②

TEST CODE **7 1 3 3 0 4**

MGP 2024

Time Allowed : Three Hours
समय : तीन घंटे

↗ForumIAS

Maximum Marks : 250
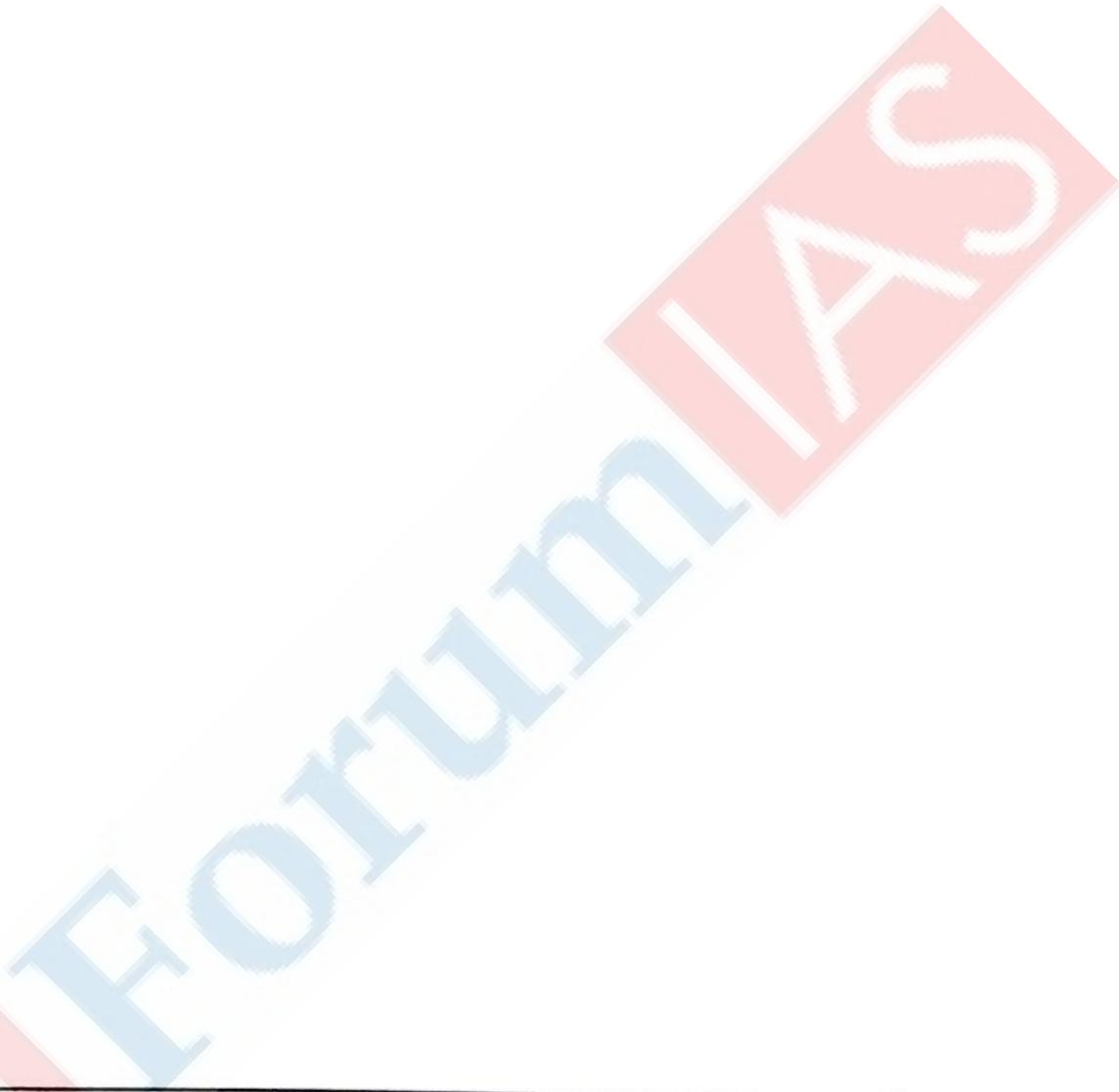अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	Lakshay Aggarwal			
Roll No./अनुक्रमांक	1910160324	Medium/माध्यम	English ☑	हिंदी ☐
Center Code/परीक्षा केंद्र	Online	Date/दिनांक	15.09.2024	

