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GENERAL STUDIES (TEST CODE : 3607)

Name of Candidate	ADITYA NARAYAN.H		
Medium Eng./Hindi	ENG	Registration Number	315413
Center	ONLINE	Date	29-06-'25

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH**.
इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी में छपे हैं।
3. **All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. 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 medium other than the authorized one.
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended

Strongly Recommended

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp. Punjab & SIND Bank), Dr. Mukherjee Nagar, Delhi- 110009

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1.

भारत में स्वास्थ्य सेवा पर आउट-ऑफ-पॉकेट व्यय में गिरावट क्यों हुई है? सार्वजनिक स्वास्थ्य सेवा व्यय में वृद्धि के निहितार्थों पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Why has there been a decline in Out-of-Pocket Expenditure on healthcare in India? Discuss the implications of increased public healthcare spending. (Answer in 150 words)

10

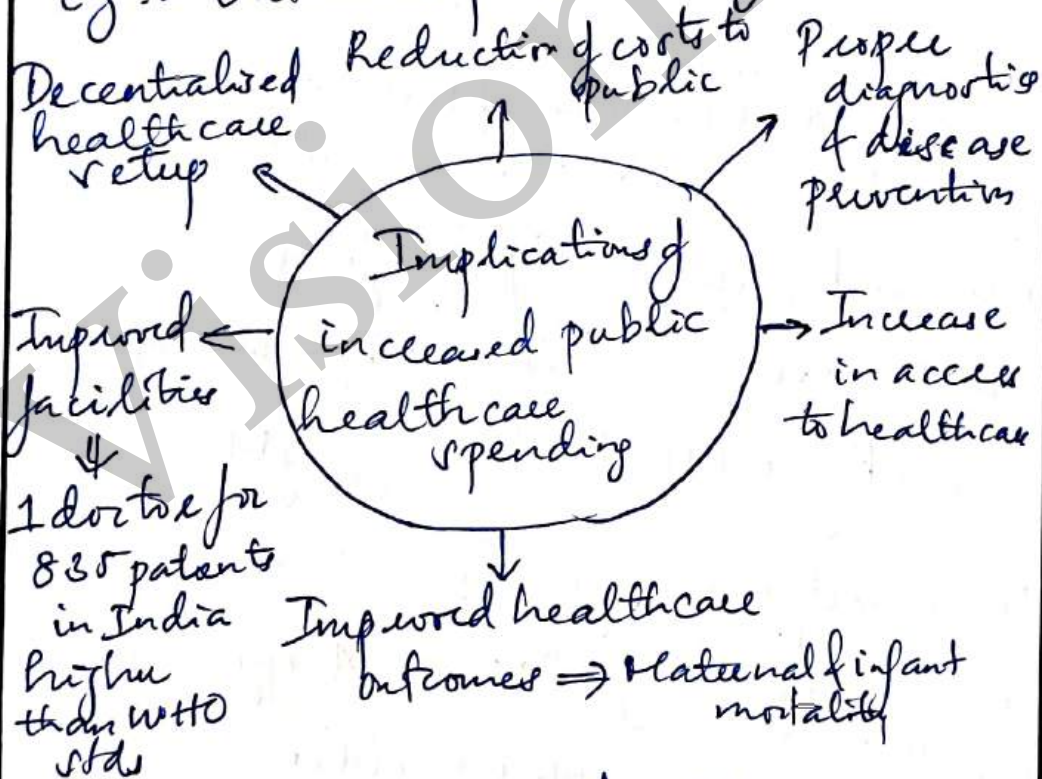
The out of pocket expenditure refers to the amount of money spend by individuals out of their own finances for healthcare. It has decreased from 60% in 2014-15 to 39% in 2022-23.

Reasons for decline of Out of Pocket expenditure

- ① Increased government spending on health care - Gross health expenditure increased for 1.18 to 1.86% of GDP
- ② Increased insurance penetration among people. Eg: PM Jan Arogya Yojana - now extended to older citizens.
- ③ Increasing availability and access to

public health care due to improvement in facilities. (Eg): Increase in number of AIIMS hospital from 1 in Delhi to more than 15 now

④ Increased performance in health indicators like wasting, stunting and LMR/IMR improving overall health
Eg:- Outcomes published by NFHS-5



Hence increased public healthcare spending along with private participation will help create a 'Swasthya Bharat'

2.

भारत के लिए संघारणीय आर्थिक संवृद्धि हासिल करने और वैश्विक विनिर्माण केंद्र के रूप में उभरने हेतु एक नई विनिर्माण नीति क्यों आवश्यक है? (उत्तर 150 शब्दों में दीजिए)

Why is a new manufacturing policy essential for India to achieve sustained economic growth and emerge as a global manufacturing hub? (Answer in 150 words)

10

The contribution of the manufacturing sector to India's GVA is around 15% according to Economic Survey 2023-24. A new manufacturing policy is needed.

Necessity of a new manufacturing policy

- ① For replacing the current obsolete manufacturing policy of 2011.
- ② Focusing on newer trends in manufacturing with the coming up of 4th Industrial revolution.
- ③ Accommodating various schemes and targets set by the government into a long term outcome. Eg:- Incorporating targets of PLI scheme and skilling initiatives of the government.

- ④ Countering jobless growth and shifting focus from capital intensive to labor intensive sectors
- ⑤ Priority to be given for sunrise and emerging sectors like food processing and biomanufacturing.
- ⑥ Easing business environment to attract global value chains to India.

Features of new manufacturing policy

- ① Touching 25% of GVA contribution by 2030.
- ② Shifting 50% of workforce away from primary sector to manufacturing by 2030.
- ③ Specific umbrella guidelines or model laws for states for ease of doing business.
- ④ Sunrise and emerging sectors policy to make India the first mover.

