

VAJIRAM & RAVI

SURE SHOT TEST SERIES FLT 2024

GENERAL STUDIES

Full Length Test

Test - 3 (GS3 CT)

Time allowed: Three Hours

Maximum Marks: 250

ADMIN. NO.: 1 6 0 0 0 4 7 4

NAME:

MOBILE NO.:

EMAIL.:

SUBMISSION DATE: 20-8-24

UPSC IFS 2024

AIR-1

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions:

There are TWENTY questions printed in ENGLISH. All the questions are compulsory.

The number of marks carried by a question/ part is indicated against it. Word limit in questions, wherever specified, should be adhered to. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

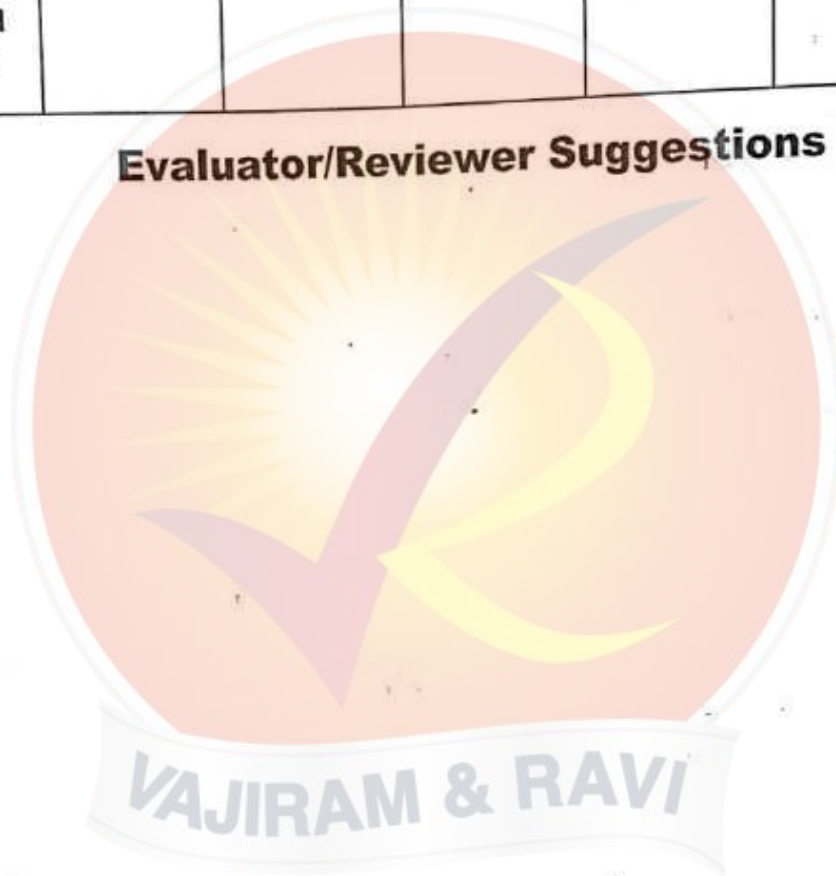
Q No.	Marks	Q No.	Marks	Q No.	Marks
Q1	/10	Q8	/10	Q15	/15
Q2	/10	Q9	/10	Q16	/15
Q3	/10	Q10	/10	Q17	/15
Q4	/10	Q11	/15	Q18	/15
Q5	/10	Q12	/15	Q19	/15
Q6	/10	Q13	/15	Q20	/15
Q7	/10	Q14	/15	Total	/250

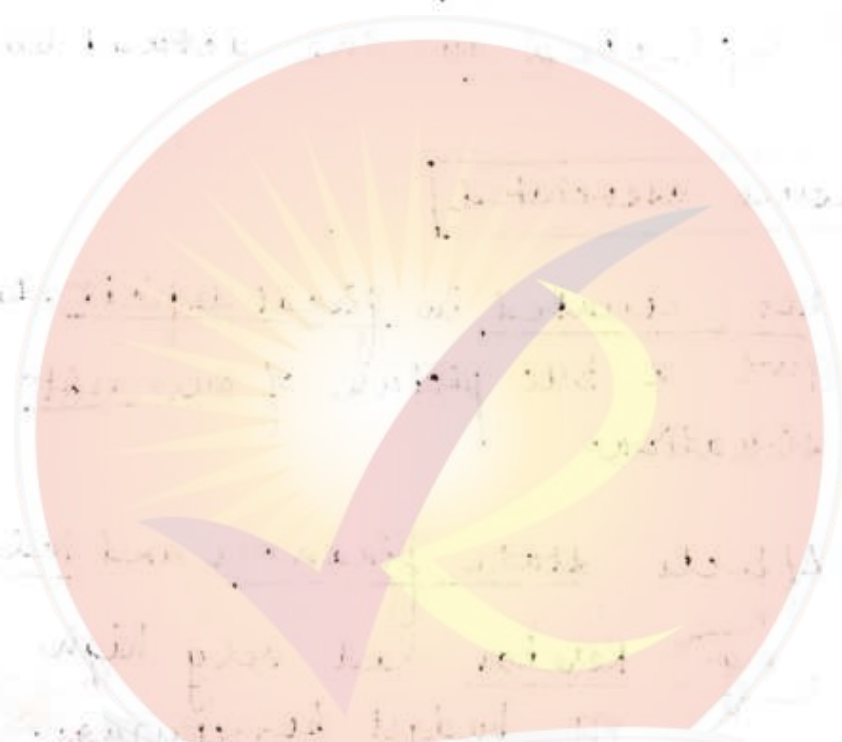
Follow these steps to avail the facility of mentoring –

1. Go through the soft copy of your evaluated answer sheet and analyse all the comments and suggestions given.
2. Call 9717565805 between 11:00 am to 5:00 pm to fix your mentoring slot.
3. Please follow the mentoring appointment timings properly.

Parameters	Excellent	Very Good	Good	Average	Poor	Very Poor
Language and Articulation						
Structure and Presentation						
Conceptual clarity and Content						
Number of Attempted questions						

Evaluator/Reviewer Suggestions





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(Answer questions in NOT MORE than the word limit specified for each in the parenthesis. Content of the answer is more important than its length.)

1. What do you mean by off-budget borrowings? Discuss the various issues associated with them. (10 marks, 150 words)

Off budget borrowings are the ~~to~~ borrowings made by government agencies and which are not reflected in the actual budget.