*Center Code : For Online - 1900 / Delhi : Karol bagh - 1901, ORN - 1902, Mukharji Nagar - 1903/ Patna : Boring Rd. - 2001 / Hyderabad : Jawahar Nagar - 2101

i^24
f^on
v

middle
years

INDEX TABLE / अनुक्रमणिका				INSTRUCTION / अनुदेश
Q. No. प्र.स.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक		1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet. कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।
1				
2				2. There are **TWENTY** questions printed in ENGLISH & HINDI, all questions are compulsory.
3				उत्तर पुस्तिका में अंग्रेजी / हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।
4				
5				3. The number of marks carried by a question/part is indicated against it.
6				प्रत्येक प्रश्न / भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।
7				
8				4. 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.
9				
10				उत्तर प्रवेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।
11				
12				
13				
14				5. Word limit in questions, if 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.
15				
16				
17				प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।
18				
19				
20				
Total/कुल अंक	250			

Examiner's Discretion/मूल्यांकन कर्त्ता का विवेक :		**For Student Only / केवल परीक्षार्थी प्रयोग हेतु**	
		Start Time/प्रारंभ करने का समय : 9.00 am	End Time/समाप्त करने का समय : 12 noon
Total Marks/कुल अंक :		Mode Of Examination/ परीक्षा की विधि : Online	Online/ऑनलाइन ☐ Offline/ऑफलाइन ☐

*Examiner's Discretion is the marks awarded at the discretion of the examiner based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy.

मूल्यांकन कर्त्ता का विवेक अंक, आपकी लिखावट, प्रस्तुति, आरेखों के उपयोग, फ्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु जो मूल्यांकन कर्त्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।

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ECN CODE/ ईसीएन कोड :	EG/ईजी : ① ② ③ ④ ⑤	Evaluation Date/ मूल्यांकन तिथि :

EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS – Answered What is Asked**: This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer to it. In creative answer writing, sometimes missing the core demand may fetch very high or very low scores, and exposes your answer to the subjective vagaries of answer-writing.

2. **CD & VA – Content Density & Value Addition**: Examiner will evaluate the quality and quantity of your content in the answer. In the same writing space, (a) have you not written what is asked (b) gone beyond what is asked (c) enriched answers through combination of, but not all, suggestions like quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.

3. **S & F – Structure & Flow**: Whether you have structured your answer properly or not. Whether the answer has been broken into parts and answer to each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.

4. **P & R**: How your answer performs on the criteria of presentation, ease of read, clarity, and apparent effort in writing the answer. This affects subjective components of assessment.

Q.1) Why has there been an increased focus on negotiating, renegotiating and concluding Free Trade Agreements (FTAs) by India in recent years?

(10 marks, 150 words)

हाल के वर्षों में भारत द्वारा मुक्त व्यापार समझौतों (FTAs) पर बातचीत, पुनर्वार्ता और समापन पर ध्यान क्यों दिया जा रहा है?

(10 अंक, 150 शब्द)

Recently, free trade agreement (FTA) was concluded between Indian and EFTA nations like liechtestein, switzerlands Norway.

FTA are trade agreement that aim to reduce tariffs to facilitate more trading in between nations.
⇒ India Srilanka FTA.

Reasons for increased focus on FTAs.

① . Increasing global trade footprint. to boost economic opportunities at home. ⇒ software industry

② To cater to growing needs at home.
⇒ India IIIrd largest consumer market.

③ Technology transfers and innovation
⇒ EFTA includes IP protocols.

④ To support make-in-India initiative

⑤ To boost FDI investments.
⇒ India in top 10 FDI recipients.
– Economic survey

⑥ To build trade alliances
  └ multipolar world
    supply chain rationalisation
    └ Friendshoring trend.

Issue with recent FTAs

① └ unequal terms : favourable to others
② Agreement with ASEAN nation help
  them disproportionately.

② Issue of growing protectionism

③ • Problem of domestic industries
  EFTA boosts competition for domestic
  manufacturers.

way forward.

① Industry dialogue before contemplat-
  -ating future FTAs
② trade on equal footing.
③ Boost data analytics for reading
  market sentiment.
④ Boost make in India,

FTAs are a way forward in integrating
~~Global~~ market. to achieve SDG ⑩
reduced inequalities.

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(Don't Write anything in this Area / इस स्थान पर कुछ न लिखे)

Q.2) A well-designed fiscal policy can serve as a vital instrument to facilitate the equitable distribution of resources and ensure the welfare of all sections of society. Elaborate. (10 marks, 150 words)

एक अच्छी तरह से डिज़ाइन की गई राजकोषीय नीति संसाधनों के समान वितरण को सुविधाजनक बनाने और समाज के सभी वर्गों के कल्याण को सुनिश्चित करने के लिए एक महत्वपूर्ण साधन के रूप में काम कर सकती है। विस्तार से वर्णन कीजिए।

(10 अंक, 150 शब्द)

"Fiscal policy is not obsolete, it is still a very effective weapon to boost economic activity."
— Gita Gopinathan

Fiscal policy is revenue & expenditure policy of government.