Hence a new manufacturing policy is a necessity to make India a \$5 trillion economy by 2027

भारत में राजकोषीय घाटे के निरंतर बने रहने के लिए कौन-से कारण उत्तरदायी हैं? क्या आपको लगता है कि भारत जैसे विकासशील देशों के लिए राजकोषीय घाटे के साथ परिचालन करना लाभकारी है? (उत्तर 150 शब्दों में दीजिए)

What are the reasons behind the consistent fiscal deficit in India? Do you think there are advantages in operating with a fiscal deficit for developing countries like India? (Answer in 150 words)

10

India has maintained a fiscal budget since a long time. However the deficits have progressively declined with current target of 4.4% in FY26.

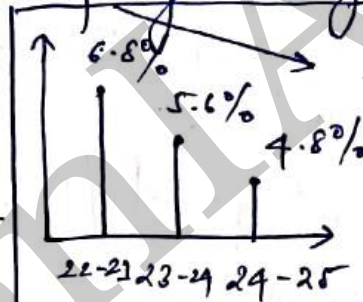


FIG: Fiscal deficit over the years

Reasons behind consistent fiscal deficit

- ① Welfarism: Focussing on social sector spending to pull a vast majority of people out of poverty.
Eg: Spending on Right to education & MGNREGA
- ② Improper tax/revenue collections due to tax evasion and lack of effective implementation of tax laws.
- ③ Economic slowdowns further decreasing

revenue collection due to reduced economic activity. Eg: Projected GDP figure of 6.4% in FY25 compared to above 8% in FY24.

④ Increased spending as economic stimulus due to slowdown. Eg: Deficit rose to 9.2% during 2020-21 due to COVID

Advantages of fiscal deficit in emerging nations:-

- ① Equitable distribution of resources, meeting welfare goals. Eg: Tax money used to fund Poshan Abhiyan
- ② Economic stimulus capability in case of economic downturn. Eg: Success of Atmanirbhar Abhiyan package in rejuvenating economy.
- ③ Economic & social democracy ensured by giving elected government more voice in policy targeting.

Hence fiscal deficit with its pros must be dealt responsibly according to NK Singh committee

भारतीय राज्यों की वर्तमान वित्तीय स्थिति क्या है? राज्यों की वित्तीय स्थिति को मजबूत बनाने के लिए कौन-से दीर्घकालिक उपाय अपनाए जा सकते हैं? (उत्तर 150 शब्दों में दीजिए)

What is the current state of finances in the Indian states? What long-term measures can be taken to strengthen the financial health of states? (Answer in 150 words)

10

According to the fiscal health Index published by NITI Aayog there is a considerable increase in indebtedness among Indian states.

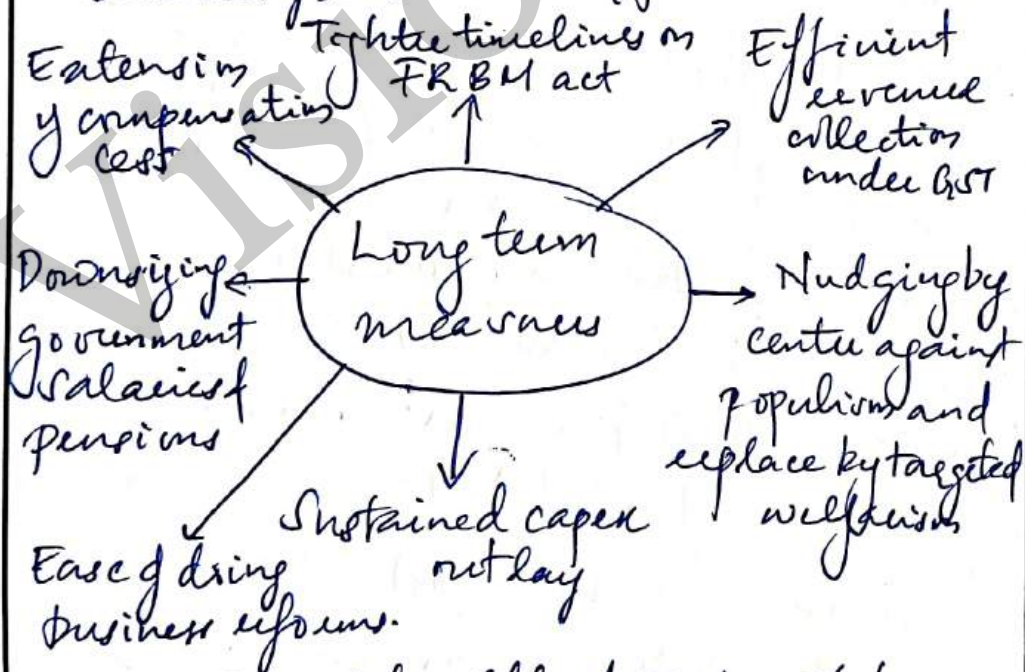
Current state of finances in Indian states

a) Positives

- ① Improved capital expenditure in states due to 50 year loans extended by centre
- ② Improved business environment in states like Madhya Pradesh and Uttar Pradesh improving revenue.
- ③ Fiscal responsibility and budget management targets (FRBM) act as benchmarks for fiscal spending.
- ④ Better welfare outcomes and economic output in states like Haryana, M.P & Jharkhand.

d) Negatives

- ① Increased spending on populist measures impacting fiscal health. Eg: Free bus rides for women in Karnataka
- ② Indebtedness on the rise in states like Punjab and Kerala.
- ③ Loss of revenue especially post the GST regime
- ④ Increasing revenue expenditure burden for salaries & pension.

