivity.

- May lead to tax evasion
 - Windfall gains were not truly unexpected, but were planned by the companies
 - It can kill innovation and risk taking
 - Can increase price of consumer
- Positive
- It can help redistribute windfall gain back to consumer by government spending.
 - It makes sure the company is not able to exploit this situation.

In order to be effective windfall gain tax must be national to promote the greatest economic efficiency both at the consumer and at the company end.

Ans 2 The Monetary Policy Committee was established by commanding the RBI to balance the need of sustained economic growth along with a sustainable low inflation in the economy. Its mandate is to restrict inflation at $4\% \pm 2$ band and provide a fillip to economic growth.

Success of MPC

MPC has been able to achieve its goal inflation targeting except last year.

- There has been harmony between RBE and the government
- MPC has been able to change according

global premises.

→ It has also taken into consideration growth by not controlling increasing policy rate to curb inflation.

Challenges

- MPC was unable to achieve the target last year when inflation averaged around 6.5%. wholesale inflation also went to double digit.
- But the reason was global headwinds and it was driven by food and fuel inflation, the core inflation was far more stable.

The MPC alone cannot control inflation. It needs the active involvement of the government that controls the fiscal and spending side of the equation.

M&B

"Gems will not life sustain, but if gold is golden grain,"
 - Nitipadech

Millet or Jhore Anna have been called miracle crop due to their immense benefits for the consumers, producers, as well as the environment.

Millets for producing Agricultural sustainability

Millets are excellent adaptation as well as mitigation crops.

- Can be grown in barren, nutrient deficient soil.
- Thus, no need for extensive groundwater extraction and fertilizer application
- Can be a choice of production for poor farmers (85% are small farmers in India)

Improving food security

85% of total foodgrain is rice and wheat.

Cereals contribute only 10% to the total cropped area.

- * These are low glycemic index food, have higher dosage of micronutrients like iron, protein.
- High dose of iron, protein making them nutrient rich food.
- Will help make the food supply chain more efficient.
- Will lead to nutritional security rather than only food security.

Ques The production of millets in India is continuously decreasing. Government needs to take concrete steps like increasing MSP to improve their cultivation.

Ans4

Tal yevam mission was launched to provide every Indian with 55 litre of potable water per day and achieve the SDG related to clean water.

Significance of The Mission

- According to NITI Aayog 25 cities were facing 'day zero' conditions (Water will be over)
- Lack of water in regions such as Maharashtra, Vidarbha, interior of Odisha (Kalahandi) etc.
- Water leads an important part in health and sanitation (WASH)
- Women spend their time (2/3rd women - some upto 50% of their time)

In fetching water.

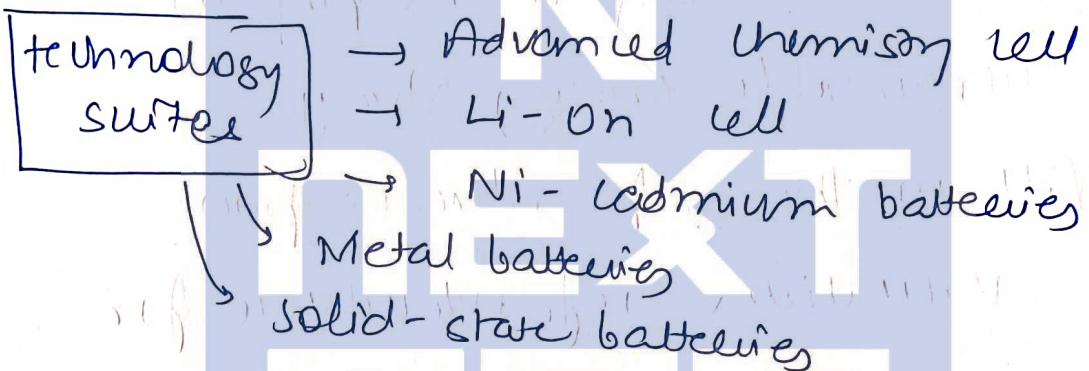
Impediments in achieving the targets

- Institutional and regulatory challenges → uncertainty regarding tube well policies, water use committees, water charges
- Uneven and irregular distribution of water
- Geographical challenges like isolated location, ravines and terrains affected region
- Lack of awareness among people
- Not enough finance distribution

The scheme needs to be converged with other asset creation program like MNREYA to achieve 100% saturation

Ans 5

Battery Energy storage systems refers to the suite of technologies that help store energy from an energy generating process like solar, hydro, nuclear for future use - in a sustained and safe manner.