Fiscal policy helps in equitable distribution of resources :-

- via directly funding underfunded section eg. farmers- PM KISAN.

- providing equal employment opportunities eg. MGNREGS.

- making correct the unequal development issues eg. PMGSY, Adi Adarsh Gram. Yojna

- uplifting social indicators among minorities - Nai Roshni,
education SC, STs - Eklavya schools
women - Laadli scheme of Delhi.

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It ensures welfare of all in the society via :-

- targeted benefit provision
  (eg) PM Matr Vandana Yojna for lactating mothers

- improving rural infrastructure
  (eg) PM Gramodaya Yojna , PMKSY

- environmental issues addressed by - PM PRANAM schemes

Issues with fiscal policy

- mounting government debt @ 80% as against NK Singh Committee's 60% recommended.

- populist schemes (eg) Rewdi culture

- Problem of off budget borrowing

way forward :- fiscal discipline must be maintained.

follow fiscal glide pattern - Economic survey

Hence, fiscal policy is a tool for development not a weapon for populism,

Q.3) What are the primary factors contributing to India's significant reliance on imported edible oils? What measures do you suggest to increase domestic production and to reduce India's reliance on imported edible oils? (10 marks, 150 words)

आयातित खाद्य तेलों पर भारत की महत्वपूर्ण निर्भरता में योगदान देने वाले प्राथमिक कारक क्या हैं? घरेलू उत्पादन बढ़ाने और आयातित खाद्य तेलों पर भारत की निर्भरता को कम करने के लिए आप क्या उपाय सुझाएंगे? (10 अंक, 150 शब्द)

With India importing ~40% of its oil palm requirements, the concern of over reliance on imports is palpable.

rising imports → increasing deficit with Indonesia & malaysia.
→ ~40% oil palm imported in last year (economic survey)
→ sunflower oil import from ukraine

Reasons for the trend.

① Rising domestic consumption
   India number ① consumer of oil palm in world ↳ cosmetics, processed food.

② Issue with domestic production
   ↳ focus on rice wheat production
   ↳ availability of tropical climate
   ↳ water woes in southern states
      ↳ tamil nadu

③. Issue with oil processing technique

laggard technology

(4) Depleting crop of edible oil
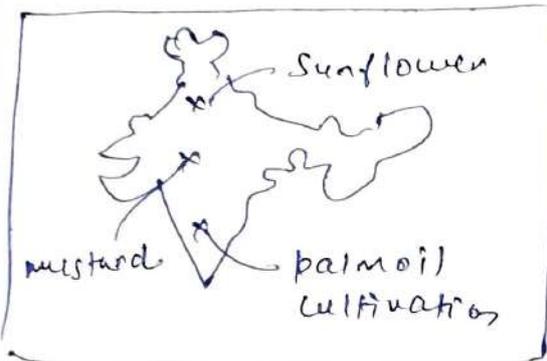   └ └ effect on water table adverse
     soil fertility declining.

Sunflower

mustard — palmoil
cultivation

fig. oil seed
cultivation
in India

(5) policy support
    is lacking.

[Suggestion & initiatives]

① Gout. incentive — National mission
   for oil palm. sampada yojna.

② Mega food park scheme
   └ Srini park in Andhra.

③ Import substitution
   └ technology transfer

Hence, India is correcting the gap
between oil production & consumption
to achieve self sufficiency.

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Q.4) With the growing water crisis in India, micro irrigation offers a sustainable solution for water conservation; however, its adoption remains skewed and below its potential. Discuss.

(10 marks, 150 words)

भारत में बढ़ते जल सकट के साथ, सूक्ष्म सिंचाई जल संरक्षण के लिए एक स्थायी समाधान प्रस्तुत करती है, हालाँकि, इसका उपयोग अभी भी विषम है और इसकी क्षमता से कम है। चर्चा कीजिए।
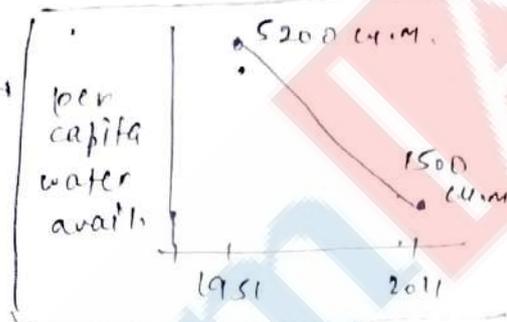
(10 अंक, 150 शब्द)

IPCC's 6th AR highlighted "vampiric overconsumption" of freshwater in India.

growing water crisis. —→

per capita water avail.