Issues associated

- ① not counted in fiscal deficit. Don't give a true picture of our debt situation.
- ② Affects state finances and indebtedness
(e.g.) Kerala had very high off budget borrowings.
- ③ Affects the targets of FRBM act i.e. confining to 4% fiscal deficit as they are not included but still create liability.
- ④ Government expenditure higher on repaying the debts → capex reduces

- ⑤ Can affect fiscal relations between Centre and State
- ⑥ Can be considered as 'miskading' the electorate as it is outside legislature scrutiny

WAY FORWARD

- ① Phasing out off budget borrowings.
- ② more transparency measures to ensure agencies / government companies are not made to borrow under it.

The Finance Commissions (14th and 15th) have highlighted this issue and the need to stop this practice of off budget borrowings.

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Introduction	Suggestions:
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Marks:	

2. Do you agree that the agriculture sector in India needs a separate budget for its transformation? Substantiate. (10 marks, 150 words)

The agriculture sector employs more than 45% of the Indian population and thus, a ~~se~~ need to have a separate agriculture budget has come up time and again.

Separate Budget for Agriculture Sector Needs

- ① Contributes to over 17% of India's GDP which can be enhanced further.
- ② Will help increase investments in agriculture (e.g.) in mechanisation which is only 40% now.
- ③ Will help expand the subsectors of horticulture, livestock and fisheries further.
- ④ Will lead to higher focus on R&D in agriculture (e.g.) to develop climate / pest resilient crops.

- ⑤ might lead to overall increase in agricultural investments and FDI too → increasing agricultural exports
- ⑥ Higher focus on emerging agricultural methods like Organic Farming, Zero budget natural farming.

Not Needed

- ① Common budget reduces complexity and confusion (e.g) even Railway budget was merged.
- ② despite common budget, agriculture sector has shown a growth rate of 3-5% consistently (even during pandemic)

Way forward

More than a separate budget, increase in R&D, diverse agroclimatic crop policy and more rural entrepreneurship can help transform agriculture sector to achieve the target of doubling farmer income.

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3. Growth of e-commerce has huge potential in revolutionizing the agriculture products supply chains. Discuss. (10 marks, 150 words)

The e-commerce sector has seen rapid growth in India, touching every possible sector including agriculture.

e-commerce revolutionizing Agriculture Product Supply chain

- ① Hastens the 'soil to Sale' process
(e.g.) Ninjakart enables sales of multiple agriculture products.
- ② Elimination of middlemen → more profit to farmer
(e.g.) De Haat, otipy → Farmers can directly sell to customers.
- ③ Better price discovery mechanism
(e.g.) via eNAM compared to local market.
- ④ Widens sale options and markets
(e.g.) on eNAM → products can be sold across the country.
- ⑤ Promotes food processing industries too

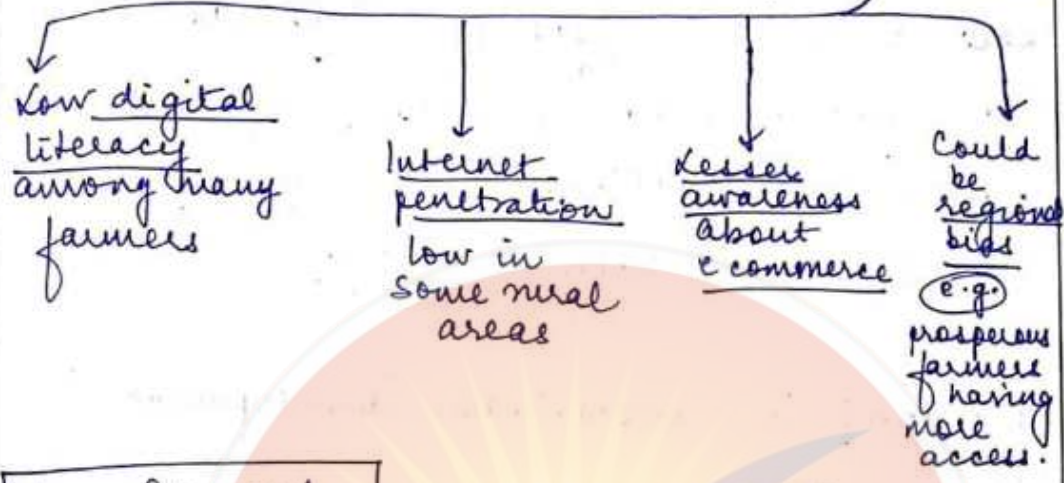
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e.g. Mr. Makhana, Shurp Millet Noodles sold on Amazon

However, there are still a lot of **CHALLENGES**



Way Forward

- ① Training farmers in usage of these portals/apps.
- ② Encouraging more investments in infrastructure based ventures e.g. cold storage, packing houses etc. to further strengthen supply chains
- ③ Ensuring small and marginal farmers get special support in connecting with e-commerce.

ONDC — a UPI like step for e-commerce can further revolutionise and democratise the process.

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4. 'Water use efficiency is the keystone in the sustainable development of the Indian agriculture sector.' Examine. (10 marks, 150 words)

Water use efficiency is the ~~less~~ amount of output / yield obtained for every unit of water applied during irrigation. Water use efficiency in India is only 35-40%.

Keystone in sustainable development of agriculture

- ① Reducing water usage due to higher efficiency
(e.g.) in microirrigation, water use efficiency is around 90% as per PIB.
- ② Reducing input cost → exports more sustainable and profitable for farmers.
- ③ Reducing 'water export' from India
(e.g.) for each kg rice → China uses ~1300 l water while we use 2700 l

④ Reducing fertiliser usage → ↓ cases of runoff into water bodies and eutrophication.

⑤ As excess water not standing in field → reduced infections by fungus/bacteria → ↓ crop damage

⑥ Will reduce groundwater exploitation
(e.g.) In Punjab nearly 76% overexploited units now → This will decrease.

Challenges

① Microirrigation equipment expensive and subject to >10% GST → low adaptability

② Freebies like power subsidies reduce incentive to adapt to more efficient methods.

Following the mantra of 'Per Drop, More Crop' can help usher in sustainable development of agriculture.

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5. Robust economic growth requires a complementation between the public and private investment. Examine the statement with reference to falling private investments in the Indian economy. (10 marks, 150 words)

The recent government emphasis on PPP highlights its importance in robust economic growth.

