



Nitin Sir

COMPREHENSIVE TEST

MAINS MAXIMA 2024

FORTUNE IAS ACADEMY

GS - PAPER III

Name Of Candidate	NANDANAA G.P.		
Email Id	[REDACTED]@mail.com	Roll No	24142
Mobile No	[REDACTED]	Date	

Time Allowed: Three Hours

Maximum Marks: 250

INDEX TABLE		INSTRUCTIONS	
Total marks	119	1. Please do furnish Name, Email, Roll No, Mobile No and Test Code in answer sheets. 2. There are TWENTY questions printed in ENGLISH, all questions are compulsory. 3. Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one. 4. Answers to Question Nos. 1 to 10 should be in 150 words, whereas answers to Question Nos: 11 to 20 should be in 250 words. 5. Word limit in questions should be adhered to. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.	
Remarks:			
		Start Time :	9
		End Time :	12

FORTUNE IAS ACADEMY

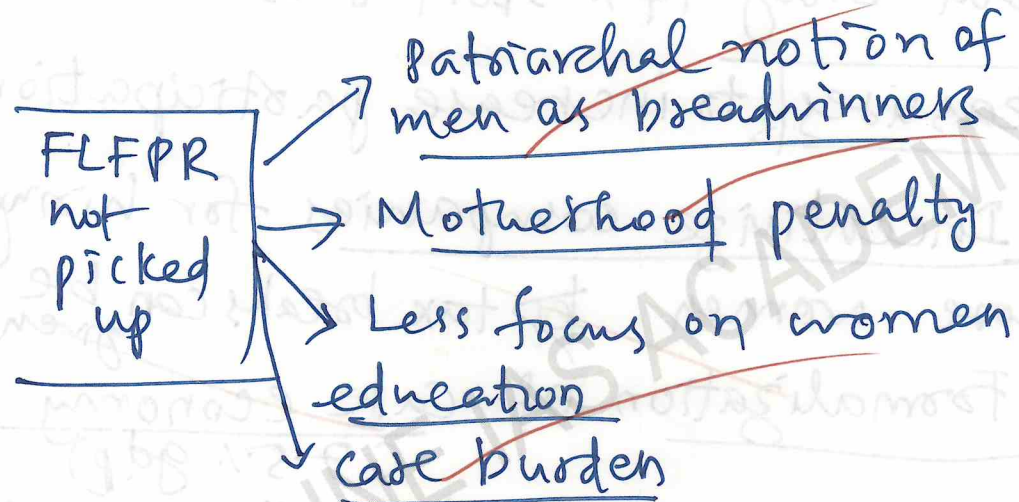
TABLE OF MARKS			REMARKS
Q NO	MAXIMUM MARKS	MARKS OBTAINED	
1	10		Question Understanding:
2	10		
3	10		Presentation(Neatness):
4	10		
5	10		Content:
6	10		
7	10		Innovation:
8	10		
9	10		Other suggestions:
10	10		
11	15		
12	15		
13	15		
14	15		
15	15		
16	15		
17	15		
18	15		

SECTION: A

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1. The female labor force participation rate has not picked up substantially despite significant advancement in gender justice. What are the economic impacts of reduced participation of women in workforce? Suggest measures to increase their labor market participation? (10 marks, 150 words)

India has 37% female labour force participation rate, which is less compared to other countries like China having 60%



Economic impact of reduced FLFPR

- ① Reduce GDP contribution of women workforce
- ② Care economy not being accounted

disincentivize women from joining economy

⑤ wastage of acquired skills
by women.

→ 42% STEM graduates are women
but only 14% STEM jobs

Measures to increase participation

① Incentivize companies for hiring more women → tax breaks can be given

② Formalization of care economy
(7.5% gdp)

③ Monetize works done by women
to improve economic independence

→ Tamil Nadu - Magalin Vonnai
Togai

④ Awareness of opportunities for
women to break barrier

→ DD Bharati telecast 'Jahan Chand

2. Elaborate on the salience of solar energy in India's journey towards a renewable energy transition? What are various efforts undertaken by the government to enable widespread adoption of solar energy? (10 marks, 150 words)

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India has 3rd largest solar energy installations which contribute to 15% of our energy mix

Salience of solar to renewable energy

- ① Reduce use of coal & other non renewable in energy mix (60%)
- ② No carbon emission compared to other renewable energy ways like ethanol
- ③ Availability of vast amount of barren land in India
eg) states like Rajasthan - 9000 GW potential
- ④ India's works in International platforms to promote

Various efforts by Govt to promote

① PM Ghar Muft Bijli
Yojana - Roof-top solar

② PM KUSUM
'Annadhata to Ujadhata'

③ Only 5% gst for
solar panels

④ Skill development

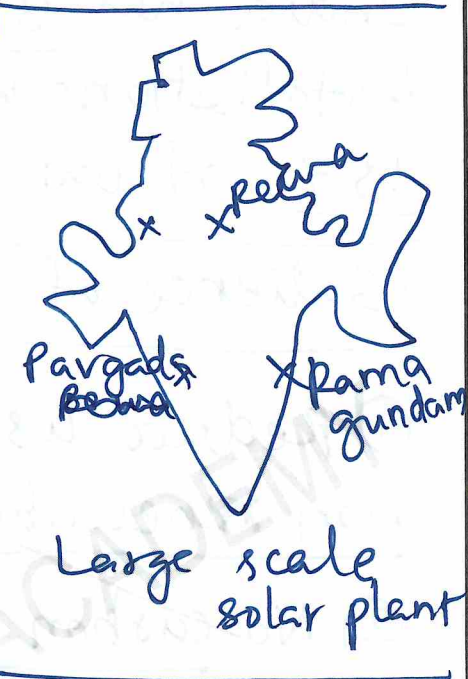
schemes eg Surya mitra for solar panel
operation