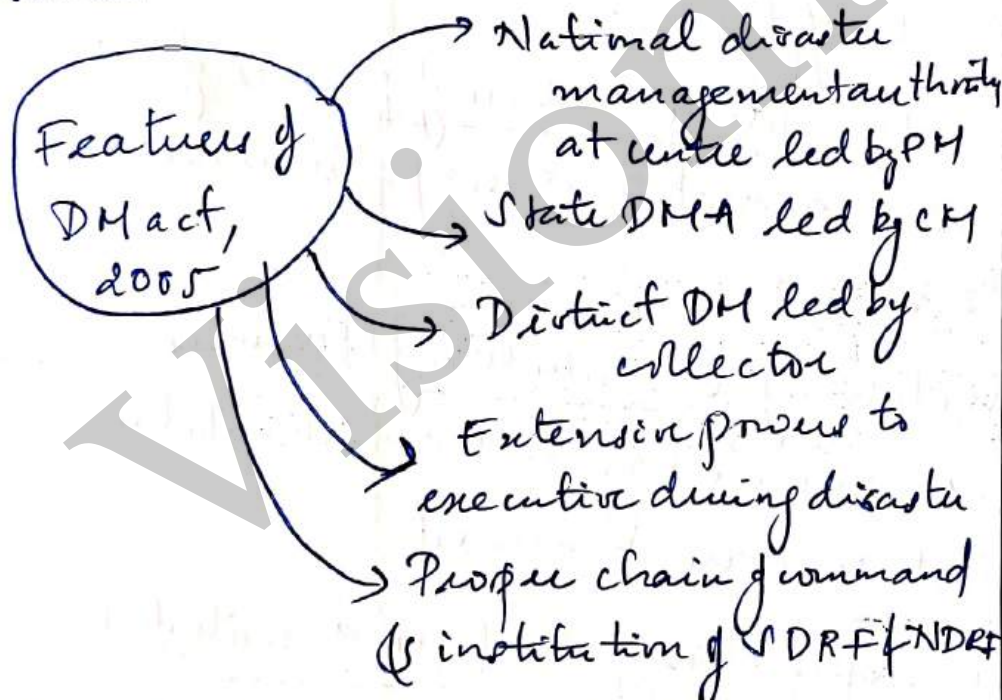


Hence fiscal health of Indian states need to be improved as per guidelines of NITI Aayog strategy paper

भारत में आपदा प्रबंधन फ्रेमवर्क की प्रभावकारिता में सुधार के लिए आपदा प्रबंधन अधिनियम, 2005 पर पुनर्विचार करने की आवश्यकता है। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

The Disaster Management Act, 2005 warrants a revisit to improve the efficacy of the disaster management framework in India. Discuss. (Answer in 150 words) 10

Disaster management act 2005 deals with providing an institutional framework to deal with contingencies during a disaster. However despite its ^{reforms} successes it needs a serious ~~overlook~~.



Necessity to revisit DM act, 2005

① Inability to act swiftly during emergencies like during the pandemic due to bureaucratic delays.

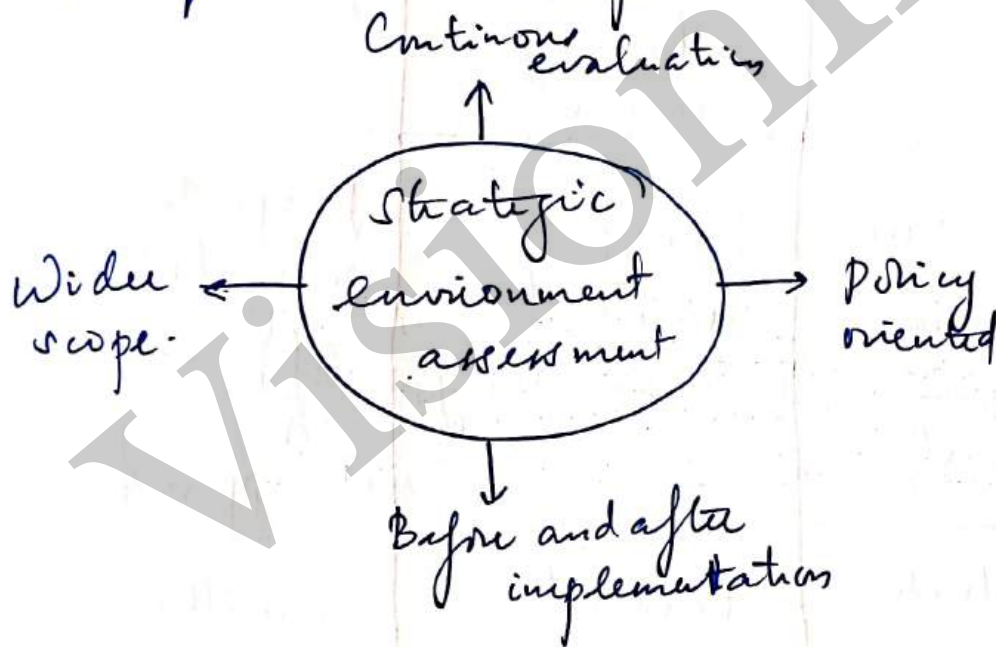
- ② Doesn't categorically address each disaster separately instead uses one size fits all approach.
- ③ Doesn't address disasters like heatwaves and forest fires.
- ④ Improper institution of disaster response force at states due to lack of funds.
- ⑤ Better delineation of powers of center and state during a disaster is required.
- ⑥ Criteria for devolution of finances for rebuilding and rehabilitation post disaster required.
- ⑦ Incorporation of PRIs in decentralized response to disasters.

Hence DRA act 2005 should be revamped according to the changing needs and global standards of Sendai Framework

रणनीतिक पर्यावरणीय आकलन क्या है? यह पर्यावरणीय प्रभाव आकलन से किस प्रकार भिन्न है? (उत्तर 150 शब्दों में दीजिए)

What is Strategic Environmental Assessment? How is it different from Environmental Impact Assessment? (Answer in 150 words) 10

Strategic environmental assessment is the method of assessing policy or programs of anyone or its consequences and impact.



Strategic environment assessment (SEA)
v/s EIA

Aspect	SEA	EIA
Evaluation	Continuous evaluation	Only at pre implementation stage

Applicability	To policies and projects	To individual projects only
Scope	wide	Narrower
Pre implementation	Consequences are assessed and changes made	No such provision
Impact on program/policy	Policies are tweaked accordingly	Projects may be approved or disapproved
At which stage	Earliest stage as possible	After other considerations

Hence making NEA a policy mandate along with EIA will help achieve necessary environmental responsibility.