Complementation between public and private investment

- ① Public investment enables 'crowding in' of private investment
(e.g.) seen in NOIDA, Gurgaon.
- ② Enables risk taking by private players (e.g.) Build Operate Transfer model of infrastructure development
- ③ Brings in expertise and efficiency of the private sector
(e.g.) Ennore Port Trust is built on PPP model
- ④ ~~can~~ can help in sustainable socio economic growth
(e.g.) Special Purpose Vehicles in Smart City Mission

Falling private investment in economy

Reasons

- global slowdown after COVID 19
- global uncertainties like wars → lesser demand
- High inflation rates → low loan availability.
- lower consumption expenditure by Indian households

Stalled projects in infrastructure

Way forward

- ① Trust building and enabling new models of PPP.
- ② National Infrastructure Pipeline can help boost private investment.
This helps in attaining SDG 8 and 9 both

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6. Discuss several ways in which biotechnology can help in ensuring food security in India. (10 marks, 150 words)

Biotechnology is the application of Biology and biological organisms in technology. It has been instrumental in improving agriculture and thus, food security. PM recently inaugurated 109 new crop varieties

Ways in which biotechnology can help address food security —

- ① High yielding varieties → e.g. Jaya, Sonalika for wheat → brought in Green Revolution
- ② Reducing damage / destruction of crops → e.g. Flavr Savr tomatoes stay fresh for longer.
- ③ Increasing resistance to pests e.g. Bt cotton resistant to cotton bollworm
- ④ Better tolerance → e.g. salinity

drought tolerant crops.

5) Increasing nutritional value

(e.g.) Biofortification of ~~crops~~ foodcrops like rice, spinach, pulses.

→ better food security (e.g. adding ^{Iron in} rice will reduce anemia)

6) Improved livestock sector → More food security

(e.g.) vaccines for cattle diseases like dumpy disease

7) Higher yield and better practices in Fishery, Prawn culture etc.

Way Forward

→ Increasing R&D in agri biotech

→ Detailed field studies

to increase acceptance of GM crops.

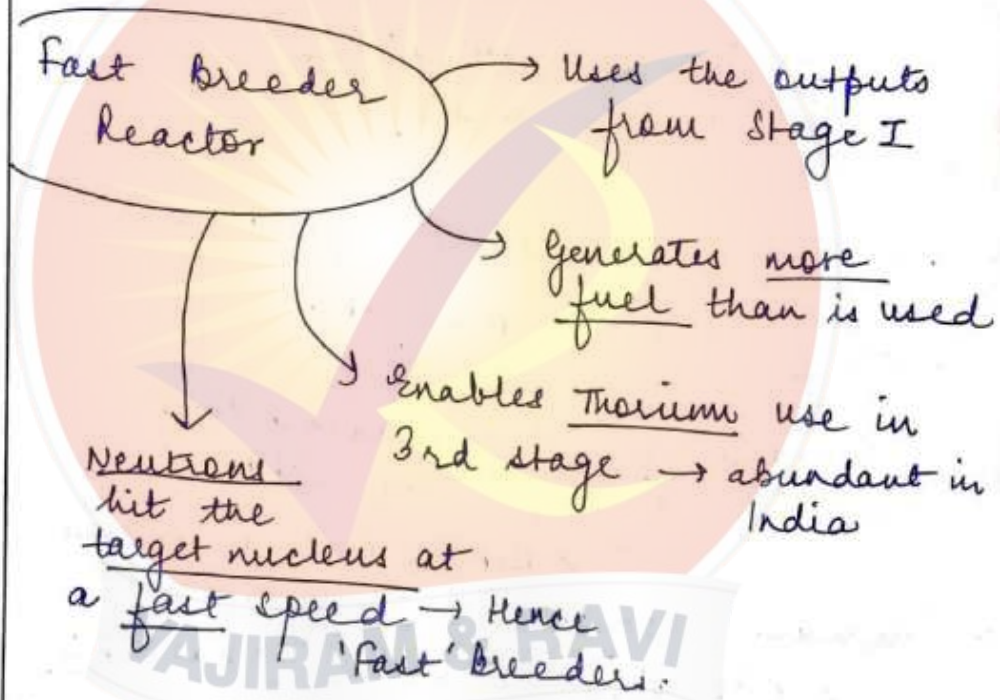
As P M. Vajpayee said, "What IT is for India, Bt is for Bharat" → highlighting importance of biotech.

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7. Explain the significance of the Fast Breeder Reactor (FBR) in achieving the goals of India's Nuclear energy program. (10 marks, 150 words)

The Prime Minister inaugurated the Fast Breeder Reactor of the Kalpakkam power plant earlier this year marking the 2nd stage of India's 3 stage nuclear power programme.



Fast Breeder Reactor in achieving goals of India's nuclear programme

- ① Important step towards 3rd step of the nuclear programme

- ② will eventually enable India to use its ^{abundant} Thorium reserves rather than relying much on Uranium imports
- ③ will help increase nuclear energy (currently only 2% of total energy mix)
- ④ Important in powering India's industrial growth as India's energy demand to increase by >50% by 2047.
- ⑤ Instrumental in achieving our Panchamrit targets too by reducing fossil fuel based renewable energy.
- ⑥ Further, paving way for Small Modular Reactors to generate nuclear energy on a smaller scale.
This is a very important step towards India's goal of Viksit Bharat by 2047.

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Introduction	Suggestions:
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8. Public awareness is primary in inculcating environmental consciousness. How does the Environmental Impact Assessment (EIA) promote environmental awareness? (10 marks, 150 words)

Environment Impact Assessment (EIA) is the assessment and calculation of the environmental and social impact and cost of the project before it is started.

Public awareness inculcating environmental consciousness

- ① Leads to empathetic attitude towards environment (e.g.) chipko movement
- ② Makes people more aware of their rights and environment (e.g.) Aarey forest protests in Mumbai
- ③ Prevents widespread damage to an ecosystem (e.g.) tribals opposing mining in Niyamgiri hills as it is sensitive area (Odisha)
- ④ Wide reaching impact across the country (e.g.) Narmada Bachao Andolan

EIA: promoting environmental awareness

- ① Stakeholders aware of short and long term impacts of a project beforehand.
- ② Most vulnerable groups to be affected under a project can be relocated early.
- ③ If damage expected too extensive → communities can protest against it
- ④ can help in timely steps to prevent excess damage
- ⑤ The facets of project unhealthy for environment can be modified
- ⑥ Local communities can give recommendations about the same.

The very fact that EIA exists indicates that looking at the environmental aspects of a project is as important as project itself. It must also be implemented effectively.

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9. Overexploitation strains the quality as well as the quantity of our groundwater resources. Analyze. (10 marks, 150 words)

With more than 70% ^{over} exploited groundwater units in Punjab and watercrisis in metros like Bangalore and Delhi, our groundwater resources are under strain.