⑤ PLI, DLI schemes to promote
manufacturing of solar panels
in India

More to
do

Address raw material
availability like silicon
for solar panel

Address waste from panel



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3. How does Multidimensional Poverty Index (MPI) provide a more comprehensive understanding of poverty beyond traditional measures using income and consumption levels? (10 marks, 150 words)

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NITI Aayog multidimensional poverty
Index states that only 11% of ^(MPI)
India's population is multi-poor

MPI indicators

- ① Income level
- ② Education → ~~mean year of school~~
Enrolment rate
- ③ Health → ~~Affordability of health~~
care
Out of pocket expenditure
- ④ Financial empowerment
— Bank account penetration.

MPI [more comprehensive] than
traditional

⑤ MPI | Traditional

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Focus on a dignified
life for an
individual
~~eg~~ water availability
considered

More animal
existence above
poverty line

Updated indicators
as peer modern
needs

~~eg~~ Internet penetration
considered

Only traditional
service considered

Follow global standards
by UNDP MPI

More focus on
per capita income

Yet,
More to
go

→ High prevalence of
stunting (30%) wasting (20%)
even with better health
outcome

→ less focus on care

4. Price fluctuations in agricultural products is a major factor influencing the profitability of Indian agriculture. Analyse the major causes for the same and suggest measures to reduce price volatility. (10 marks, 150 words)

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Price fluctuation in agriculture points towards the unplanned agriculture production plan followed by India.



Major causes of price fluctuation

Farmers

① Cultivation without knowing market dynamics

→ only 5% farmers know market need before sowing (NITI Aayog)

② MCD oriented cultivation

Economy

- ① Fluctuation in consumer demand as per season
eg high need for juicy fruits in summer
- ② Govt policy of controlling export import for food security
eg wheat export ban in inflation
- ③ Lack of cold storage facilities
leading to perished crops off season

Measures to address

- ① Cold storage facilities improved
- ② Food processing to ensure round the year supply
eg dehydrated onion flakes
- ③ Incentivize crop diversification
led market dynamics through FPOs, cooperatives

5. In the context of the theme of National Handloom Day 2024, explain how the integration of technology and innovation in handloom weaving can expand market access and enhance skill development for artisans. (10 marks, 150 words)

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Handloom weaving is a labour
intensive sector which need to
be harnessed for aim of increasing
manufacturing gdp 17% → 25%

Technology & innovation
integration

- ① New age automated handlooms
- ② sustainable handloom practice
through recycling of handloom
waste.
- ③ New age marketing techniques
based on social media.

Role of tech & innovation is

I. Market access

- ① Increased competitiveness of

countries

③ Better export potential for handlooms

④ can invite foreign company collaborations
eg Italian company Verona's role in Tirupur model.

II Skill development

① Incentivise skill acquired productivity

eg PM Viswakarma scheme

② Better productivity due to new age machinery

eg Automated sewing machine instead of manual

③ Attract new age fashion designers to take up handloom as sustainable model

eg Elappacha - leaf printing is handloom startup of Kerala

6. Carbon capture, utilization, and storage (CCUS) offers a solution to climate adaptation and mitigation. Comment (10 marks, 150 words)

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Carbon capture utilization and storage (CCUS) is a way of mitigating the effects of climate change.

CCUS as solution

I. Adaptation

- ① Promote carbon trade as an option to address climate change
- ② Incentivize govt in investing in carbon capture infrastructure
eg sea weed park Ramanathapuram
- ③ A way of financial incentive to people who follow capture
eg farmers can trade captured carbon in carbon exchange

- ② Promote circular economy
eg Norway store captured carbon
underwater
- ③ Help achieve the aim of
Paris 1.5°C goal

Issue

- ① Technology intensive capture
process
- ② couldn't find a sustainable
storage mechanism due to
retaliatory efforts.
- ③ Lack of accounting & tracing
footprints

Way Forward

- ① Global consensus on investment
in CCS technology

7. ISRO has recently launched X-ray Polarimeter Satellite (XPoSat) aboard the PSLV C58. What do you understand by polarization of light? Discuss the payloads in the recently launched XPoSAT. How does the launch of XPoSAT boost India's prestige in space domain? (10 marks, 150 words)

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XPoSat launch by ISRO adds to India's capability of studying cosmic events with help of x-ray polarization

Polarization of light refers to the changing of polarity of light and using it for achieving human needs.