जीन थेरेपी क्या है? इसके लाभों पर चर्चा कीजिए तथा इसके उपयोग से संबंधित प्रमुख चिंताओं को रेखांकित कीजिए। (उत्तर 150 शब्दों में दीजिए)

What is Gene therapy? Discuss its advantages and highlight the key concerns related to its use. (Answer in 150 words)

10

Gene therapy is the use of genes extracted from a donor or the individual himself which is introduced into the person for better health outcomes.

Advantages of Gene therapy

- ① Seen to be effective in a number of cases. (Eg) Issues in mobility is seen to have solved with gene therapy
- ② Minimally invasive procedure hence helping in faster recovery.
- ③ Can be used extensively for multiple diseases or issues

④ Certain types of cancer like leukemia is seen to get suppressed.

Key concerns for gene therapy:-

- ① Lack of long term studies on its impact.
- ② Potential chances of graft versus host disease (GVHD)
- ③ Minimal impact on immediate pain relief - require multiple sittings
- ④ Costly procedure - unaffordable to most.
- ⑤ Gene protection & incubation requires pre-planning from the individual / consent from donor

Hence gene therapy being an emerging technology promises to be a game changer in health care.

भारत के एआई मिशन (इंडियाज एआई मिशन) के प्रमुख स्तंभ क्या हैं? भारत में उत्तरदायी एआई हासिल करने में कौन-सी बाधाएँ विद्यमान हैं? (उत्तर 150 शब्दों में दीजिए)

What are the key pillars of India's AI Mission? What are the barriers to achieving responsible AI in India? (Answer in 150 words)

10

The India AI mission is the landmark programme by the government of India to create an AI ecosystem in India. Recently the government had called on applications to make use of computing capacity under the mission.

Pillars of India AI mission

- ① AI compute capacity: Creating GPU capacity to help develop an ecosystem.
- ② AI innovation center: For experimentation & innovation.
- ③ AI application center: Creation of applications that make use of AI

- ④ Safe and trusted AI : Creating responsible AI
 - ⑤ AI startup financing
 - ⑥ AI future skills : Equipping people with necessary skills.
- Barriers to achieving responsible AI in India:-

- ① First mover advantage of US based Open AI and Google
- ② Lack of indigenous Large Language models - inhibiting further innovation.
- ③ Unavailability of quality Indian datasets.
- ④ Lack of expertise of India's IT sector in ~~the~~ AI
- ⑤ Algorithmic bias creeping in due to skewed info on the web & datasets.

Hence achieving responsible AI in India is crucial for atmanirbharata.

भारतीय न्याय संहिता, 2023 में उपबंधित संगठित अपराध और आतंकवाद से संबंधित प्रावधानों का विश्लेषण कीजिए। (उत्तर 150 शब्दों में दीजिए)

Analyse the provisions related to organised crime and terrorism in the Bharatiya Nyaya Sanhita, 2023. (Answer in 150 words)

10

The Bharatiya Nyaya Sanhita, 2023 is the revamped version of the Indian Penal Code. It has special provisions for organised crime and terrorism:-

- ① Incorporating terrorism in the main legal book for the first time other than in special laws.
- ② Timeline provided for finishing of proceedings under such crimes.
- ③ Organised crimes like money laundering and illicit drug trafficking incorporated.

- ④ Extended punishments to organised crimes and terrorism at the level of special laws like UAPA or PMLA.

Issues with provisions

- ① Probable clash with special legislations like PMLA and UAPA
- ② Definitions of organised crime and terrorism are not provided leading to ambiguity.
- ③ Bail terms of such crime not at parity with special laws.
- ④ Powers to police officials may conflict with ED/NIA.

Hence the Bharatiya Nyaya Sanhita incorporation is a welcome step for organised crime & ~~terror~~ ^{terrorism} but requires more clarity.

10.

उभरती हुई प्रौद्योगिकियों का मनी लॉन्ड्रिंग पर क्या प्रभाव पड़ता है? इससे उत्पन्न होने वाली समस्याओं से निपटने के लिए कौन-से उपाय अपनाना आवश्यक हैं? (उत्तर 150 शब्दों में दीजिए)

What is the impact of emerging technologies on money laundering? What measures are necessary to address the issues arising out of it? (Answer in 150 words)

10

Money laundering is the technique of converting illicit proceeds of crime into legitimate money. It has taken new size and forms with emerging tech.

Impact of emerging tech on money laundering

a) Positive impact

- ① Ability track multiple layering transactions using big data
- ② AI/ML tools are being used to predict money laundering transactions.
- ③ Proliferation of digital transactions

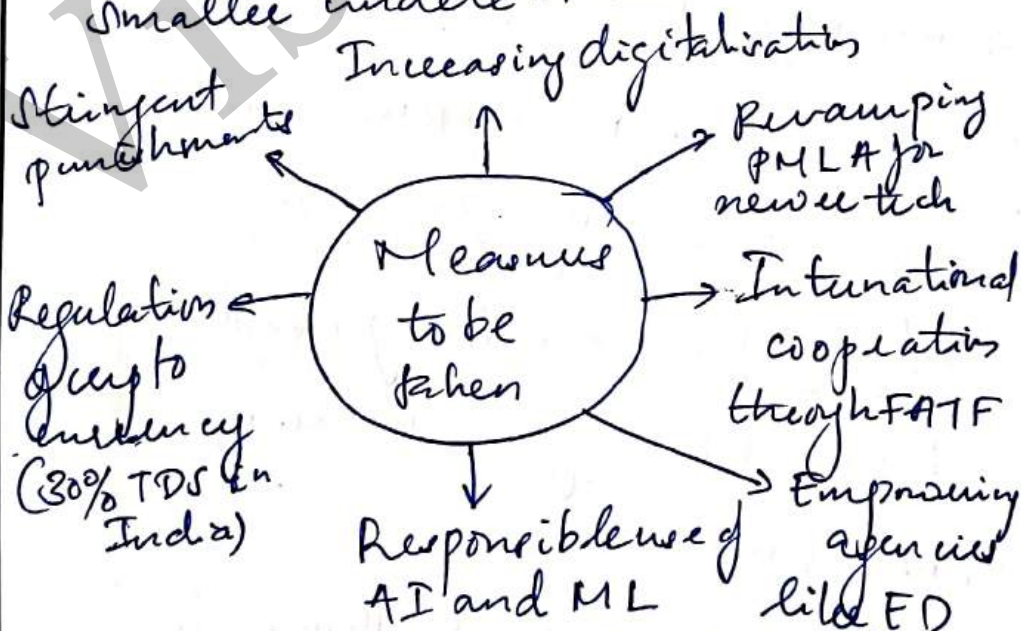
reducing chances of money laundering.

b) Negative impact

① Cryptocurrency used as a proxy for transferring proceeds of crime. ~~FD~~ Ransomware attacks as crypto as ransom

② Use of dark web to perform illicit transactions.