Overexploitation straining quality

- ① Causes mixing of groundwater with heavy metals.
(e.g.) heavy arsenic contamination in Shakhand due to mining
- ② In coastal areas → overexploitation causes intrusion of saltwater → groundwater becomes brackish.
- ③ May also cause leaching of radioactive minerals.
(e.g.) 3 out of 10 wells in Punjab have uranium contamination
- ④ might also cause contamination with bacteria such as E. coli.

Straining quantity

- ① Lowering of groundwater table → lesser availability.
- ② Heavy exploitation in metro cities → Chennai, Delhi faced severe crunch of groundwater last year.
- ③ Reduces per capita availability of water → leads to 'water stress' category as per Falkenmark Index
- ④ Prevents recharge and replenishment of aquifers → further shortage.

However, other factors also contribute to it —

Others Factors

- runoff from agricultural fields having pesticides → affects quality
- low rainfall due to drought, El Nino → affects quantity.
- Water Easement Act 1882 → allows indiscriminate groundwater use by individual

Steps like Atal Bhujal Yojana can help solve the problem through community engagement.

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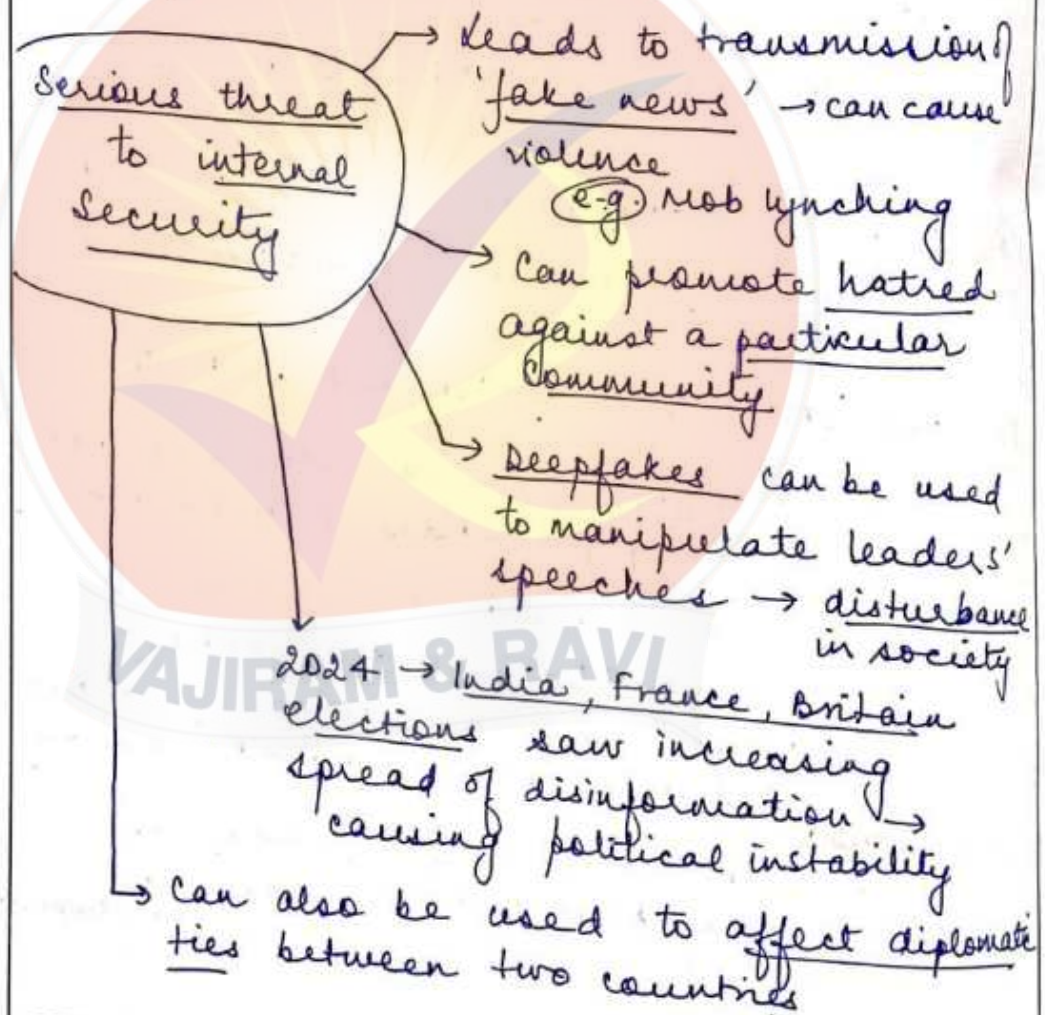
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10. Disinformation has become a serious threat to internal security. In the light of the statement, mention the role of the State in prevention of fake news.

(10 marks, 150 words)

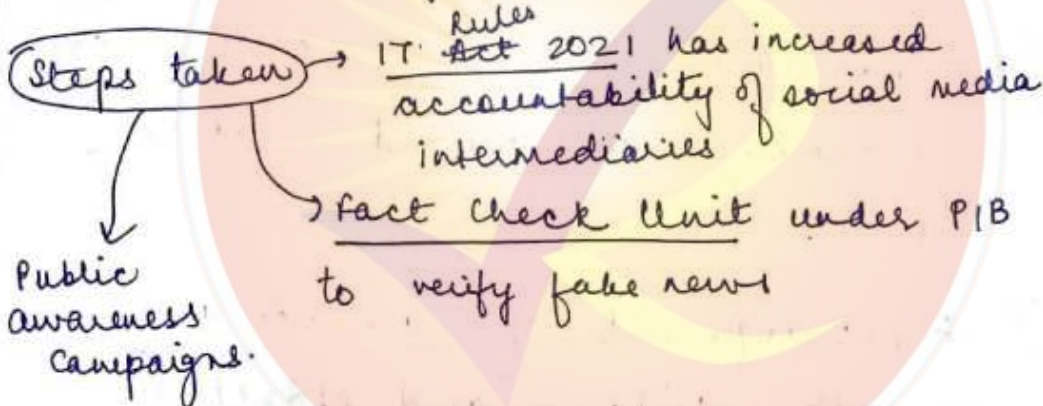
Recent riots in Britain as a murderer was falsely believed to be a Muslim and asylum seeker highlights the threat to internal security from disinformation.