Payloads in XPoSAT

X-ray devices that help analyse cosmic events using the x-ray capability

Polarimetry devices to polarize

light and search for new

Launch of XPO SAT lead to
India's prestige

- ① Prestige of developing capability
to send X-ray polarimetry device
to space
- ② Can bring polarimetry data
which can be useful in further
space studies
- ③ Inspire Indian & world youth
to pursue career in space
- ④ Among one of the few
countries which developed
X-ray polarimetry capability
- ⑤ Impetus to further missions
like Gaganyaan, Shukrayaan

8. Critically analyze the role of Artificial Intelligence (AI) on the national security paradigm. (10 marks, 150 words)

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In the era of Industry 4.0, need for AI in security is much needed

Role of AI in National security

① Automated border management

Ex Israel - Jaguar robots in border

② Border surveillance efficiency

enhanced

Ex BOLD QIT in India - Bangladesh border

③ Monitoring illicit activity can be made efficient

Ex MQ9 UAVs for drug traffickers monitoring

④ Internet of Battle of Things

an automated security infrastructure.

gaps & threats

② A small data error in intelligence
can cause human risk
eg Mons - 13 killed civilians due
to intelligence error

③ Can be used to manipulate
civilians and cause threat
eg deepfake video of Ukraine president
asking soldiers to quit

④ Automation of terror

eg ISIS telegram bot for recruitment

Way Forward

① Strengthen AI security infrastru
cture for prevention

② Training soldiers on threats
of AI and ways to overcome
the same

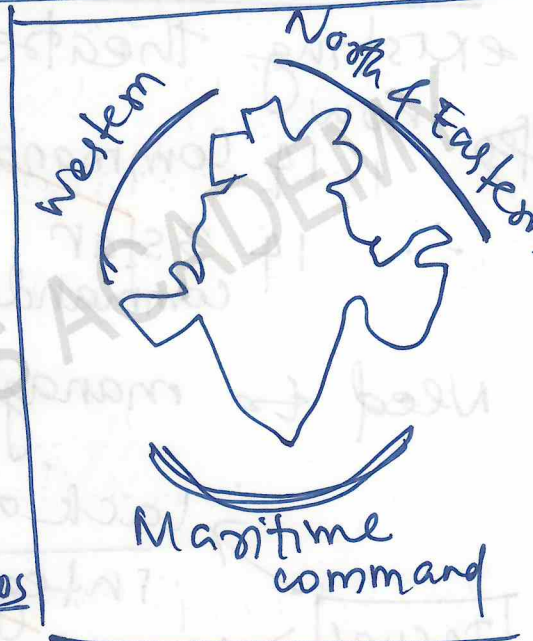
9. Analyze the role of Chief of Defense Staff (CDS) in the implementation of Integrated Theatre Command. (10 marks, 150 words)

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Chief of Defense staff post was created as per recommendation of shekhar kargil review committee.

Integrated theatre command

- ① Pool the resource of all three services
- ② Coordinated action against immediate threat
- ③ Unified service ethos in armed force



Role of CDS in ITC

- ① Act as a control unit to balance

③ Avoid conflict when three service with three different values come together

for Army follows regiment fidelity but not Navy & Air force

④ Coordinate the unification of existing theatre command

for now 14 Commands → 4 Commands
∴ 14 3 star commanders → 34 3 star commanders

Need to manage 10 left behind

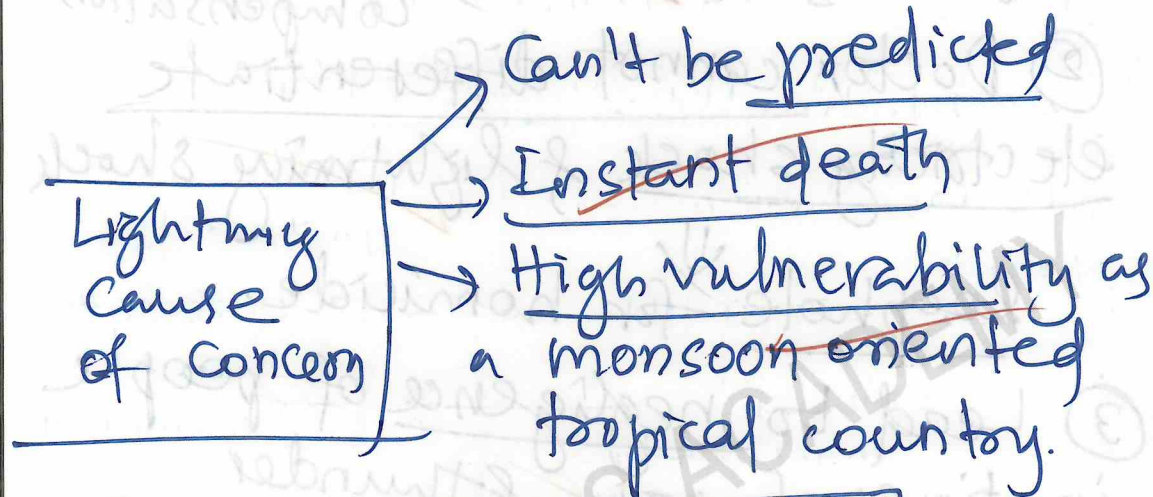
Issues

- Lack of resource to integrate into 4 command
- CDS majority from army can cause conflict in values
- concentration of power in single person.