③ Access to tools like log data and AI providing force multiplier to smaller undetectable transactions.



Hence emerging tech is the latest frontier of economic terrorism.

1. हाल के दशकों में भारत की संवृद्धि मजबूत रही है, लेकिन इसका संरचनात्मक रूपांतरण अभी भी अधूरा है। विस्तारपूर्वक वर्णन कीजिए। इस संदर्भ में सरकार द्वारा अपनाए गए उपायों का वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

India's growth has been strong in recent decades, but its structural transformation remains incomplete. Elaborate. State the measures taken by the government in this regard. (Answer in 250 words)

15

India is expected to grow at a rate of 6.4% in FY25, highest among all the major economies of the globe as put by the IMF.

However, India faces structural issues in its growth trajectory :-

- ① Shift from primary to services in terms of growth. Eg: Economy shifted from 50% GVA from primary sector (1950-51) to 47% GVA from tertiary sector (2024-25)
- ② Jobless growth: Focusing more on capital intensive growth than labour intensive. Eg: India has missed target of job growth of national manufact-

being policy, 2011.

- ③ Disguised unemployment in agriculture causing poor statistics and improper policy targeting.
- ④ Issues with business environment hampers growth of manufacturing sector. Eg: Lack of 24x7 electricity in towns and cities even in tier-2 cities.
- ⑤ Skilling Issue: Only 4.7% of total workers in India have formal certification.
- ⑥ Job displacement from manufacturing to services or back to agriculture due to newer tech - automation & AI.

Measures taken by the govt in this regard.

- ① Production linked incentive scheme incentivising additional production attracting investments in manufacturing.

- ② PM Kaushal Vikas Yojana under Skill India - improving skills & re-skilling workers.
- ③ Atmanirbhar Bharat package focusing on reducing import dependence on goods like solar panels etc.
- ④ PM employment generation program improving employment especially those displaced during pandemic
- ⑤ PM formalisation of food processing industries: Attracting people from agriculture to food processing.
- ⑥ CGTMSF & Champions portal for MSME - improving their financial health & technology adoption.
- ⑦ Foreign trade policy, 2023 to improve exports upto \$ 2 trillion by 2027.

Hence structural transformation needs to be achieved to reach Viksit Bharat by 2047.

12.

भारत के कृषि निर्यात के पैटर्न और प्रवृत्ति का परीक्षण कीजिए। इस संदर्भ में, स्पष्ट कीजिए कि भारत कृषि निर्यात में अपनी वैश्विक प्रतिस्पर्धात्मकता को किस प्रकार बेहतर कर सकता है। (उत्तर 250 शब्दों में दीजिए)

Examine the pattern and trend of agricultural exports of India. In this context, explain how India can improve its global competitiveness in agricultural exports. (Answer in 250 words)

15

India has been one of the major exporters of agri-products especially cereals to the world. However India's total agri exports account only 2-4% of total global agri trade.

Pattern & trend of agri exports of India

a) Positives

- ① Lead in cereal exports - Basmati rice, wheat and millets
- ② Consistent increase in agri export post pandemic till 2023
- ③ Export destinations: Europe, US, Latin America & Africa.
- ④ Horticulture crop export to have

shown consistent improvement in exports.

⑤ Leading exporter of ^{main products,} dairy and meat → Largest exporter of buffalo meat

↳ Negatives

- ① Lack of product diversification - with major value coming from cereals.
- ② Stiff competition from other nations like Brazil and SE Asian nations
- ③ Falling short of ₹ 60 billion target by 2022
- ④ Decline of exports in 2023-24.
- ⑤ Minimal contribution of high value products in export basket
- ⑥ Failing to meet sanitary & phytosanitary criteria in many cases.

Measures for India to improve global competitiveness in export

① Product diversification by

focussing more on crops like millet that are in demand in global market and require minimal investment.

② Stable foreign trade policy of agri products to avoid abrupt embargos on export due to price fluctuations.

③ Skilling of farmers on modern techniques to meet sanitary and phyto sanitary criteria.

④ Food processing of dairy, meat and marine products if increased will open up the high value global market.

⑤ Increased focus on organic production and its widespread certification by NPOP can improve export

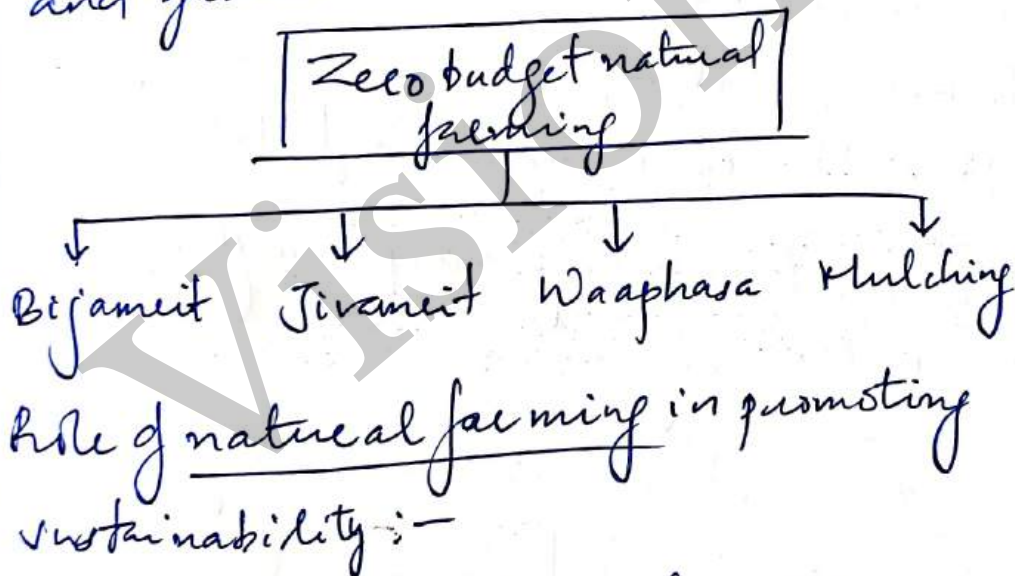
The improved access for Indian agri products to global market will help Indian economic outcomes and double farmer income - Arhoh Dalwai Committee