Role of State in preventing fake news

① Quickly source tracing the origin of the fake news

- ② strict action against those found guilty.
- ③ Separate law to deal with its menace.
- ④ enhancing public awareness to alert against fake news and preventing forwarding without verifying.
- ⑤ Sensitising police (e.g) Delhi Police IT cell → verifies fake news
- ⑥ Engaging intermediaries, such as Meta, X to help in increasing their accountability



These will go a long way in getting rid of the 'Information Pandemic' we see today — securing our national integrity

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11. 'Employment opportunities in India are experiencing a rapid transformation.' In the light of the statement, discuss the preparedness of the Indian labor force to adapt to this transformation. (15 marks, 250 words)

NITI Aayog report said that India is going to have 23 million gig workers by 2030 - indicating rapid transformation in employment.

Rapid Transformation in Employment Opportunities in India

- ① Expansion of the gig sector which currently has around 7 million workers
- ② Development of 'care economy' for both children and elderly.
- ③ Rapid development of AI → can replace nearly 78% of repetitive tasks.
- ④ Increasing participation of women in labour force opens up new avenues for employment

- ⑤ 'Work From Home' becoming a common practise → enabling more people to participate in economy.
- ⑥ Focus on manufacturing sector (currently contributes to only 14% of GDP)
 ↳ creation of more jobs in secondary sector

Preparedness of India

- ① labour code reforms to enable and ease the process by merging several laws into 4 laws.
- ② Steps like 'Make in India, Atmanirbhar Bharat' to promote manufacturing in India.
- ③ PLI schemes for upcoming goods like electronics, semiconductors → being a part of 'global supply chain'.
- ④ social security for gig workers skills brought by states like Rajasthan

⑤ India AI mission to harness the potential of AI.

However, preparedness is still inadequate

① Only 5% of our workforce is skilled (Economic Survey '24)

② Lack of proper social security measures for unorganised workers

③ Low ranking in ease of doing business

Way forward

① ~~8~~ Skill development through Kaushal Vikas Yojana etc.

② Facilitating easy land acquisition, arbitration to increase ease of doing business.

These steps can fulfill the goal of Viksit Bharat @ 2047

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Introduction	Suggestions:
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12. Liberalized Indian economy expanded rapidly at the cost of social equity. Elaborate. Also, suggest measures for promoting inclusive economic growth.

(15 marks, 250 words)

Oxfam India report of 2023 revealed that ^{top} 10% of our population holds 72% of our wealth. This highlights disruption of social equity post liberalisation.

Liberalised India expanding at the cost of social equity

- ① India is 5th largest economy of world but 15% of population still multidimensionally poor.
- ② Every 5 out of 6 multidimensionally poor person is SC or ST → loss of social equity
- ③ Top 10% population has 8 times the wealth of the rest.
- ④ Women participation in economy still at 35%. (PLFS - 2023)
- ⑤ Most offices have less than 1% employees

belonging to PwBD category.

⑥ ~~Minorities~~ Minorities continue to be one of the poorest groups even as we move towards a 5 trillion \$ economy.

⑦ Nearly 35% children malnourished even as we are one of the leading agricultural producers (NFHS - 19).

Measures to promote inclusive growth

① Experimenting with universal basic income → found to be useful in a study by Esther Duflo in India.

② Expanding manufacturing sector and MSMEs to generate jobs and reduce labour force in agriculture.

③ Upskilling of workforce and vocational education at school.

④ Investing more in Research and Development (only 0.7% of GDP compared to 2% in USA)

5) Digitising and enabling transparency in schemes such as PDS, MDM, POSHAN etc to ensure nutrition.

6) Special focus on weaker areas e.g. through Aspirational District Programme, Border Area development programme etc.

7) Enabling social justice for minorities, PwBDs and LGBT community through affirmative actions.

These steps will enable the vision of 'Sarva daya' and take us towards SDG-1 - NO poverty.

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13. Livestocks play a key role in improving the socio-economic conditions of the rural masses. In this light, discuss the potential opportunities for the livestock farmers in India. (15 marks, 250 words)

India has the world's largest livestock population and it contributes to 25-30% of the agricultural GDP while improving conditions of masses.

Improving socioeconomic conditions

- ① Additional source of income during uncertainty of monsoon, heatwaves etc.
- ② Involvement of farmers in cooperatives for milk supply (e.g.) in Anand → decent profits for farmers
- ③ Prospects of exports of meat, eggs etc. → better income.
- ④ Promotes circular and integrated farming → animal waste can be used as fertilisers → reduces expenditure of farmers.
- ⑤ Better income prevents reliance of on informal moneylenders → out of vicious debt trap

Potential opportunities for livestock farmers in India

- ① Dairy Industry: Despite being largest milk producer, we lag behind in exports → can be tapped.
- ② Meat Industry: Broiler sector growing at a rate of 8% in India annually. Can help in 'pink revolution'
- ③ Fisheries and aquaculture: both inland as well as coastal. Newer areas like seaweed cultivation being done in Tamil Nadu can be expanded. (by women SHGs)
- ④ Sheep rearing - As India has significant market for woolen products, → can be done especially in northern states like Himachal, Uttarakhand.
- ⑤ Best from waste - livestock waste can be source of biogas energy → can be sold by farmers for income.

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Challenges for farmers

- ① Low productivity of Indian breeds compared to foreign ones like Jersey cow
- ② Diseases higher in tropical countries like India e.g. Lumpy skin disease
- ③ Lack of technology to harness animal products effectively.
- ④ Rise in price of animal feed → > 23%
deficit in dry fodder availability
→ leads to price rise.

Steps taken

- Rashtriya Gokul Mission
- National Livestock Mission

Way forward

- Improving veterinary services and livestock vaccination
- Promoting and improving indigenous breeds like Rangpur Cow
- Training of farmers in allied activities.

Above activities along with 'One Health' Approach can help increase opportunities for livestock farmers.

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14. What are the objectives of the Production Linked Incentive (PLI) scheme? Analyze its role in the growth of indigenous semiconductor industry.

(15 marks, 250 words)

The PLI scheme was announced to promote the manufacturing sector in India by promoting 14 different sectors.

Objectives of PLI scheme

- ① Promoting 'Make in India' by incentivising producers based on sales
- ② Reducing merchandise imports and promoting exports
- ③ Reducing current account deficit by reducing imports.
- ④ Impetus to MSME sector which currently contributes to around 40% of GDP.
- ⑤ Targeted investment and expansion of most valuable sectors. such as semiconductors, pharmaceuticals, white goods etc.