Applications of battery energy storage system

- Can help in storing renewable energy for use in deficient times.
- Can help in electric mobility.
- Reduce carbon emission by storing energy for future use.

- Can help decarbonise hard to abate sectors like aviation, shipping, electricity, industry

BESS and Indian energy program

- It can help realize the goals of 'Panchnamrit' by helping in renewable energy storage
- Fill in the gap due to poor evaluation infrastructure for renewable energy.
- Help realize 'energy for all' by helping in isolated areas.
- Give fillip to e-mobility and green hydrogen mission.

The governance structure of energy program should be such that every stakeholder is equally benefited.

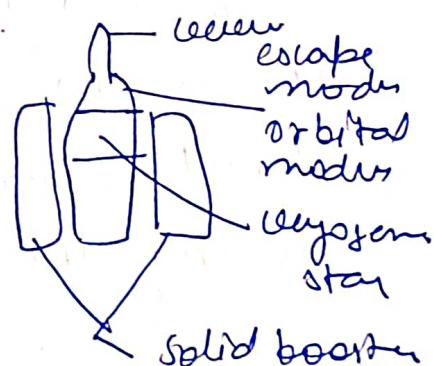
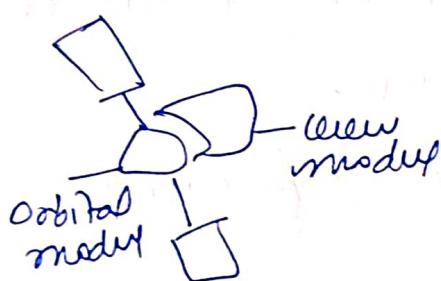
Ans b

"space may seem far away, but it is an integral part of our lives."

— Hon'ble P.M.

Gaganyaan mission is the Indian human space flight mission set to demonstrate India's capability of sustaining human space flight and associated technologies.

ISRO has successfully tested the crew escape module; human rated LMR (Launch vehicle); service module; astronauts (gaganyaan) were sent to Russia for training.



integrated → Pad Abort → test vehicle → unmanned
air drop test → test mission → unmanned
(done by test). High

Challenges in Gaganyaan Mission

- Lack of astronaut training facility in India.
- Risk to astronauts.
- Lack of experience in manned flights.
- tracking of astronauts in the space and protecting them from cosmic radiation.

Benefits of the mission for society

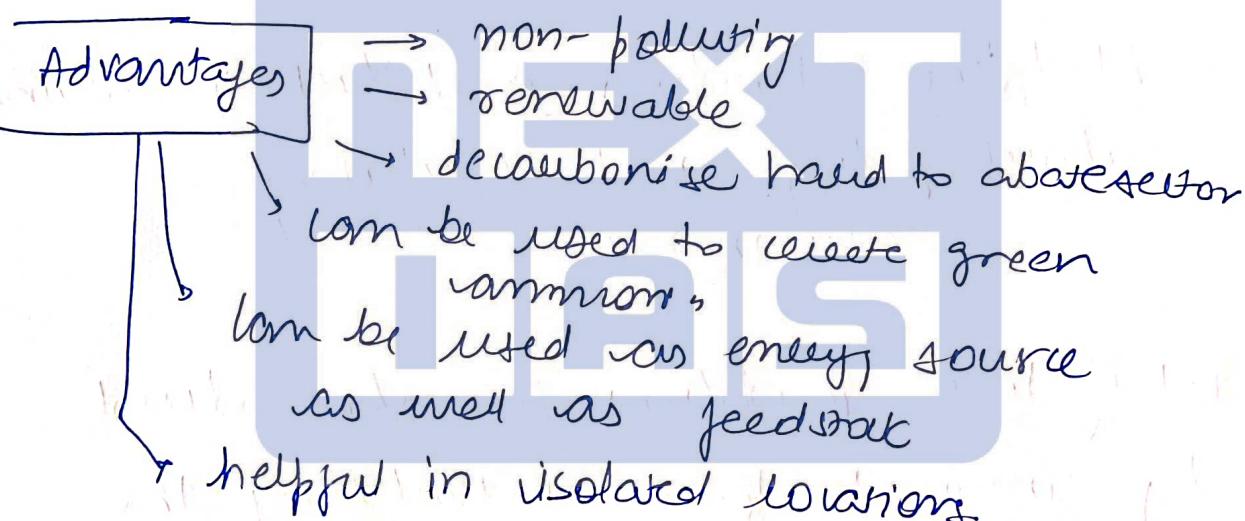
- Will allow future sustained mission in space - ability to perform experiments in micro gravity.
- have immense potential for experiments in field of health and food/agri-systems. (Chinese took rice seeds with them in space and will plant those).
- Will give a moral and mental boost to the youth and scientists.
- development of scientific temperament among the people.