13.

संघारणीय कृषि को बढ़ावा देने में प्राकृतिक खेती की भूमिका का परीक्षण कीजिए। भारत में इसके व्यापक रूप से अपनाए जाने में बाधा उत्पन्न करने वाली प्रमुख चुनौतियों की विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

Examine the role of natural farming in promoting sustainable agriculture. Discuss the major challenges hindering its widespread adoption in India. (Answer in 250 words) 15

Zero Budget natural farming was popularised by Saibab Palekar as a substitute to conventional farming, focusing on sustainability and farmer incomes.



- ① Soil health : Minimal or no interventions in tilling, preserving soil bacterium & organisms.
- ② Soil moisture : Retained by using

mulching / covering soil with natural objects.

③ No use of any fertiliser both organic or chemical - improving soil health and reducing chances of algal blooms through run-off

④ Better seed germination due to use of cow dung and other natural objects for its incubation.

⑤ No use of pesticides - not disturbing natural ecosystems & soil fertility.

Challenges hindering adoption of natural farming are:-

① Poor productivity due to lack of use of chemical fertilisers & pesticides impacting farmer income.
Eg: Sri Lankan crisis.

② Lack of awareness among farmers on the benefits of ZBNF.

- ③ Water intensive crops like rice may not be suitable for ZBNF in the long run.
- ④ Fertiliser subsidies driving farmers away from natural farming.
- ⑤ Successive crop cycles may not be possible in case of ZBNF, hampering quantitative outcomes.

Measures to be taken, hence for its widespread adoption :-

- ① Agriculture extension services for ZBNF awareness through KVKs
 - ② Incentivising ZBNF through schemes for soil health
 - ③ Increasing productivity by alternate use of ZBNF along with conventional farming.
 - ④ Shifting away from cereals to other crops - millets, more sustainable
- Hence ZBNF if followed can have great impact in fulfilling India's Panchayat Pledge

14.

खाद्य प्रसंस्करण उद्योग भारत की आर्थिक संवृद्धि में किस प्रकार सहायता करता है? भारतीय खाद्य प्रसंस्करण उद्योग में कौशल विकास संबंधी चार पहलों पर संक्षेप में चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

How does the food processing industry aid economic growth in India? Briefly discuss four skill development initiatives in the Indian food processing industry. (Answer in 250 words) 15

The food processing industry in India is expected to grow at an annual growth rate of 16-18% in the next upcoming years according to Economic survey 2022-23.

Food processing aids economic growth

① Currently food processing contributes around 8% of manufacturing GVA.

② Value addition to agri products improving farmer incomes and consistent procurement.

Eg: Procurement of milk from farmers by Muzalya farms in Tamil Nadu for dairy products.

- ③ Shifting workforce away from under employment or disguised employment in agriculture.
- ④ Increasing export opportunities for agri products after food processing due to its high value nature. Eg: High value market of canned vegetables and marine products
- ⑤ Reducing agri wastage and improving marketing of agri products.

Skill development initiatives in Indian food processing industry.

- ① PM formalisation of micro-food processing industry.
 - Providing skills to enter formal sector in food processing.
 - Improved incomes, access to credit and schemes.

② PLI scheme for food processing industries

- Providing incentives to incremental production in the industry.
- Fueling investments and incentive for skilling of personnel.

③ APEDA along with ministry of commerce creating awareness on necessity of skilling of personnel and workers in agriculture for food processing.

④ Food processing skilling certificates under FICSI - increasing knowledge level and awareness among workers.

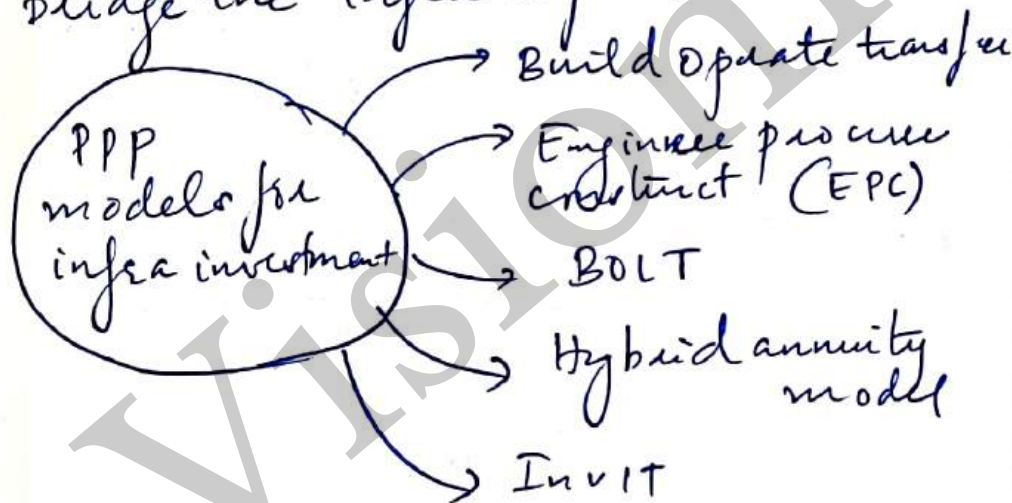
Hence food processing as a sunrise sector has huge potential in India with currently only 5% of produce being processed for economic growth & livelihoods of farmers.