(ministry of jal shakti)

Micro irrigation
  using precision tools to directly irrigate at roots of plant
    ↳ saves water.
    ↳ prevents runoff of wastewater.

Potential of micro irrigation : [causes of non adoption]

① Cost intensive setup.
  ↳ Drip irrigation system is costly

② maintenance issues
    ↳ availability of technician
      ↳ concerns of capital.

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③ lack of incentive with farmers.

  └ free electricity for farm

  (eg) tubewells get zero running
       cost.

  free water consumption

④ Attitudinal issues

  └ water is seen as ubiquitous

⑤ Government issue

  └ $ support and nudge

[Solution].

① Viability gap funding for Drip Irrig-
   -ation adoption.

② Using innovative techniques
   (plasticulture) → to prevent water
                               wastage

③ Strengthening local groups.
   (eg) lakhpati Didi scheme to include
        drip technician.

④ Government - private partnership
   (eg) IBM's precision agriculture
        push in UP

Here, water issues can be solved via
micro Irrigation to achieve SDG ⑥

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Q.5) The recurring railway accidents highlight the urgent necessity for addressing the myriad challenges related to safety, undercapacity and lack of modernization within Indian Railways. Analyse.

(10 marks, 150 words)

बार-बार होने वाली रेल दुर्घटनाएँ भारतीय रेलवे के भीतर सुरक्षा, अल्प-क्षमता और आधुनिकीकरण की कमी से संबंधित असंख्य चुनौतियों के समाधान की तत्काल आवश्यकता को उजागर करती हैं। विश्लेषण कीजिए। (10 अंक, 150 शब्द)

Railway accidents cost ~3% of GDP per annum to India.

– NITI Ayog

Recurring railway accidents. ⎱ – Odisha train collision.
⎰ – Gujarat train crash

myriad challenges facing railways :-

- safety in archaic railway infrastructure
  ↳ non-adherence to safety norms
  (~30k unmanned crossings)
  no fencing of most tracks.

- undercapacity
  ↳ overworked train drivers.
  (recent strikes)
  issue of vacancies in railway board

- modernisation.
  ↳ laggard technology adoption.

constrained
Finance :- rail budget included in ordinary budget

9

Solutions & suggestions :

(1). Anil Kakodkar committee for railway safety's recommendations to be followed

(2). Install KAVACH TCS system in all trains (eg) odisha accident trains had no KAVACH.

(3) Replace all unmanned rail crossings, fencing of tracks - prevent man-animal life

(4). For railway undercapacity,
    - bring railway regulator bill (Bibek Debroy recommended)
    separate examination for railways

(5) For modernisation
    - sam pitroda committee
    train-18 - vande bharat trains
    Aluminium chassis trains - light weight and faster.

Hence, India with world's 4th largest railway infrastructure should be upgraded and made safe.

Feedback
(For OFFICE use ::

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AWIS	
CD & VA	
S & F	
P & R	

Please put tick marks in the above table.
Here G is Good, A Average and P is Poor.

TOTAL MARKS	

10

Q.6) How does NISAR mission exemplify international cooperation in space exploration and scientific research? In what ways will it help in climate change monitoring and natural hazard management?

(10 marks, 150 words)

NISAR मिशन अंतरिक्ष अन्वेषण और वैज्ञानिक अनुसंधान में अंतर्राष्ट्रीय सहयोग का उदाहरण कैसे प्रस्तुत करता है? यह जलवायु परिवर्तन की निगरानी और प्राकृतिक आपदा प्रबंधन में किस तरह से मदद करेगा? (10 अक, 150 शब्द)

NASA and ISRO's space aperture program (NISAR) is a tectonic shift in international collaboration to take leap in space technology.

NISAR mission is a space based observatory mission by USA and Indian agencies.

It exemplifies space cooperation.

- technology sharing between India & USA.
- equal participation of both agencies
- shedding off of junior partner image.
- sharing of findings of research.

Hence, boosting our knowledge of space weather and related exploration

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If will help in climate change monitoring via:

- making observation of earth's atmospheric circulations

- Solar rays & corona's impact on earth's magneto-sphere

- observing ~~India~~ climate change in real time

(Issues) - Cost constraints
- reliability of USA
- technological lags of ISRO

[way forward] - with Artemis accords, space cooperation is the need of the hour for an inclusive space.

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Q.7) Nuclear technology can play a transformative role in enhancing food security and agricultural sustainability. Discuss.