Case Study: India has 25th rank in smartphone manufacturing in 2014 → increased to 6th in 2022 due to PLI

Role in growth of indigenous semiconductor industry

- ① ₹ 76000 crore incentive given to semiconductor industry
- ② Development of fabrication units in India (e.g.) in Assam and Gujarat
- ③ Promoting chip design in India
→ currently more than 70% confined to Taiwan, China etc.
- ④ Will help promote electronic interfaces for e vehicles, IoT devices etc
→ technological development in India
- ⑤ Will help India become a part of global semiconductor supply chain as companies moving away from China

Business Challenges

- ① > 80% of funds allotted to semiconductor under PLI still misused
- ② Withdrawal of investment by companies like Foxconn - Vedanta
- ③ High costs involved in setting up plants initially
- ④ Lack of enough skilled manpower for a task as technical as this

With increasing use of AI, the demand for semiconductor chips is yet to increase. Technology transfer from developed countries like Taiwan, Japan, skilling of manpower and efficient fund utilisation can make PLI more effective.

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15. Delays in infrastructure projects create massive cost overruns. Elaborate the major causes of delays and potential solutions for timely project execution.

(15 marks, 250 words)

Infrastructure projects have a long gestation period and are often subjected to inordinate delays leading to cost overruns.

Major causes for delay

- ① Land acquisition - often time-taking process and includes conflicts due to social or environmental grounds
- ② Paucity of funds - as infrastructure projects require huge investments. e.g. bullet train project in Gujarat
- ③ Lesser involvement of private sector due to higher risks → low project efficiency
- ④ Lack of political will → especially in case of change of government → project stalled.
- ⑤ Environmentally sensitive areas (e.g.) Silverline project → delayed because of Kerala's

concerns on ecological impact.

⑥ Regulatory cholesterol - Single window clearances still not very common → multi step clearance takes time.

⑦ Poor Quality built in first time → needs reconstruction (e.g. Bihar bridge built 3 times due to collapses.

⑧ Lack of coordination between ministries → one destroys the work by other (e.g. breaking road to lay pipelines)

Causing cost overruns

→ Logistics cost remains high (13-14%)

→ No / Very less return despite huge investment

→ Higher fuel usage in longer routes → more costs

→ crowding out of private investments

Potential Solutions

① Streamlining land acquisition by adequate compensations and getting necessary EIA done.

② Single window clearances for most projects

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- ③ Steps like National Infrastructure Pipeline will ensure enough funds for such projects (111 lakh crore ₹)
- ④ Using different modes of PPP for projects (eg. Build-Operate-Transfer model, Hybrid annuity model etc.)
- ⑤ Ensuring high quality construction in first go → transparent tendering process.
- ⑥ Use of sustainable construction materials as far as possible (eg. cold mix asphalt technology) to lower carbon footprint.

Furthermore, steps like Gati Shakti will help in paving up the process of infrastructure development and leading us into 'Amrit Kaal'

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Suggestions:

16. The Indian Space sector exhibits huge growth potential. Analyze the opportunities for the private sector in the Indian space industry.
(15 marks, 250 words)

The Indian Space Sector is rapidly growing and has 2% share of the global space economy. With recent SSLV testing successfully, this will further increase.

Huge growth potential of the sector

- ① Projects like Chandrayaan 3, Aditya L1 have demonstrated prowess of the sector
- ② ISRO specialises in low cost space projects.
(e.g.) Chandrayaan budget \rightarrow 75 million \$
compared to 'Interstellar' movie \rightarrow 200 million \$
- ③ SSLVs can enable launch of smaller satellites in space at low cost.
- ④ Growing applications of Remote Sensing, Satellite based Internet services \rightarrow will require growth of space sector.
- ⑤ 'Space Tourism' emerging sector (e.g.)

Blue Origin spacecraft by Jeff Bezos in USA.

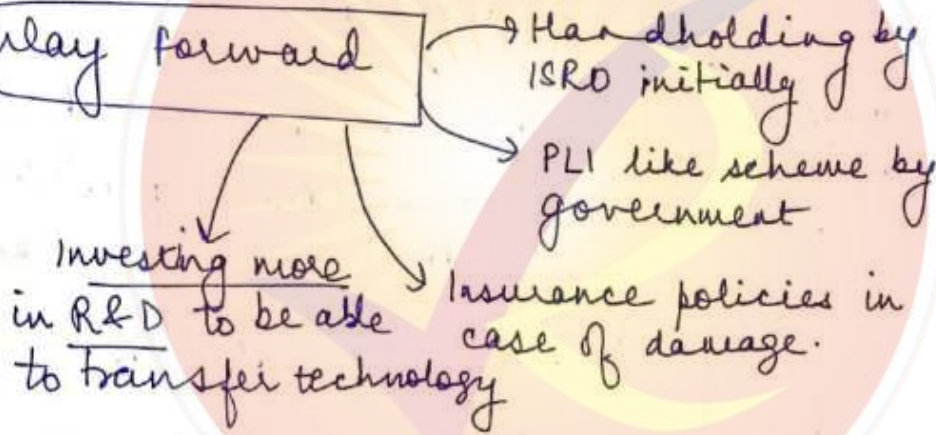
Opportunities for Private Sector

- ① Production of commercial scale → after technology transfer from ISRO.
- ② Innovation in the sector → (e.g.) company Agnikul made India's 1st 3D printed rocket
- ③ UAVs → Expanding applications of drones in all sectors can be tapped by ~~ISRO~~ Private sector
(e.g.) Drones for Remote Sensing in Agriculture
- ④ Launching of satellites for commercial operations can be done by private sector.
- ⑤ Space tourism industry can be expanded by the sector.
- ⑥ Catering to the demand launches from foreign countries (e.g.) Antrix launched Singapore's satellites

Challenges

- ① Huge investment requirements → private sector reluctant
- ② Low coverage in case of launch failures uncertain
- ③ Lack of skilled manpower to manufacture components