10. Lightning deaths are a cause of concern in India. With reference to the above statement, discuss whether lightning needs to be declared a natural disaster by the union government. (10 marks, 150 words)

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Lightning cause 20% of accident-deaths in India yet it is not a natural disaster as per NDMA Act



Natural disaster status

Positives of including lightning

- ① Rs. 4 lakh compensation from NDMA fund
- ② Address huge number of lightning deaths

area

Issues

- ① Can brand every death as lightning death $\Rightarrow$ Misuse for compensation
- ② Doctor cannot differentiate electricity shock & lightning shock

Loophole $\Downarrow$ for homicide

- ③ Lead to negligence of people in times of rain & thunder
- ④ Huge burden on govt for compensation

Way Forward

- ① Promote installing anti-lightning devices on tall buildings
- ② Find lightning hotspots and

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SECTION: B

11. Examine the relationship between globalization and inclusive growth? How can countries ensure inclusive growth in an increasingly globalized world? (15 marks, 250 words)

Post globalization, India's gini coefficient has increased 0.2 which means inequality & affecting inclusive growth.

Relationship between globalization & inclusive growth

Positive relation

① Increased job opportunities for high skilled people

eg BPO boom → IT sector job growth

② Multinational companies set up branches lead to competition & better choice of service to customer

eg Telecom sector, govt monopoly → private sector boom

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④ Increased focus on health and education by govt led to human resource development

⑤ Opportunities for women which broke gender stereotypes
eg call centre employment

Negative relation

① Inequitable distribution of resource created haves & have nots
eg 1% population own 40% resource (Oxfam)

② Increased exploitation of workers by multinationals
eg hire & fire culture rampant.

③ Discrimination faced by vulnerable population
eg Foreign discriminate married

eg 25 million gig workers.

⑤ Created & intensified rural-urban
divide of development

eg Juhu vs Dharavi in Mumbai

Ensuring Inclusive growth

① Schemes for equitable income
distribution eg Inheritance tax
- 50% in Japan

② Ensure basic social services
to all citizen

eg PM Garib Kalyan Yojana

③ Strict enforcement of Labour
security codes for preventing
worker exploitation

④ Incentivise companies that
promote inclusive growth

12. How does inflation affect the growth prospects of Indian economy? Evaluate various policy measures and instruments that aim to achieve the balance between inflation and growth.? (15 marks, 250 words)

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RBI Act was amended in 2016 to state aim of RBI to control inflation keeping in mind of growth

Inflation affect growth

Individual

① Affect income of fixed income groups thereby act as a kind of inflation tax

② Reduce purchasing power of individual

③ Reduce affordability of basic services like health education

OVERALL Economy

① Monetary & fiscal policy tools increase bank rate which

③ Cause rupee depreciation which affect foreign reserve

④ Reduce the competitiveness of products exported

Evaluating policy measures

Monetary policy - RBI

⊕ → Control inflation through interest increase.

→ advantage to depositors

→ reduce credit-availability

⊖ → crowd out investment

→ reduce incentive of people to take bank as primary option of saving

Fiscal policy - Govt-

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① → Reduce money supply
to economy Reduce inflation

② → Stall infrastructure projects
→ Affect purchasing power of
people

③ Essential good control like
export ban

④ → Food security ensured

⑤ → disincentivize exporters
→ Affect trust based governance

Way Forward

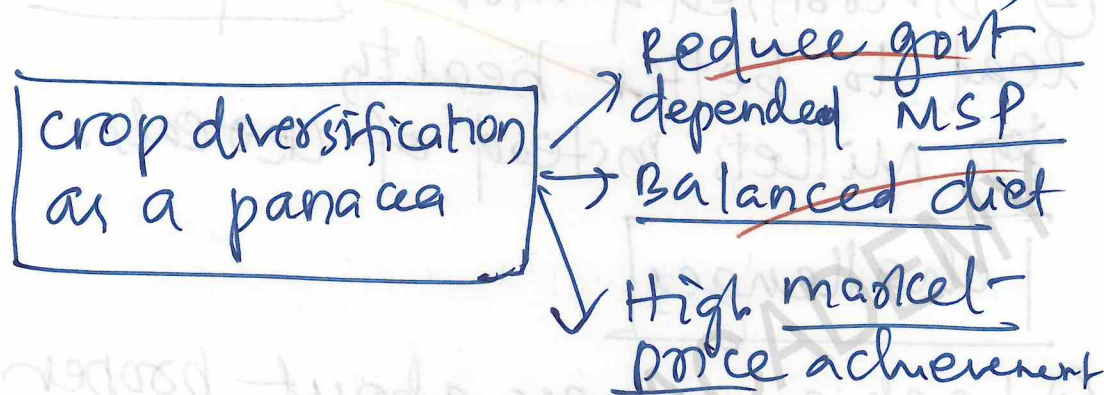
① Focus on agriculture stable supply
throughout year through
cold storage facilities

② Inflation indexing of wages

13. Crop diversification has been advocated as a panacea for the problems plaguing Indian agriculture. Highlight both the potential benefits and the challenges associated with crop diversification in India. Suggest a pragmatic approach for its successful implementation. (15 marks, 250 words)

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Diversifying crops in 1 hectare can cause income increase of ₹ 1 lakh
(Dalwai Committee)



Potential Benefits

1. For Farmer

- ① Reduce risk of investing & failure of single crop
- ② Cause increased productivity of farmland

legume → Nitrogen

II For consumer

① Ensure balanced diet to reduce stunting (30%) Anaemia (50%)

→ Rainbow diet by IAR

② Diversified & more food choice lead to better health

→ Millets instead of cereals.

Challenges

① Lack awareness about proper intercropping practices

→ cannot plant two water intensive crops together

② High reliance of MSP which doesn't incentivise diversification

→ 35% rice + 25% wheat procured by FCI

③ Lack of knowledge about

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④ Potential risk of both crops
reducing productivity due to
competition.