15. भारत में अवसंरचना विकास में निजी भागीदारी को बाधित करने वाले प्रमुख कारक क्या हैं? निजी निवेश को आकर्षित करने के लिए सरकार द्वारा क्या कदम उठाए गए हैं? (उत्तर 250 शब्दों में दीजिए)

What are the major factors impeding private participation in infrastructure development in India? What steps have been taken by the government to attract private investment. (Answer in 250 words)

15

According to the
Vijay Kelkar committee recommendation
Public - Private partnership agreements
can bring in best of both worlds to
bridge the infra deficit in India.



Factors impeding private participation:-

① Large turnaround time in infra investment. ② Large toll payment timelines of 30 years.

- ② Improper rules and regulations and lack of uniformity - centre and states.
- ③ Lengthy and delayed conflict resolution in courts. (EJ) - Average commercial dispute takes 40 years for resolution.
- ④ Frequent changes in design and implementation standards of projects hampering profitability.
- ⑤ Lack of expertise and minimal number of domestic players in certain sectors (EJ) Drop by along with government in airport management sector.
- ⑥ Use of swiss challenge model seen as unfair globally hampering foreign investments.

Steps taken by government:-

- ① National infrastructure investment fund : To attract funds from private players by investing in basicing infra (crowding-in)
- ② PM GatiShakti to enforce timeliness and prompt execution.
- ③ Institution of investment trusts for infrastructure - (InvITs) as alternate investment funds.
- ④ Use of the hybrid annuity model over Swiss challenge attracting investment.
- ⑤ National monetisation pipeline to monetise public facilities by leasing out to private players.

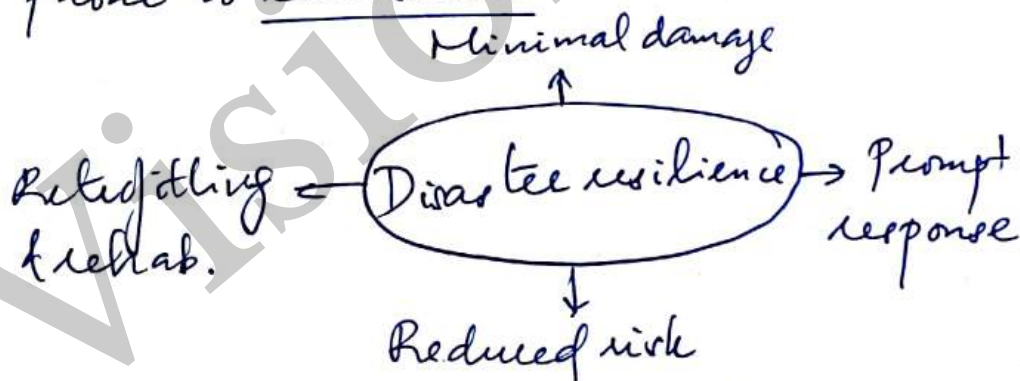
Hence the government is looking forward to incorporating private investment for a \$5 trillion economy by 2027.

16.

विभिन्न आपदाओं के प्रति भारत की संवेदनशीलता को ध्यान में रखते हुए, आपदा प्रतिरोधी अवसंरचना की आवश्यकता पर चर्चा कीजिए। इस संदर्भ में आपदा प्रतिरोधी अवसंरचना गठबंधन (CDRI) की भूमिका को स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

Considering India's vulnerability to various disasters, discuss the need for disaster resilient infrastructure. Explain the role of the Coalition for Disaster Resilient Infrastructure (CDRI) in this context. (Answer in 250 words) 15

India has been ~~was~~ recognized as one of the most vulnerable large nations to disaster owing to its 7500 km coastline prone to cyclones and 27% land prone to landslides and others.



Need for disaster resilient infra

① Reduced risk in case of natural disasters. (E) Disaster resilient infra in bridges and buildings in Japan against earthquakes.

- ② Reduced damage even in case of disasters. Eg: Use of eco friendly and light weight materials to reduce damage in case of earthquakes.
- ③ Better quality of living without anxiety improving investments.
Eg: Roon for roon project in Netherlands improving quality of life at times of floods.
- ④ Prompt response and decisions making at times of disaster. (Eg) Infrastructure retrofitted with fire stairways and emergency storage rooms.

Role played by CDRI - Coalition for disaster resilient infra :-

- ① International cooperation in setting standards for disaster resilient

infrastructure. (E) Building standards to be retro fitted for earthquake resilience.

(1) Adopting best practices from across the globe. (E) Kerala adopting room for river project of Netherlands

(2) Pooling finance for helping developing nations and small island nations vulnerable of disasters.

(4) Sharing of technology for disaster response and prediction in case of weather phenomenon. (E) IMD of India is a world renowned organisation

(5) Annual summit and conferences helping keeping abreast to latest challenges in disaster resilience.

Hence CDRI initiative by India is the right step in achieving disaster risk reduction envisaged in Sendai framework

17.

भारत में सुंदरबन की संसाधन क्षमता पर टिप्पणी कीजिए। प्रकृति-आधारित समाधान पर्यावरणीय चुनौतियों के प्रति इसकी प्रभावशीलता को किस प्रकार बढ़ा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

Comment on the resource potential of the Sundarbans in India. How can nature-based solutions enhance its resilience against environmental challenges? (Answer in 250 words)

15

Sunderbans is the largest mangrove forest in the world. Its contribution to India's economy and ecology are priceless.

Resource potential of Sundarbans

- ① Presence of large amounts of endangered and keystone species
- ② EP - Sunderbans hosts the Bengal Tiger.
- ③ Mangroves providing shelter to aquatic & terrestrial animals. Also acting as natural barrier to cyclones in the region.
- ④ Ecosystem services like cleansing water and sequestering of heavy

metals in the area.