Will cement India's position as a major space power.

Ans 7

India launched the Green hydrogen Mission to become a global hub and net exporter of green hydrogen.

Green Hydrogen that is made from electrolysis of water using renewable energy can be the silver bullet in tackling climate change & pollution.



But there are certain creases that need ironing out

→ High cost of manufacturing \Rightarrow ROI vs coal and natural gas.

- Lack of manufacturing capability of electrolyses in India. (80% imported.)
- Use of conflict minerals in batteries and electrolyses (therefore not completely renewable)
- Concern about overuse of water - India is already highest extractor of ground water
- Fledgling technology and lack of certainty about policy and regulatory environment

All of these problems can be solved by sustained effort for unlocking the economies of scale and government incentive for jumpstarting projects.

It will prove ~~an~~ ally in achieving energy security that is set to increase to 1.7 X by 2030.

M&S

Recently, Joshimath a small town in Uttarakhand saw land subsiding and displacement of population due to rampant and unsustainable development coupled with geological reasons.

Key lessons learned from the Disaster

- The land subsided since it was built on glacial till deposits. So geological vulnerability mapping must be done before undertaking developmental projects.
- The Joshimath NTPC power project caused bursting open of an underground reservoir. Therefore utmost care must be undertaken for Hydro power projects in Himalayan regions.

- Development and tourism activities must be sustainable and in control.
- According to Wadia Institute of Himalayan, Dehradun → There is an increased risk of glacial lake outburst flow in the Himalayan region.
- Capacity building of local people and incorporation of local people and local knowledge in disaster safety activities (T.C. Panel Committee)
- Contingency plan must be in place for rescue and rehabilitation for people.

According to IPCC AR6 The occurrence of extreme climatic events will drastically increase in coming years. To overcome these we must have adaptation and disaster resilience built-in development process by design.

Ans

Punjab has seen a violent Khalistan movement, abetted and fanned by Pakistan was a state sponsored policy to break India with thousand cuts.

Operation Bluestar and the assassination of Indira Gandhi and the 1984 riots all deepened the wounds.

Recently we saw use of separatist parties, separatist leaders, calls for referendum, attack by radicals in Indian embassy in UK and America.

There is almost negligible support of Khalistan by Indian Sikhs. The movement is mainly driven by Pakistan backed foreign radicals.

Measures to handle The Khalistan issue

- * Counter Propaganda by India on lines of USA Counter propaganda communication strategy.
- * Increased surveillance and security of Indian embassies.
- * Extradition of nationals involved in attacks on Indian people and property in foreign.
- * True devolution and decentralisation of power in state.
- * Robust border security and combating the drug trade in Punjab.
- * Strategy of winning hearts and minds of disengaged people.

Sikhs remain one of the most loyal citizens in India serving in Army and civilian roles alike.

Ans 10

Drones have become the preferred choice to deliver drugs and drop Army and help in infiltration especially in the western borders of India.

Hon'ble Home minister had enhanced Terrorist moving from guns to drones.

- * Drones are low flying and small (cross - sectional area → Hard to identify on radars)
- * Anti-drone missile systems are expensive cost of drone > cost of missile to take it down
- * Drones are easy to use and cheap.
- * Drones can be improvised and turned into carriers or loitering munitions by sticking a bomb to it.

Suggestions to tackle drones

- * Build human intelligence network to track movement of drones in sky.
- * Equip low-altitude radars at places with high frequency vicinity.
- * Use non-lethal anti-drone systems → EWS - suite or Interception of DRON.
- * Awake people about drone attack and smuggling by drones.
- * Arrest smugglers and investigate the channels that employ drones.
- * International cooperation to stop drones for terror activities with other countries.

India must equip itself with anti-drone and counter-drone systems since war is increasingly going into non-traditional domain.

Electricity Amendment Bill 2022 was brought in to effect a paradigm shift in the energy ecosystem of the country.

Since India's energy demand is bound to increase 1.7 times (IEA) by 2030, it is an important step towards promoting energy security and ecosystem.