(10 marks, 150 words)

जनन् पेद्योग्की खद्य सुरक्षा और कृषि स्थिरता को बढ़ाने में एक परिवर्तनकारी भूमिका निभा सकती है। चर्चा कीजिए।

(10 अंक 150 शब्द)

Nuclear energy makes up about 2% of India's energy apparatus, yet, it can be used to boost our agriculture sector too.

Nuclear technology 's role in :-

- enhancing food security
  - Irradiation of food produce can increase its longevity, and reduce wastage.
  - (2) irradiation of onion prevents perishability

  - building pest resistance

  - (4) killing pest via nuclear energy,

- Agricultural sustainability
  - "Greenifying" agriculture
  - nuclear energy is clean, hence will help reducing GHG from agricultural power consumption.

Nuclear energy can help increasing farmers income by:

    using small modular reactors

Challenges → public perception of nuclear energy
- Kudankulam protests
- problem of technological laps
- uranium availability
- India will still need ~28 years to reach stage III of nuclear technology

Way Forward → Boosting research
- VAIBHAV initiative
- changing public perception
- boost to nuclear energy plants
- Jaitapur plants
- International collaboration
- French collab in maharashtra plant.

Hence, nuclear technology can help us achieve more sustainable agriculture

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Q.8) Increasing frequency of forest fires in India underscores the urgent need for sustainable forest management practices. In light of the statement, bring out the causes and multidimensional impact of forest fires. Also, suggest measures for their prevention and management.

(10 marks, 150 words)

भारत में जंगल की आग की बढ़ती आवृत्ति स्थायी वन प्रबंधन प्रथाओं की तत्काल आवश्यकता को रेखांकित करती है। इस कथन के प्रकाश में, वनाग्नि के कारणों और बहुआयामी प्रभावों का उल्लेख कीजिए। साथ ही इनकी रोकथाम और प्रबंधन के उपाय भी सुझाएं।

(10 अंक, 150 शब्द)

Recent Uttarakhand fires highlight the gravity of forest fires in India.

Forest fires - large scale incineration of forests

[Causes]

Natural :
- excessive heat days
- natural friction between chir pine leaves
- falling rocks cause friction spark

Anthropogenic :
- preventive fire grown out of hands
- campfires, cigarette stubs
- slash & burn agriculture

[Multidimensional impact]

① loss of lives
   - ~30 people killed in Californian forest fire

② loss of livelihood
   - eg. minor forest produce is lost
   - challenge to tribal populace

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(3) Aids global warming.

⎰ ↑ in temperature
⎱ ↓ in oxygen producing trees
↳ smoke towers decrease albedo → climate reinforcing

(4) Destruction of public infrastructure

(5) Loss of soil quality.

Measures:

(1) Early warning systems

↳ heat mapping

(2) Information dissemination system

(3) Coordination at all levels →

(4) Capacity building at local level.

↳ reduce deployment of army.

(5) Public awareness → no smoking, camping

(6) Preventive fires, replace pine trees
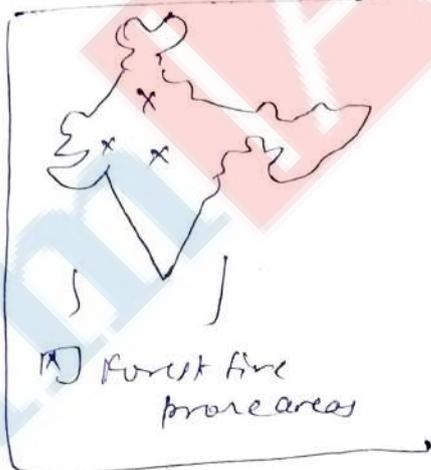
Hence, Forest fires can be mitigated.

(A) Forest fire prone areas

.5 7
Q.9) What reas
mir? What stra

जम्मू-कश्मीर में ह
आप क्या रणनीति

Feedback
(For OFFICE use o

#	G	A
AWIS		
CD & VA		
S & F		
P & R		

Please put tick marks in the above table.
Here G is Good, A Average and P is Poor.

TOTAL MARKS		

Q.9) What reasons can be attributed to the recent surge in terror related violence in Jammu and Kashmir? What strategies would you suggest to counter it? (10 marks, 150 words)

जम्मू-कश्मीर में हाल ही में आतंकवाद से संबंधित हिंसा में वृद्धि के क्या कारण हो सकते हैं? इसका मुकाबला करने के लिए आप क्या रणनीति सुझाएंगे? (10 अंक, 150 शब्द)

Recent attacks in Reasi and Pulwama were agrim reminder of unstability in Jammu & Kashmir.