⑤ Micro nutrient deficiency in
soil can deter multicropping.

Pragmatic approach

① Incentivising high profit
& diversified agriculture with
traditional

eg Horticulture - Gucchi mushroom
with normal cultivation

② Promote non competitive,
complementary diversification.

eg Chazari in Goa - Rice + fish

③ Precision agriculture as per
need of land, find complementary
crops

eg Hydroponics
in traditional models

14. The development of organic farming in India can not only aid sustainable agricultural practices but also give impetus to our Agri-exports. Analyse (15 marks, 250 words)

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India has largest number of organic farmers in world but stand 9th in area of cultivation.

Organic farming

I. Aid sustainable agriculture

① Use of organic manure which doesn't affect soil dynamics

for NPK ratio Silchim 4 : 2 : 1
vs Punjab 32 : 8 : 4

② Natural methods of controlling pests which is sustainable

eg Praying mantis used against Aphids.

③ Doesn't cause soil & water pollution due to chemical usage

for Silchim has lowest level of eutrophied water

~~eg~~ glyphosphate causing cancer
neobride

⑤ ~~Focus on one health~~ —
better life for all

II Agri export

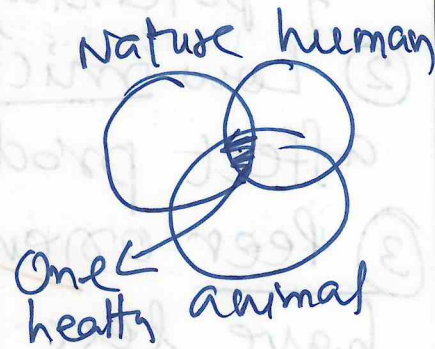
① High demand of organic crops in global market

② Can help abide Sanitary and phytosanitary measures in European market

③ High price realisation lead to export incentivisation for farmer

④ Can promote organic farming tourism which lead to export of service ~~eg~~ Tuscany, Italy organic farm tourism.

⑤ Help achieve the aim of



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Challenges

- ① Lack of awareness among farmers of potential
- ② Low micronutrients in soil can affect productivity
- ③ peer oriented PGS certification have less value in global market
- ④ Can affect food security if completely shifted to Soilankar crisis

Way Forward

- ① FPOs, cooperatives incentivised through land pooled organic farming
- ② Establish Jaiwik Bharath Brand for foreign export
- ③ Organic export promotion body in model of APEDA

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15. Urbanization is playing the dual role of contributor as well as solution to climate change. Discuss. Also, highlight the multidimensional concept of 15-minute cities. (15 marks, 250 words)

30% of India's population live in cities, expected to reach 50% by 2050.

Dual role of Urbanization

I. Contributor to climate change

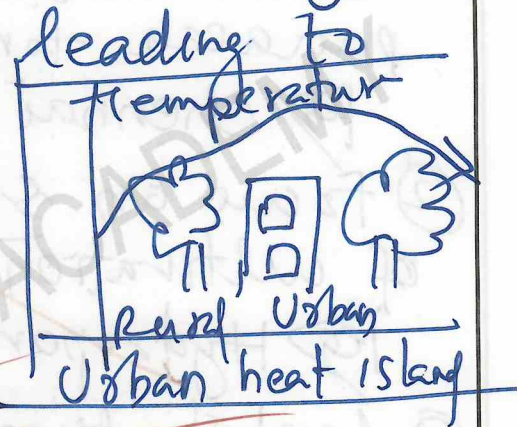
① Urban heat island
green house gas emission

② Lack of proper waste management

(only 20% recycled) lead to warming

(eg) Brahmapuram landfill fire

③ Destruction of natural resources
like deforestation contribute to warming, pond destruction



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~~Ex~~ Airconditioned buildings
⑤ Concretization of ground lead to reduced water percolation & water crisis.

II Solution to climate change

① Technology adoption as a panacea for climate change

~~Ex~~ Chennai Miyawaki forest

② Focus on sustainable modes of cultivation

~~Ex~~ Hydroponics, aquaculture

③ Contribution to climate goals through high yield efforts

~~Ex~~ Sea weed park Ramana Theroor

④ Use of mass public transport reduce aerosol emission

~~Ex~~ EV adoption in cities

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⑥ People aware of climate change and ready to make effort

eg Life adoption - pro planet people

15 minute cities

refers to cities 15 minute away from main city

Positive → reduce traffic jam
→ reduce congestion in main city

Negative → Reduced availability of facilities away
→ Need to establish linkage & transport

Way Forward

Promote companies to adopt
15 minute cities to

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16. Comment on the causes of biodiversity loss in India. How can Environment Impact Assessment (EIA) help in biodiversity conservation? (15 marks, 250 words)

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Environment Impact assessment
focus on ~~reducing~~ impact of a
project on environment-

Causes of Biodiversity loss in
India

- Evil Quartet

① Habitat loss due to fragmentation

~~eg~~ 35% of ~~tiger~~ habitats lost
in last decade

② Invasive alien species affect
natural biodiversity here

~~eg~~ Killer algae leading to
green algae destruction

③ Anthropogenic activities affecting
natural biodiversity

~~eg~~ Norway ~~Hydro~~ mining led

bleaching of corals.