- ④ Wetland area providing edge effect \Rightarrow unique species
- ⑤ Presence of resources like timber, fuelwood, sand etc.

Nature based solutions to enhance its resilience:-

- ① Planting of mangroves to compensate for depleted forests. (E) - NISHTI scheme of the government.
- ② Protection of unique aquatic and terrestrial organisms in the region to protect its ecosystem. (E) - Bengal tiger protection as flagship species
- ③ Mangroves as natural barrier to sand mining and unsustainable

extraction of resources.

- ④ Incorporation of adjacent tribal and population well versed in tradition knowledge for its protection.
- ⑤ Utilisation of wetland ecosystems for unsustainable tourism to be prohibited. (Eg) Focusing eco-tourism with minimal disturbance.
- ⑥ Protecting interspecies and intra species diversity of mangroves by proper enumeration and classification.
- ⑦ Restoration of shorelines and ecosystems in areas where they are damaged.

Hence protection of Sunderbans is critical for the ecological balance of the region and for a greener and sustainable India.

18.

हरित हाइड्रोजन एक संधारणीय ऊर्जा भविष्य की दिशा में एक आशाजनक उपाय है, लेकिन भारत में इसके व्यापक रूप से अपनाए जाने में काफी बाधाएं विद्यमान हैं। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

Green hydrogen is a promising pathway towards a sustainable energy future but its widespread adoption in India encounters substantial obstacles. Discuss. (Answer in 250 words) 15

Green Hydrogen is the hydrogen as a fuel generated from the electrolysis of water causing next to zero carbon footprint. It is predicted as a sustainable fuel of the future.

Green hydrogen as a pathway for sustainable future :-

- ① Minimal carbon footprint compared to fossil fuel.
- ② Reducing import dependence unlike fossil fuels on which India is import dependent.
- ③ Higher energy capacity and efficiency compared to

fossil fuels.

- ④ Ability to indigenise technology for hydrogen production and its widespread use.

Obstacles for its widespread adoption

- ① Costly setting up of factories to generate hydrogen at massive scales.
- ② Application of hydrogen in mobility and freight transport - minimal, require more R & D.
- ③ Higher spending than current level of India on R & D required
Eg: India < 1% GDP on R & D.
- ④ Can be transported only at sub zero temperatures making

it costly and difficult.

- ⑤ Energy density of hydrogen much lesser than fossil fuels.
- ⑥ Widespread adoption of Battery EVs and spread of charging infra, might cause inertia to shift to another technology.
- ⑦ Electricity production for electrolysis still depends on coal in India with 55% production capacity.
- ⑧ Requirement of land and capital for setting up of factories - difficult in urban centres.

Hence, the green hydrogen mission with a target of $\$5$ MMTPA by 2030 is a step in the right direction for a sustainable and atmanirbhar future.

19.

भारत की उत्तर-पूर्वी सीमा से संबंधित परस्पर विरोधी मुद्दों और सुरक्षा चुनौतियों का परीक्षण कीजिए।
(उत्तर 250 शब्दों में दीजिए)

Examine the conflicting issues and security challenges along India's North-East border. (Answer in 250 words)

15

India's north east has a history of continuing conflicts and security challenges. It has borders with Bangladesh, Myanmar and China.

Issues in north-eastern border



a) Conflicting issues

- ① China : lays claims to parts of Assam and Arunachal Pradesh
- ② Myanmar : issues with India's erstwhile pro-movement regime and also spread of insurgency.
- ③ Bangladesh : Land disputes

settled by land boundary agreement
of 2015.

b) Security challenges

- ① China providing covert support to insurgent groups in Myanmar looking to destabilise India.
- ② Free movement regime being misused for insurgent infiltration.
(Eg): Kukis infiltrating from Myanmar in Manipur violence.
- ③ Migration from Bangladesh to north eastern India since 1971 and continuing.
(Eg) Fears of demographic change among ethnic groups in north east
- ④ Insurgent groups taking shelter in adjacent nations after

committing crimes in India.

① NRC in Myanmar, despite requests from India not cooperation.

Way forward

① Cooperation between governments to resolve land boundary and since disputes.

② Revamping free movement regime balancing security and rights of ethnic groups.

③ Using international force like UN to call for cooperation in handling insurgents.

④ Migration from Bangladesh and rights of ethnic groups stopped by following NRC exercise in whole of north east.

Hence a combination infrastructural development with meeting border challenges will make north east safe and secure.

20.

भारतीय तटरक्षक बल की बहुआयामी भूमिका भारत के समुद्री क्षेत्र की सुरक्षा और अखंडता को बनाए रखने के लिए अत्यंत महत्वपूर्ण है। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

The Indian Coast Guard's multifaceted role is vital for maintaining the security and integrity of India's maritime domain. Discuss. (Answer in 250 words) 15

India has a coastline
of around 8000 kilometers it is
protected by the Indian Coast
Guard close to the shore and Indian
navy in international waters

Multifaceted role of Indian Coast
Guard

- ① Protecting coastline from
incursions in the EEZ
- ② Protection of seas from unauthorised
resource extraction
- ③ Gathering of intelligence of
state and non-state actors
in cooperation with International
Freedom Centre

- ④ Protecting safe passage of ships and vessels inward and outward of Indian coasts
- ⑤ Coastline infrastructure and logistics protection - ports and shores.
- ⑥ Guiding activities of fishermen and other coastal communities
- ⑦ Avoiding spill over of global conflicts to IOR and Indian coasts
- ⑧ Eg Inter agency periodic combing of Indian coasts.

What more needs to be done to make the Indian coast guard more effective:-

- ① Inter agency coordination between coast guard and navy need to be strengthened.

- ② Improved technology adoption by coast guard like RFID detection of deep sea trawlers.
- ③ Improving goodwill of coast guard among coastland communities on the lines of operation Sadbhavana by Indian Army.
- ④ Cross national training and cooperation with neighbouring nations to avoid fishermen capture.
- ⑤ Better training of personnel to deal with growing sea denial and proxy threats in IOR.

Hence Indian coast guard is a vital piece in India's security architecture.