Terror incidents → decline by 50%.
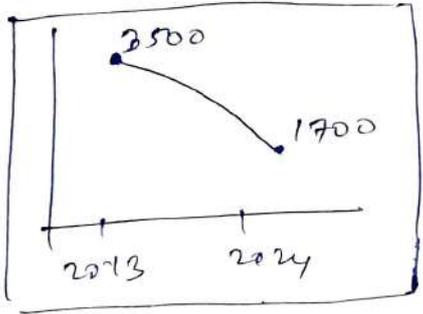
Insurgency related incidents declined by 35%.

2500

1700

2013   2024

(NITI data)
Ayog

Reasons for recent surge.

① Reduced focus on terror activities
   ↳ recent elections reduced border personnel.

② Increased funding from ISI and pakistani agency

③ Public perception may have soured post election delays.

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Suggestions to counter

① public involvement
⎣ schemes like BADP and
Himayat must be implemented

② patrolling on border areas,
⎣ improvement in surveillance
techniques

③ Involving local police
⎣ citizen connection and
capacity building

④ Better coordination between intell-
-igence agencies.
⎣ NIA & CBI & STF & Border
police.

⑤ unified approach of all above

Also, Kashmir situation needs to
be tackled.

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Q. 10) In the light of recent events, throw light on the possible implications of 'cyber slavery' on internal security of India
(10 marks, 150 words)

हाल की घटनाओं के आलोक में, भारत की आंतरिक सुरक्षा पर साइबर स्लेवरी के संभावित प्रभावों पर प्रकाश डालिए।
(10 अंक, 150 शब्द)

India is 3rd most vulnerable to cyber attacks in world.
— FBI report.

Cyberslavery refers to subjugation of person using ICT or cyber means

Implication of cyber slavery on internal security of India :-

① Cyber terrorism
  └ using sleeper cells to detonate & terrorize

② Increase in cybercrime
  [Luring terror proxies
  [using gullibility & financial illiteracy
  [↑ in 24% of cyber crime in 2022- NCRB

③ Issue of cyber sovereignty
  data theft issues (eg) Apple & Tomato

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It will lead to financial, economic
& social _____ of India

[Suggestions to tackle]

(1) Agencies to be strengthened and
will collaborated response
(Objectives) cyber crimes to _____

(2) Public awareness
_____ initiatives

(3) _____ for social media (new IT
Rules), regulation of social media
harassment.

(4) tackling deepfakes using guidance,
_____ of _____

_____ public
_____ all three need to
_____ together
_____ private
Govt. _____ to tackle this
_____,
private

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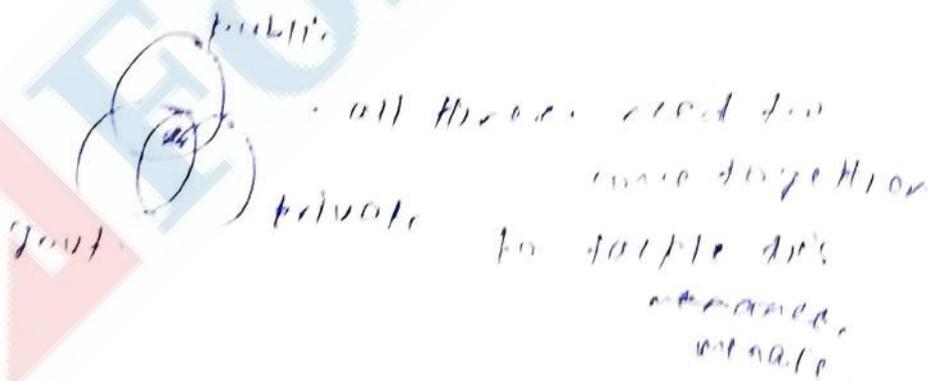
Q.11) "The liberalization policies of 1991 significantly enhanced India's economic dynamism, but the evolving global and domestic landscape necessitates 'Reforms 2.0' for sustained economic development and prosperity." Comment
(15 marks, 250 words)

"1991 की उदारीकरण नीतियों ने भारत की आर्थिक गतिशीलता को महत्वपूर्ण रूप में बढ़ाया, लेकिन उभरते वैश्विक और घरेलू परिदृश्य में सतत आर्थिक विकास और समृद्धि के लिए 'सुधार 2.0' की आवश्यकता है।" टिप्पणी कीजिए।
(15 अंक, 250 शब्द)

Liberalization policies of 1991, reformed Indian economy from,

License Permit Quota (LPQ) to liberalised, privatised and globalised (LPG).

Significance of 1991 reforms.

- Boom in Indian service sector
  ~60% of Indian GDP from tertiary sector
  India as IT hub.

- Increased consumer goods market
  e.g. Marico, HUL, etc

- Increased global share of India
  ~2% of merchandise exports.

- Increased FDI → boosted economic growth.