⑤ Coextinction due to coevolution or lack of evolution of one species
eg Moth & caterpillars affected by GM corn

EIA in Biodiversity conservation

① Helps in preventing habitat loss for critical animals.

eg Mumbai highway EIA suggested adding green corridor

② Helps in mitigation for the damages caused

eg Bandipur highway closed in night for animal passage

③ can stall the project if high biodiversity destruction

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hectare corals lost

- (5) Better coordination with local people who have better knowledge of local biodiversity
eg Maldhari to be consulted in Kutch project.

Way forward

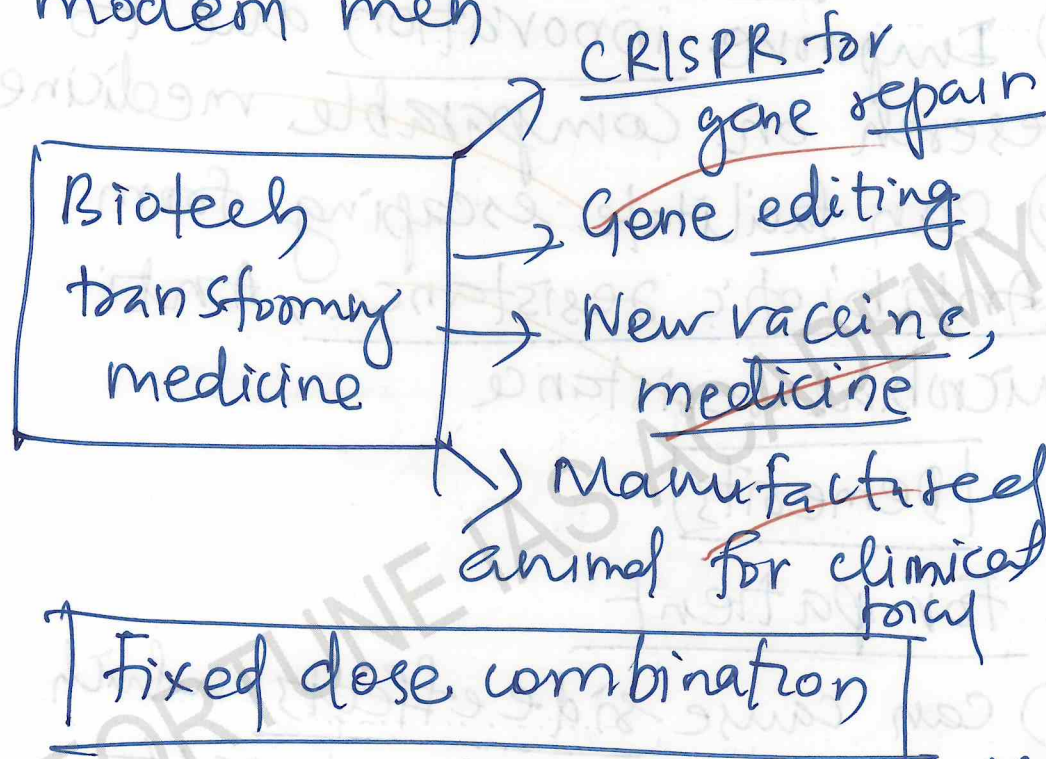
- (1) Stringent EIA provision
to reduce Biodiversity loss
- (2) Opinion of local people and Gramsabha gives priority
- (3) Effort to reduce the impact
suggested along with EIA
eg Compensatory Afforestation
part of Galathea Bay EIA
- (4) Single window for consolidation

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17. Biotechnology is transforming medical field to prepare for the future. In this context, evaluate the merits and demerits of the usage of Fixed Dose Combination (FDC) drugs in therapeutics. (15 marks, 250 words)

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Biotechnology rely on modifying
bioorganisms for benefits of
modern men



they are combination of multiple
medicines for diseases that
cannot be controlled by single
tablets eg Tuberculosis fixed dose

② Can cause diseases which need multiple component medicine not available in single tablet

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II For medical field

① Improve innovation due to research on comparable medicine

② Can facilitate escaping from Antibiotic resistance, Anti microbial resistance

[Demerits]

I For patient

① Can cause side effects which may have long term impact

② Can evolve further diseases due to intermixing of medicine formulation.

innovation

- ② Lack of proper research data on long term effects of multi drug combination.

Way Forward

- ① FDC as a last resort for chronic disease
- ② Prevent over the counter sale of FDC to prevent misuse
→ Red line campaign
- ③ Spent on R&D to reduce the effects of Antimicrobial resistance
- ④ Incentivise FDCs that follow proper trial & foreign authori-
zation for uncurable medicine