Advantages → Key features

- Dismantling the dominance of state-owned discoms. (license reform)
- CERC will set the floor price.
- Network owning discoms will have to allow private discoms to use its network for a fee.

Advantage for consumer

- Increased choice among DISCOMS.

- Increased competition will lead to better price discovery.
- Better quality of service

Advantage to DISCOMS

- Licensing reforms
- Dismantling dominance of nervous
power DISCOMS.
- Anyone can set up a DISCOM and use existing network for distribution
- Fee to renew power distribution
- Intention to cut on AT&C losses - 20%

Advantage to Environment

- Obligation on Renewable Purchase obligation
- Renegotiation of Power-purchase Agreements
- ease of business for renewable power
- would lead to better efficiency and shift to renewable energy generation.



Shortcomings

- States see it as affront to federalism.
- Central Authority will set base / poor
rule → effect on subsidies given by
State
- Network owning discom may use fee
to cross subsidisation and gain
unfair advantage
- Backdoor to crony capitalism

Suggested Reforms

- Procedural safeguards for crony capitalism
- Consultative mechanism for fallout between state and centre
- Rationalisation of subsidies
- Other steps - Smart meters, feeder separation, rooftop solar policy

The Amendment is a positive step ~~in~~
by the government

Ans 12

SERBI established as a statutory body in 1992 in the aftermath of Hawala
Malta scam is a premier institute to safeguard the interest of investors in securities. and to promote development and regulation of the stock market.

Recent controversies like Adani controversy and NSE Chitra Ramkrishnan scam, Co-location Scam etc. has put questions on the role as the SERBI was caught lazing.

Challenges faced by SERBI

→ funding issues: Major part is committed expenditure on salaries, pension etc.

Lack of funds for new technologies
to defeat slums.

- * Capacity building of employees is not upto the mark.
- * Anomial literacy among people are minuscule.
- * Government intervention in selection of SEBI Chairman
- * International and transnational character of slums - making it difficult to defeat them as.
- * Lack of robust security measures in connected institutions like Banks, stock brokers etc.

Reforms suggested

→ Innovate methods of financing slums.

Rationalisation of committed expense.

- Use of latest technology like AI, Machine learning and Big Data Analysis to flag scams.
- Capacity building of employees.
- Fixing legal issues in banks (PNB Scam), stock exchanges.
- Awareness campaigns for investors and code of conduct for stock brokers.
- Stricitation on illegal activities like front running, insider trading and dabba trading.

There is a need for multi international cooperation.

A multi-stakeholder approach is needed to turn SEBI from a reactive to a proactive institution.

Ans 13

"Gems will no life sustain, but if soil is golden grain."

- Klopstock

Agriculture is the backbone of the country. It constitutes 18% of GDP. India with 20 agroclimatic zones and 46/60 types of soil provides food for the whole world.

Issues in Agriculture in India

- Underemployment - despite only generating 18% GDP it employs 45% workforce
- Handicrity size holdings → average size is 1.2 hac (85% is small farmers).
- thin file lines → 55% are landless agricultural labourers. Share of non-institutional workers is 2/3rd.

- Reliance on uneven, unpredictable rainfall - 55% area is rained.
- Unpredictable government policies
 - export policy
 - MSP - few take benefit, skewed towards rice and wheat
 - Subsidy - leading to overuse of fertilizers - very
- Bottlenecks in food processing - laws like Essential Commodity and APMC Act.
 - ° Lack of infrastructure and high logistics cost.
- Placing yields when compared to countries like China and America.

Technological solutions

- Modified crops - with better yields, pest resistance and biofertilizer using gene editing technology.

- Satellite service for weather prediction
↳ Skymet and M-Kisan app
- Online marketplace for better price discovery
↳ e-NAM
- Technologically improved inputs like micro-Irrigation → nano-fertilizer
↳ nano-Urea, soil health card
- Skill training for farmer at KVIC
↳ Vigyan Kendras
- Transformative steps such as digital Agriculture ↳ Indian Digital Agriculture Enterprise, hydroponics, aquaponics →
- Using drones for land record maintenance

Technological intervention in Agriculture will unlock the animal spirits in Agriculture and lead to resilient food systems.

Analys

According to a report by NITI Aayog, India is a net water exporting country mainly due to 13.1% Agri exports. It is a double whammy because India is also the largest extractor of GW with 2/3 of GW overexploited and polluted.