Way forward



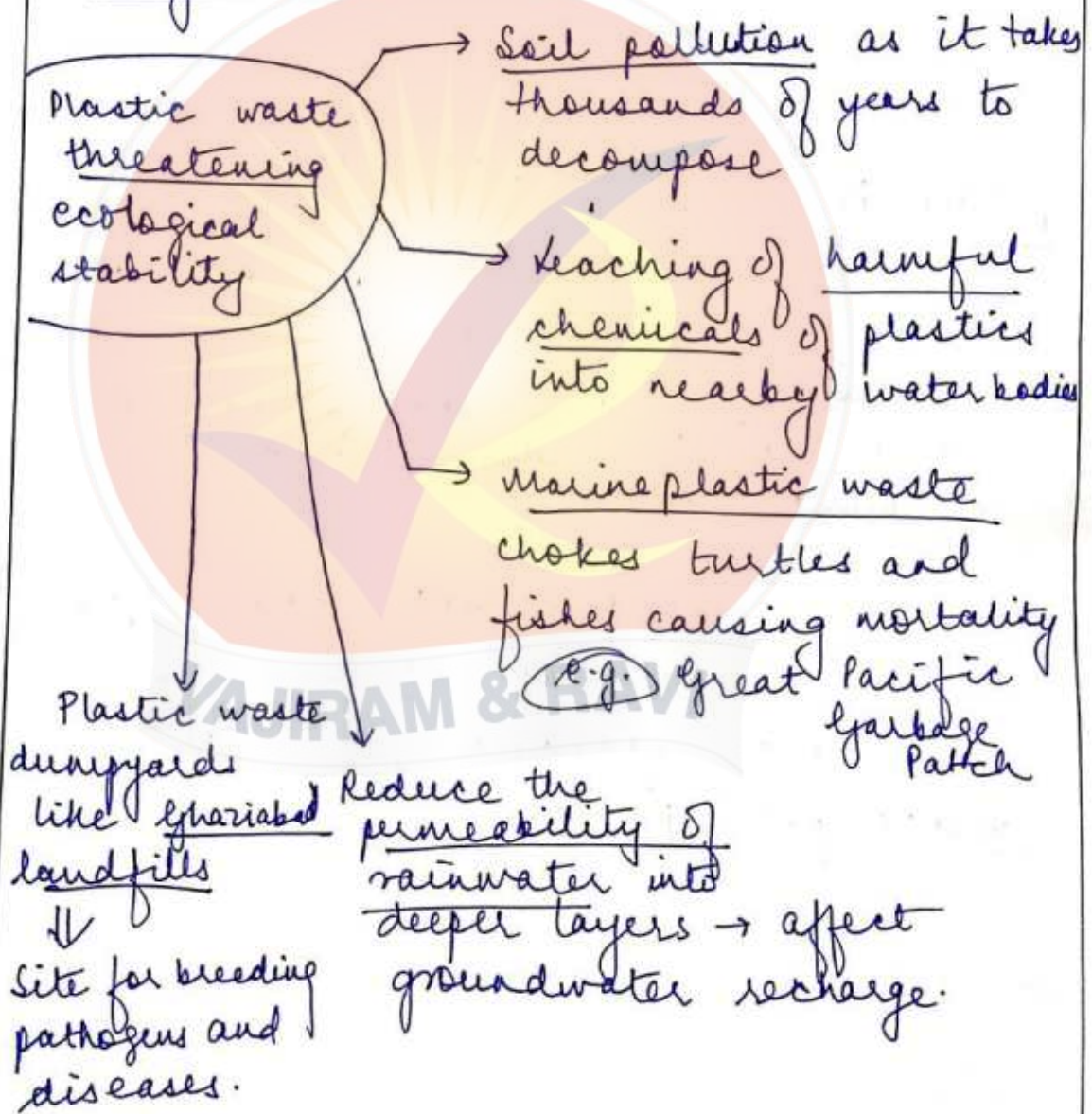
From a current share of 2%, India can reach upto 10% share in global space economy with private sector participation.

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17. Plastic waste has become near ubiquitous, threatening ecological stability. Explain. Also, discuss various measures taken by the government to contain further environmental degradation by plastic wastes. (15 marks, 250 words)

The earth reached its plastic overshoot day in 2023 on July 28 meaning that any plastic waste generated after that in that year couldn't be recycled.



Measures Taken by government

- ① Plastic Waste Management Rules, 2016
 - Ⓐ Has concept of extended producer responsibility for Producers, Importers, Organisers etc. (PIBOs)
 - Ⓑ Enables waste collection in societies and events and segregation at site
- ② Banning use of Single Use Plastics in 2022 as they have low recycle value and cause most waste
- ③ Waste to Energy Plants enable harnessing of wastes to generate energy.
- ④ Lifestyle Changes (e.g.) by Mission LIFE to encourage sustainable consumer choices.

Way forward

- ① Increasing R & D to find better alternatives to plastic

(Don't write anything in this part)

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② Experimenting with techniques like Phyto / Bioremediation to digest plastic waste.

③ Use of plastic in constructive activities like road building as done in Bangalore.

These steps are imperative in our stride to fulfill our commitments under UNFCCC, Stockholm Convention etc.

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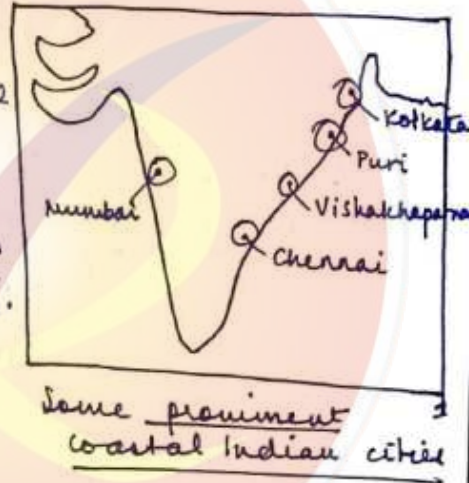
18. Elaborate the disaster vulnerability of Indian coastal cities with examples. Examine the relevance of Sendai Framework in disaster management of coastal regions.
(15 marks, 250 words)

Recent upsurge in the number of cyclones has highlighted the disaster vulnerability of Indian coastal cities.

(e.g.) Cyclone Biparjoy.

Disaster Vulnerability of Indian coastal cities

① Rising sea surface temperatures → more intense cyclones → destruction of coasts.
e.g. Odisha Super Cyclone 1999.



② Rising sea level due to climate change → cities like Mumbai in threat of submergence

③ Coastal erosion due to heavy mining, exploitation

④ Intrusion of sea water in groundwater → water stress and crisis

⑤ Urban Floods due to heavy rains
(e.g.) in Chennai 2015

Relevance of Sendai Framework in disaster management

- | | |
|-----------------------------------|---|
| ① <u>Disaster Risk Assessment</u> | Can help develop accurate <u>Early Warning Systems</u> and assessing <u>vulnerability</u> of different cities. |
| ② <u>Disaster Risk Governance</u> | Enabling <u>regional and local level disaster management strategies</u> for quicker response. |
| ③ <u>Disaster Risk Reduction</u> | By <u>timely evacuation</u> of coastal communities, rehab measures. |
| ④ <u>Disaster Risk Prevention</u> | By building disaster <u>resilient infrastructure</u> , EIA assessments on time, action against illegal sand mining etc. |

Way forward

- ① Enabling a Disaster Management Plan of Urban local bodies and helping them with expertise and resources.
- ② Enhancing green spaces and wetlands/lakes to increase buffering capacity of cities.
- ③ Adhering to Coastal Zone Regulation (CZR) guidelines → preventing inhabitation in vulnerable areas.
- ④ Best practices to develop accurate early warning systems.