- Helped boost standard of life.
  └ more incomes.
  └ more education.
  more health.
  e.g. private companies like Apollo.

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Evolving global and domestic landscape:

- Rise in multinational corporations
  & data sovereignty issues
- Multipolar world,
  ⌐ supply chain integration.
    rise of protectionism.
  ⟼ EU CBAM tax.
- Environmental concerns - ill effect of
  rampant consumption.

Reforms 2.0. are needed to boost India's
  — self reliance.
  — employment issues solution.
  — achieving $5 tn economy aim.

Following is the new focus
- Improving ease of doing business
  (EoDB).
  ⌐ India's rank consistently ↑ to 63rd

- Improving skilling of workers
  ⌐ knowledge economy.
  ⌐ increasing trade complexity
  ⟼ NSDC, RPL programmes.

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- Focus on self reliance
  - Make in India initiative
  - PLI schemes, export promotion
  - ⓧ medical equipment.   eg [DESH bill]

- Environmental sustainability
  - Clean economy - Paris principle
  - ESG reporting requirements by SEBI.
  - RPO obligation.

- International cooperation.
  - supply chain resilience initiative
  - eg INDUS initiative (India US) tech transfer.

- Focus on MSME and rural entrepreneurship
  - RAMP scheme
  - eg UDYAM portal.

Way forward : India should tap into its demographic dividend, to cater to challenges of New world order & achieving Panch pran of PM Modi'

Q.24 Infrastructure development is essential not just for economic transformation but also for sustainable development and societal well-being. Elaborate with examples.

(15 marks, 250 words)

बुनियादी ढांचे का विकास न केवल आर्थिक परिवर्तन के लिए बल्कि सतत विकास और सामाजिक कल्याण के लिए भी आवश्यक है। उदाहरणों के साथ विस्तार से समझाइए।

(15 अंक, 250 शब्द)

<u>Infrastructure</u> or social capital is the structure of physical and digital amenities that improve quality of life.

Digital
. internet
. telephone

Components of Infrastructure

Physical
. roads,
. ports,
. hospitals
. schools

Institutions
. government buildings
. offices space.
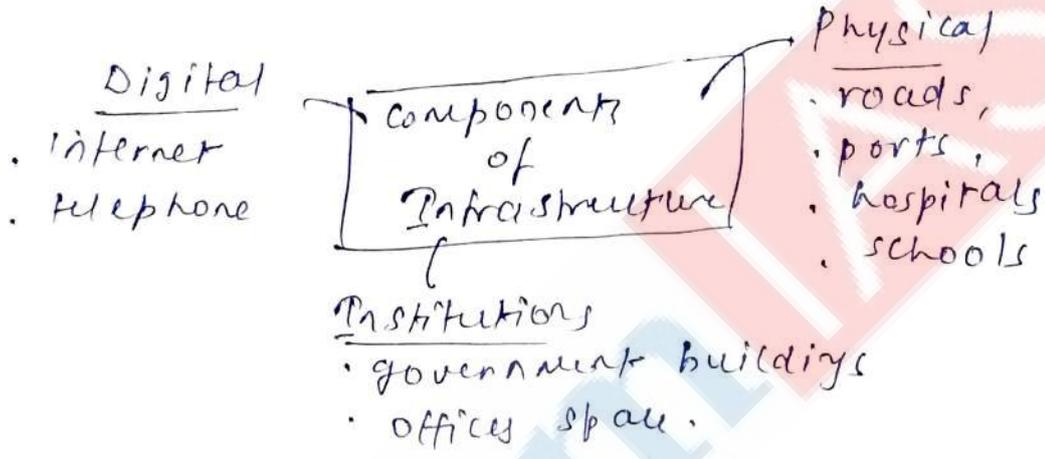
<u>Importance of infrastructure development</u>

① <u>In economic transformation.</u>

. multiplier effect . on economy

➁ 1 ₹ spent on rail. infrastructure gives back 5 ₹ in economy
            — NITI Ayog

. boosts rural connectivity & rural economy

➂ last mile connectivity to goods

. improves social indicators.

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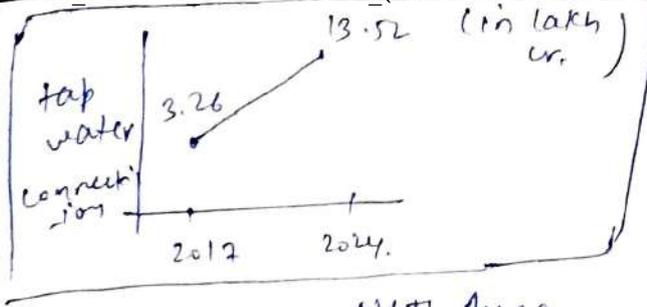
— NITI Ayog data.