Impact of irrigation on Environment and Natural Resources

- * Excessive irrigation can lead to alkalisation of land and decrease in crop yields.
- * Rainfall on irrigation causes eutrophication and harmful algal bloom.
- * Excessive stress on water resources like groundwater, rivers

leading to water shortage for cities, drinking water.

- * Uneven irrigation disturbs weather patterns since water vapour is a potent green house gas.
- * Diversion of water for irrigation can lead to low influx of freshwater in seas / oceans leading to loss of coastal ecology and marine life.
- * It can also lead to soil erosion and formation of gullies and landslides.

Measures for sustainable irrigation practice

- Integrated watershed development and rainwater harvesting
- Establishment of pani homchayas

- and water use committees by Renuka.
- Milieu irrigation techniques like drip irrigation and root irrigation.
 - Rationalisation of power subsidy for irrigation and feeder separation Reg in Punjab.
 - Traditional knowledge like naukar in Uttarakhand, Tohads in Rajasthan and bamboo irrigation in Meghalaya.
 - Ban on new tubewells and rationalisation and regulation of existing tubewells.
 - Interlinking water-supplies and water-deficient river channels with safeguards.
 - govt steps like Amrit Sarovar, Catch The rain campaign.
- Mihir Shah recommendation should be looked into.

Ans 15

Technology forms the subtext of human development. [Dr. C.V. Raman] rightly said no human development is possible without creation of scientific and social knowledge.

[Contribution and impact of Homi Jehangir Bhabha]

- Laid the foundation of Department of Atomic Energy along with Pt. Nehru.
- Supported establishment of INISPAR along with V. Venkram Sastry.
- According to G. Perkovich in book 'India's N bomb' - he had Indian Atomic bomb in mind as director of DAE.

- Laid the foundation of India's 3 stage nuclear programme.
- India benefited of the 1974 nuclear test that made us strategically important and gave us security in evolving geopolitical issues.
- The upcoming LIGO project is also a buildup that we started due to efforts of Dr. Ramanathan.

Contribution and impact of Dr. Vikram S. Sarabhai

- Established INDOSPAC, precursor of ISRO.
- helped establish IITM Ahmedabad and Space centre in Ahmedabad.
- ISRO's "Lion's Gulch" Chandrayaan and upcoming projects like Gaganyaan and Aditya mitron will owe

a great deal to their vision.

- His efforts made India a major contender for space super power and early adopter of technology.
- Also led to development of dual use civil-military technology (eg MIRV)
- Led to development of Indian missile programme

India's success today is indebted to great scientists like Homi Bhabha, Vikram Sarabhai, Satish Dhawan, K. S. Sondhi, Arunachalal, APJ Abdul Kalam etc.

We should increase investment in R&D (from 0.65% to 2-3% of GDP) to take sustained and high economic flight.

Ans 6

Generative Artificial Intelligence is a subset of AI technology that has the potential to create entirely new texts, images, graphics, ideas, animation - or from a simple user input.

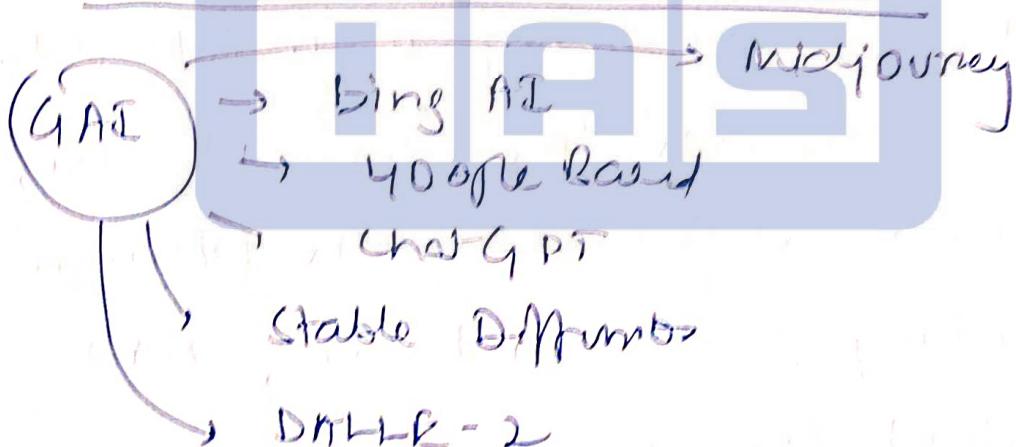
They are based on infrastructure

like pretrained transformers,

large language model, generative

adversarial networks (GAN),

Variational autoencoders (VAE)



They have opened new dimensions

and pushed boundaries of innovation

Anyone can write songs, compose

music, make graphics using generative AI.