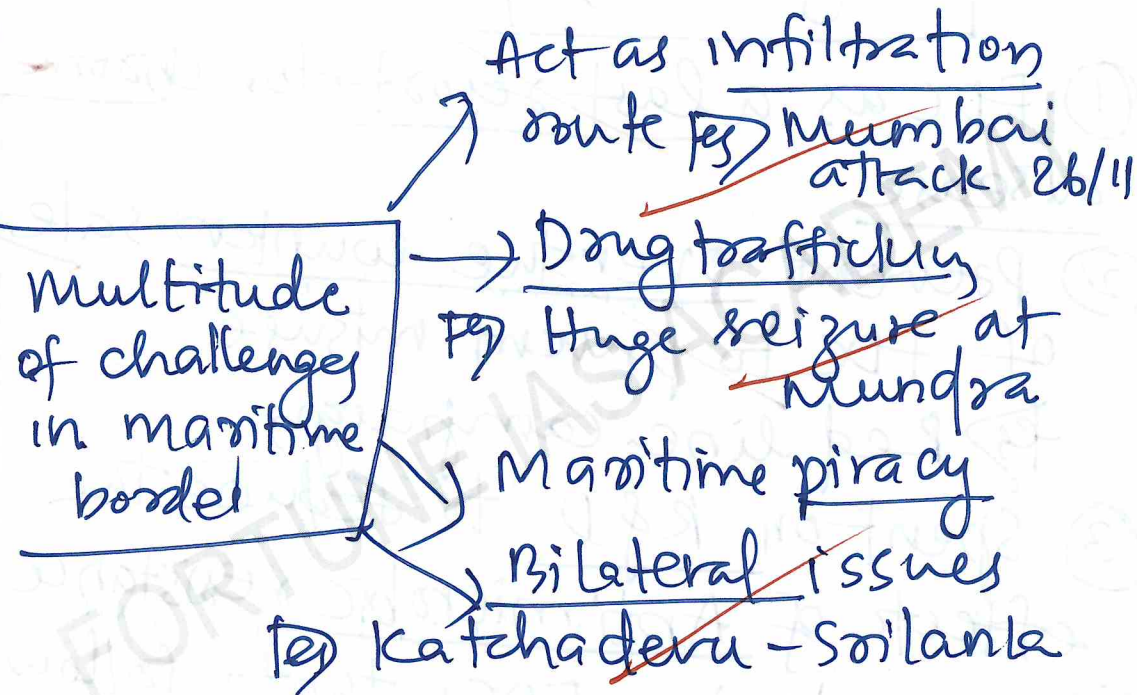
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Written called India

18. India's maritime border is presented with multitude of challenges. In this context, analyze the provisions of Maritime Anti-Piracy Act, 2022 in tackling the piracy related challenges in the region. (15 marks, 250 words)

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Houthi piracy on Red sea has shown us the need of anti piracy measures — especially for India with 7500 km coastline



Maritime Anti piracy Act

provisions

① Model Act as a model

piracy measures

③ If foreign ship, it can be prosecuted in India or transferred to foreign country

④ Zero tolerance to piracy measures in India's maritime boundary

Positives

① Autonomy to maritime security forces in containing piracy

② Increased power for Govt to fine & prosecute even foreign ships

③ Aligned with UNCLOS guideline on anti piracy

④ Can lead to better infrastructure & capability development for

with foreign countries due to intrusion of sovereignty

eg India - Italy shooting case

② Lack of capability of Indian Navy to reach & solve all piracy issues.

③ Lack of dedicated piracy force according to global practice.

④ Can affect India's role in ensuring navigational freedom to neighbours

way forward

① Can start anti piracy dedicated force in MARCOS model of Indian navy.

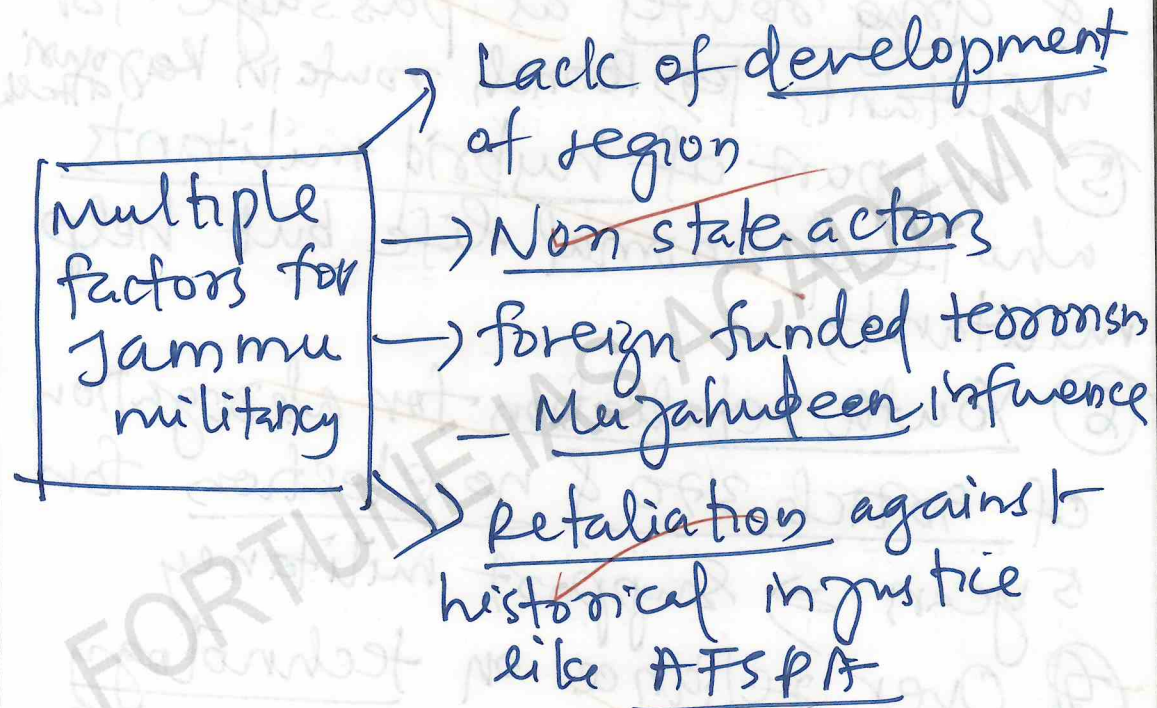
② More allocation to maritime security infrastructure building to ensure complete security