Rising climate crisis calls for a renewed and special focus on coastal cities and communities.

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19. Alarming rising trend in cyber attacks endangers national security. Explain with examples. Elaborate the need for establishing a dedicated cyber security force to deal with the issue. (15 marks, 250 words)

During the G20 meeting in India last year the G20 website was attacked at an alarming rate of 16 lakh times per minute — showing a rising trend in cyber attacks.

Cyber attacks endangering national security

- ① Threatening critical infrastructure
(e.g.) ransomware attack of AIRMS in 2023.
- ② Loss of important user data → can be misused
(e.g.) BSNL cyberattack 2023 → stole data of thousands of users
- ③ Can lead to espionage or compromise integrity of vulnerable organisations like DRDO or ISRO

- ④ Can lead to loss of privacy of citizens (e.g.) Aadhar data breach.
- ⑤ Disrupting energy or communication networks if attack on power plants.
- ⑥ Cyberattacks could also potentially lead to cyberwarfare between two countries → culminating in physical war.

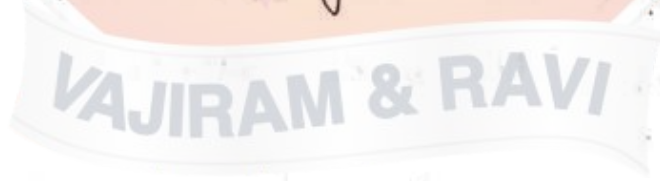
Need to establish cyber security force

- ① Dedicated focus on dealing with cybersecurity issues only.
- ② will have the necessary expertise to deal with such attacks.
- ③ Can also help find any zero day vulnerabilities in our systems.
- ④ separate budgeting and manpower allocation for such force will ensure adequate resources at disposal.

However, there are Challenges

- ① Lack of enough manforce skilled enough for the job.
- ② Large scale hiring can further compromise integrity of cybersystems.
- ③ Only a strong cyberdefence system can be defended by such force → need to build it first.

Steps like the IAC, Cyber Swacchta Kendras, NCCC have been appreciable steps but this needs further attention to prevent the cyberattacks from escalating into a 'Cyber Pearl Harbor'

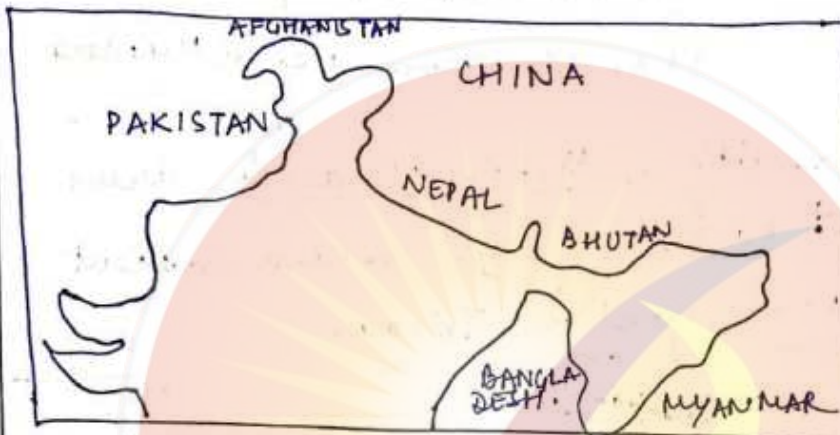


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20. Socio-economic functions across the Indian border makes its management more complex. Discuss with suitable examples. (15 marks, 250 words)

India shares a 15000 long border with countries on land and a 7500 km coastal border along Indian ocean.



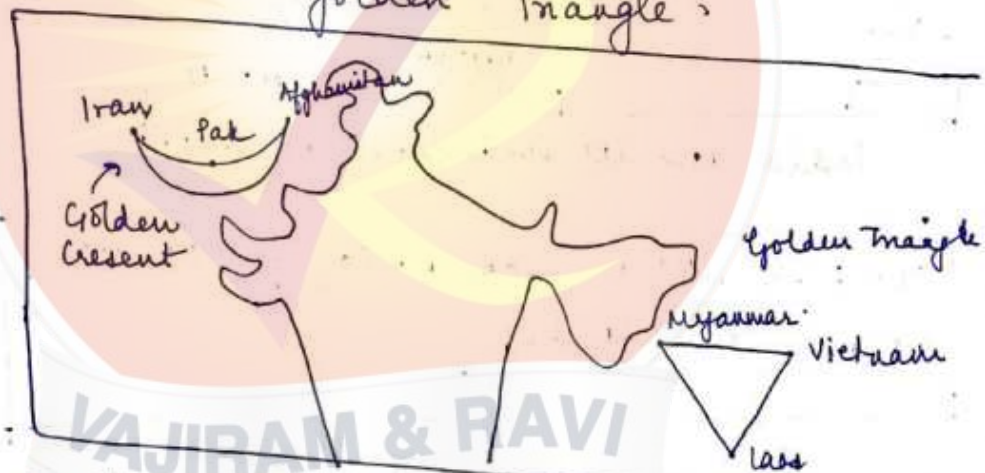
India and its bordering countries.

Complex Socio Economic functions across the border

- ① Poor infrastructure development along border
(e.g.) North East (except Assam) had only around 50% of rail lines of Thane.
- ② difficult terrain along border areas make livelihood difficult.

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- ③ Unstable nature of economies in many of these areas.
- ④ Sharing of ethnocultural ties with people across the border
e.g. in Mizoram, Manipur → Kuki Zo tribes also in Myanmar
- ⑤ Proximity of these areas to drug ~~trading~~ havens e.g. Golden Crescent and Golden Triangle.



- ⑥ Political Instability and extremism across the border → e.g. Coup in Myanmar and Bangladesh, HWTI-B in Bangladesh → threat to internal security
- ⑦ Refugee immigration across border as in case of Rohingyas → internal instability and demography change

WAY FORWARD

- ① Smart fencing across Indian borders
- ② Deployment of more forces especially along North East and Kashmir border.
- ③ Development programmes like Vibrant Village Programme, Operation Sadbharna.
- ④ Infrastructure development e.g. as being done by Sela Tunnel, Atal Tunnel

The recent terrorist attacks in Jammu have highlighted that we can't take our borders lightly.

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