- Will make the life of people easier by helping them in mundane everyday tasks.
- Cost saving and improved efficiency
- Improved innovation - as machines can think like human beings.

Impact on Society and Concomitant Challenges

- It has led to base standardisation of creative jobs like music company, artist, song writers etc.
- ~~If~~ Easy access - one click access to creativity will cause decrease in value and wage of creative jobs.

It will take toll on mental health
single man burnout creativity from
intellectual interest and pears. Now
machine is better than ~~humans~~ most
humans.

- Reflection of biases and prejudices
in training data in results by
generative AI.
- Issue of copyright since they were
trained on copyrighted material
Whom would the copyright of ~~of~~
generative model belong - author in
training data, consumer or AI.

To combat these significant impacts -
Scientists led by Elon Musk have
asked to put a moratorium on
development of superintelligent AI till
procedural safeguards are set.

Ans 17

COP 27 in Sharm-el-Sheikh Egypt

was the international conference by
parties to the UNFCCC that came
into existence as a result of Rio
Earth Summit in 1992 with a
goal to stop climate change

One important decision other than
Sharm-el-Sheikh implementation
strategy was Mangrove Alliance
for Climate.

The purpose of this alliance is to
safeguard and protect the dwindling
mangrove forest in the world,

→ It aims at sustainable use of
mangroves and development

→ The local people dependent on
it.

- It also aims to promote mangrove plantation and regeneration.

Importance of Mangrove in maintaining tropical ecology

- Mangrove salt can clotones and give rise to edge effect.
- Helps in protecting marine biodiversity.
- Acts as storm breakers and protects cities from inundation pp in Philippines and Indonesia - Malaysia.
- Stores a lot of carbon and help control climate change and global warming.
- Provides a wide variety of ecosystem, regulating and providing services.

- * Provides vocal community with livelihood options. It helps in coastal management.
 - Regulates the salinity in the coastal areas.
 - Helps reduce erosion of coastal areas.
 - Protects the marine biodiversity and help farmer in fishing.
- Threats
- shrimp farming
 - climate change
 - extreme weather events
 - Lopping
 - foreclosure from development & placement of tourism.

MAC along with other mangrove initiative like MISHTS and SAIME (India), friends of Mangroves etc will help achieve SDG of life above land and indirectly help achieve other SDG as well.

Ans 18

Coalition for Disaster Resilient Infrastructure was launched by India at leaders meet in New York to mainstream disaster resilience in the brown of development.

It was a logical step and a force multiplier after global convention like Hiroshima framework and Sendai framework for DRR.

CDRI aims at correcting the balance between Adaption and migration.

Present global policies are heavily biased towards migration. Small island developing states are at the receiving end. Tuvalu will cease to exist by 2050.

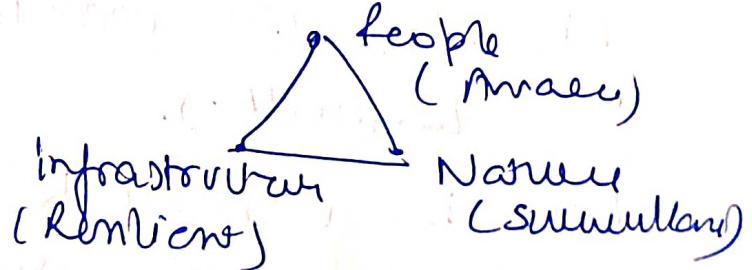
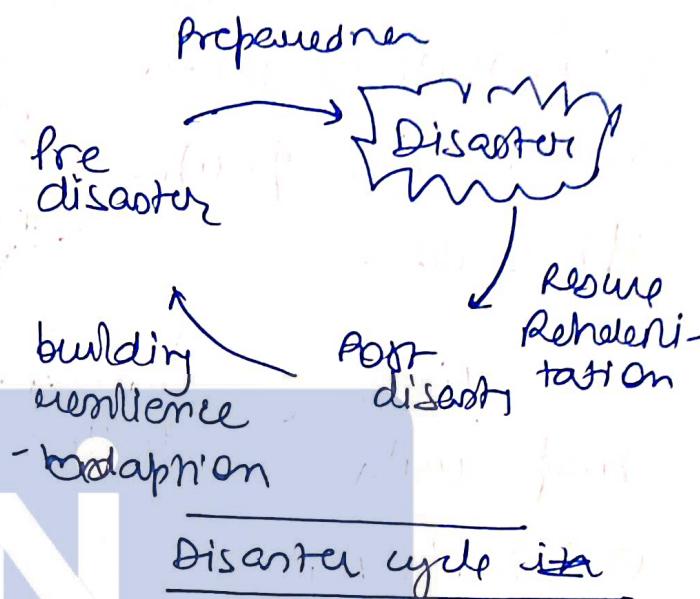
New Strategy to tackle Disasters in India