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19. Even though origin of militancy in Jammu and Kashmir can be attributed to multiple factors, recently the "Jammu" region witnessed a disturbing resurgence of militant activities after two decades of relative calm. Discuss. Also, how can the civilian casualties be minimized in the counter-militant operations conducted by the armed forces? (15 marks, 250 words)

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Since June 9 2024, Jammu witnessed 5 attacks which led to death of 8 army men & 10 civilians



Reason for Resurgence in Jammu

① Post Galwan crisis, focus on
... related to India-china

both side



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③ Increased focus of army on Kashmir valley whereas militants focused on Jammu

④ Revival of old militant routes & drug routes as passage for militants ^{to Bunch route in Kashmir}

⑤ Support of hybrid militants who lead normal life but help militants

⑥ Youth retaliation for abrogation of Article 370 & no election for 5 years $\Rightarrow$ support militancy

⑦ Over reliance on technology led intelligence led to lack of human intelligence on ground

Minimising civilian casualties

the civilian infrastructure

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② Training of civilians in counter terrorism operation

eg Ministry of Home to revive village Defense force

③ Increased focus on building health infrastructure in area to give first aid in golden hour itself

eg Operation Sadh bhavana

④ Training military in minimizing on ground conflicts

⑤ Use of technology like UAV, drone etc to prior detection of threat and eliminate

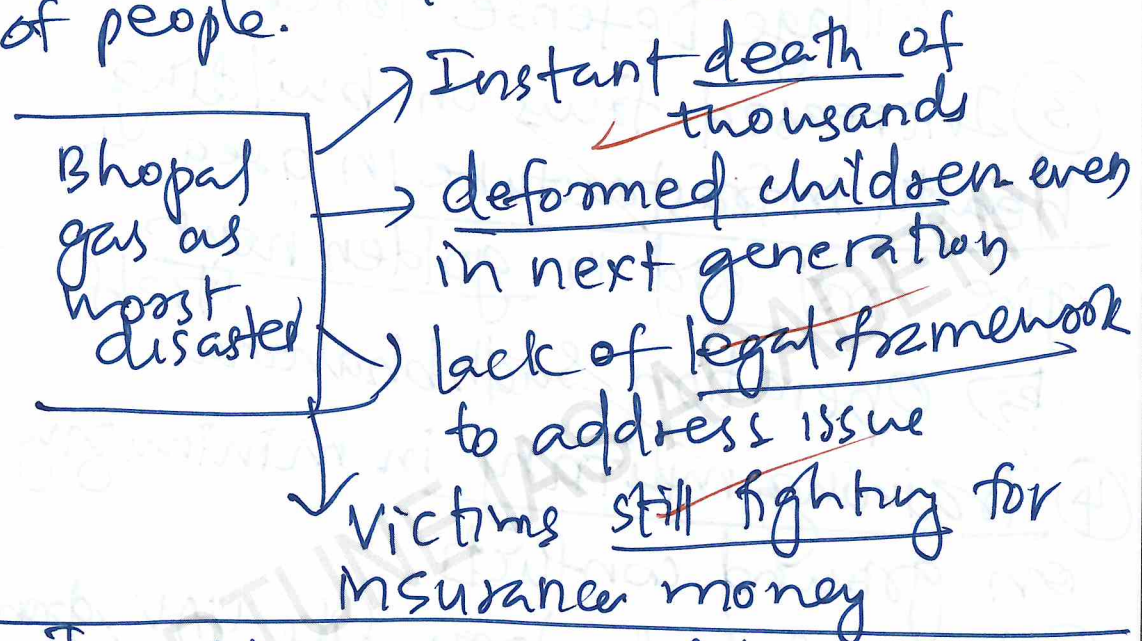
eg china use dog robots in border

⑥ winning heart & mind of people

20. Bhopal gas tragedy was one of the worst disasters in India's history. With reference to this statement, give insights into two chemical hazards that occurred in India and the ways to manage such disasters. (15 marks, 250 words)

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Bhopal gas tragedy by Union Carbide
due to Methyl Isocyanate leak led
to death and casualty of lacs
of people.



Insights of chemical hazards

① Endosulfan leakage in Kerala

① Affected around 2-3 villages
completely

② Innocent victims who lived

that are passing through years.

II Vizag styrene leak

- ① Industrial disaster due to lack of proper safety measures
- ② Lead to further disorders like respiratory illness
- ③ Could have prevented by proper safety inspection of municipality.

Way to manage chemical disasters.

Pre disaster

- ① Proper safety protocol check before industrial approval
- ② Ban on dirty dozen hazardous chemicals by Basel convention

establishment.

→ Nuclear civil liabilities act model.

During disaster

① Scientific measures to reduce leakage & control situation

② Mass evacuation of fixed perimeter around the disaster

Post disaster

① Compensation to victims

② Free medical assistance to affected

③ Monitoring of the area affected by disaster

Stockholm convention guidelines on safe use

Candidates
must not
write on
this margin