Indian approach to disaster is heavily biased towards the Post-disaster phase.

It is heavily concentrated on Rescue and ad hoc rehabilitation.

India's approach to disaster has been ad hoc and reactive and response in fragments.

Although there have been some great case studies like Odisha model where they take integrated view of disaster and early warning system.



There is a need to take a more

integrated and holistic

view rather than

a disaster specific

approach.

One disaster map with

vulnerability
mapping at

hyper granular level. Integrating

building of mention infrastructure to
deal with disaster of future (AR6
- & multi increase in future).

Provision for adequate finance and

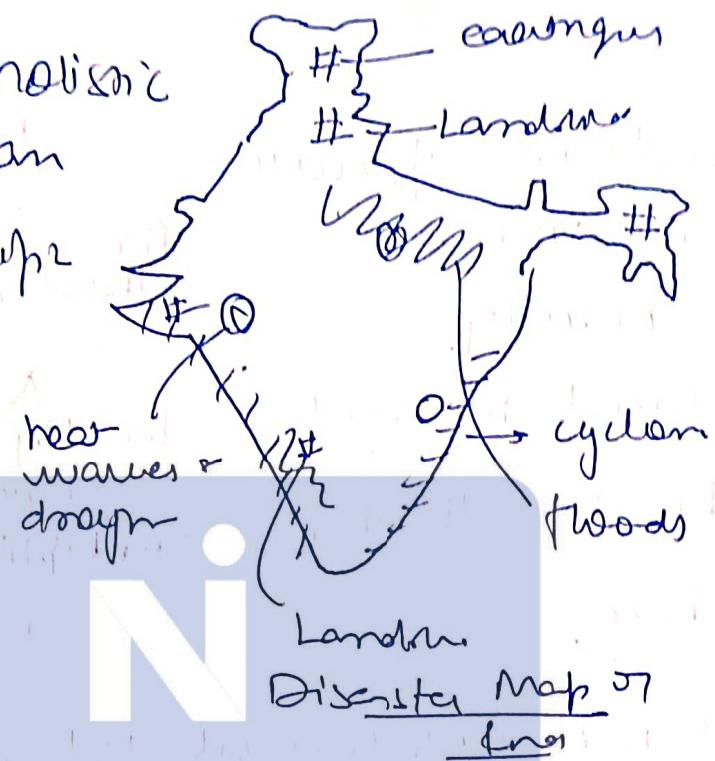
overhaul of DMA 2002 (Standby committee)

and inclusion of local people in

Disaster risk reduction (J-C. Plan

committee).

There is a need to move to a
proactive, multidimensional approach



Ans With the advance of internet and globalisation, cyberspace has become the foreseen medium of negotious activities and is evolving as a new theatre of war and non-state actor attacks. The rising case of Ransomware attack like Lockbit and Rust attacks in USA, hacking of AIIMS Delhi seems and attack on Critical infrastructure from Iran has highlighted concerning trends.

- | | |
|---|----------------------------|
| <u>Key factors contributing to this trend</u> | <u>other cyber attacks</u> |
| | → Malware |
| | → Cyber espionage |
| | → Cyber terrorism |
| | → Social engineering |
- High return on investment → Since it is low cost and result is very high.
 - All pervasive nature of Internet and

Making interconnectedness of the world.

- Use of legacy systems and patchy softwares making it easier to compromise low awareness among people
- Lack of international cooperation and transnational character of crime.
- High anonymity and relative safety to the attacker

Impact of Ransomware attacks on sectors

- Health Sector → Ransomware attack on AIIMS Delhi led to stopping of health service, confusion and potential data leakage.
- Lowing leak case.

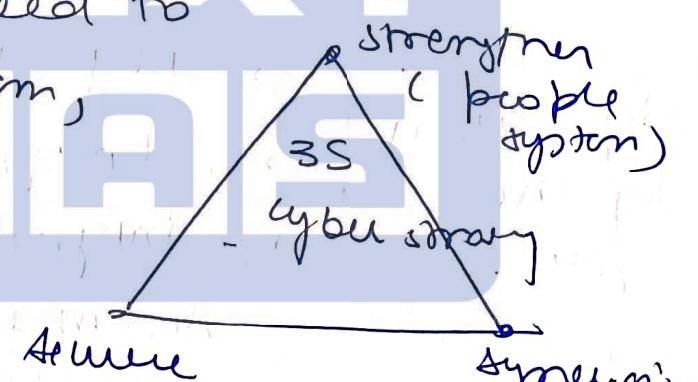
- Information - Online → Leaking of online data like phone number, credit card etc.

Energy → From and Mumbai power
line attack - Leads to stalling of
all services.

Industry / services / manufacturing - com
lead to stopped installations
and loss to GDP.

Ransomware attacks eode trust of
consumers in the system

There is a need to
patching system,
train people,
and build
security by
design in

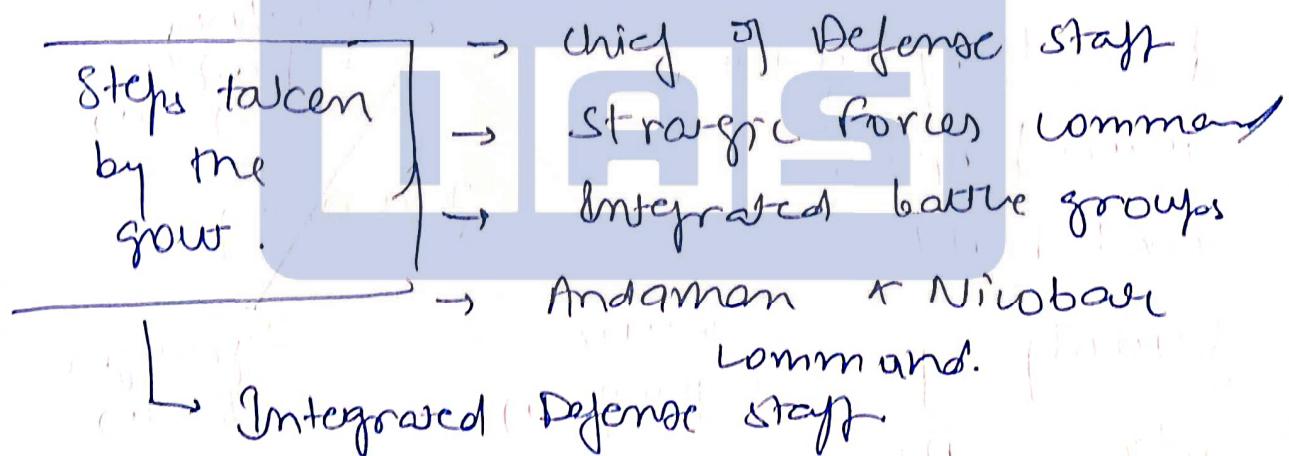


computer systems. Only by this we
shall be able to safeguard and
restore trust and take full benefit of
the growth of intances.

Ans 20

According to strategic expert Nitin Gokhale India cannot achieve the US trillion dollar GDP without effective management of coastal and territorial boundaries.

To give effect to this Raoya Review Committee, Shukla Committee etc. have advised better coordination and cooperation among the border agencies.



Further steps were needed

→ Liaisoning and better coordination

in the maritime domain between
Indian Navy, Indian coast guard and
Marine police of states (CAG → state)
Coordination).

* Coordination between various intelligence agencies like IB,
R&AW, Defense Intelligence Agency,
NTRO, GIMARC, IFC and
NATGRID initiative, tracer.

* On the borders - North Eastern -
Assam Rifles has dual control from the
other border - between BSF and
Indian Army and BSF and
local police.

* There is a need to take steps towards
theatralisation of command.

Although steps have been taken but every force have their concern. According

to Air Chief Marshal RKS Bhadauria

it will lead to pauperisation of

Air force since Airforce already have den air corps and won't

be able to perform an offensive role

Steps must be taken to integrate Indian Airforce with Indian Navy Aircraft

lascouer and Local level theaterisation

like Integrated Battle groups and

specialised integrated Strike corps

can be established accordingly to

Bhauat Raamad.

To safeguard India, a coordinated and cooperative structure is sine qua non.