② Social well - - being improved.

• LPG connections
  ↳ PM Ujjawala

• Rural electrification
  ↳ PM Surya.

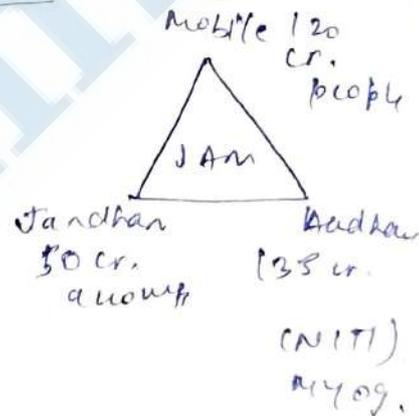③ Sustainable development.

- helps in inclusive development
  ↳ financial inclusion via JAM trinity

- boosts social integration.
  ↳ ease of connectivity

- helps in improving environmental conditions
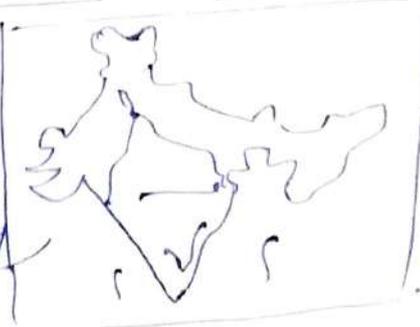 ↳ Solar roof top scheme

JAM
Mobile 120 cr. people
Jandhan 50 cr. account
Aadhar 135 cr.
(NITI) Ayog.

④ Others - improves ease of doing business.

• improves government's tax base

dedicated freight corridors

Digital public infrastructure (DPI)

- helps in direct benefit transfer of subsidies (social upliftment)

- accessibility improvement
  (→) e-governance initiatives like e-district

- improved quality of services
  (→) courier app - direct certificate.

[suggestions for improvements]
- National infrastructure pipeline be made operational.

- public private partnership improved
  (→) HAM model

- public participation & transparency
  (→) Highway mitra app

sustainable infrastructure
(→) green technology

Hence, sustainable infrastructure is key to industry growth to achieve sabka sath sabka vikas & SDG (8) sustainable industrialization.

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... ... security, livelihood generation, and economic growth. Also, mention various measures taken by the government to promote aquaculture in the country.

(15 marks, 250 words)

जल सुरक्षा, आजीविका सृजन और आर्थिक विकास के संदर्भ में जलीय कृषि के महत्व पर प्रकाश डालिए। साथ ही, देश में जलीय कृषि को बढ़ावा देने के लिए सरकार द्वारा उठाए गए विभिन्न उपायों का उल्लेख कीजिए।

(15 अंक, 250 शब्द)

Aquaculture refers to cultivation of plants in water instead of soil as usual. For example Aquaponics, many plant cultivation.
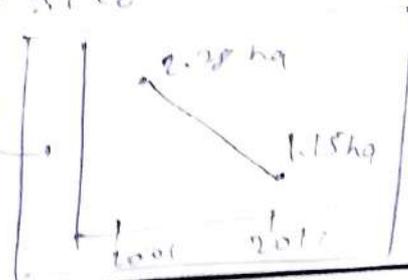
Aquaculture's significance in:

(1) Nutritional security.

- (planting crops that are non nutritious.
- moving away from wheat dominance

helps in boosting the nutritional profile eg 26% men & 56% women anaemic.
— NFHC (5)

(2) Livelihood generation

- reducing farm size — need for aquaculture. per capita farm size

• helps in doubling farmers' income
(Ashok Dalwai committee)

③ Economic growth
└ boosts country's exports income
(e) India #1 in inland fisheries
and #5 in exports.

• empowers financial security of
farmers → economic growth of
downtrodden.

diversified agriculture → helps in
improving agriculture's contribution
to GDP from current 16%

[Government's initiatives]

• PM matsya sampada yojna,

• promotionto bioflog

• funding programme from NABARD

• boost to aquaculture via.
└ hydroponics schemes in
budget.
hydroponics (e) humidity helping
in cultivation.

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...ment of produce and preventing food wastage via.

(└ pm Bhai - storage initiative
  └ mega food park scheme - processing initiative

[Challenges] ─ technological availability, farmers' awareness & training
  (9) recent farmers' radio

  ─ farmers' incentive unavailable.
    (9) MSP regime.

  problem of water scarcity in Punjab, tamil nadu

[Way forward] ─ consensus based approach in farmers & govt.

  ─ funding for tech. adoption, strengthen rural SHG.

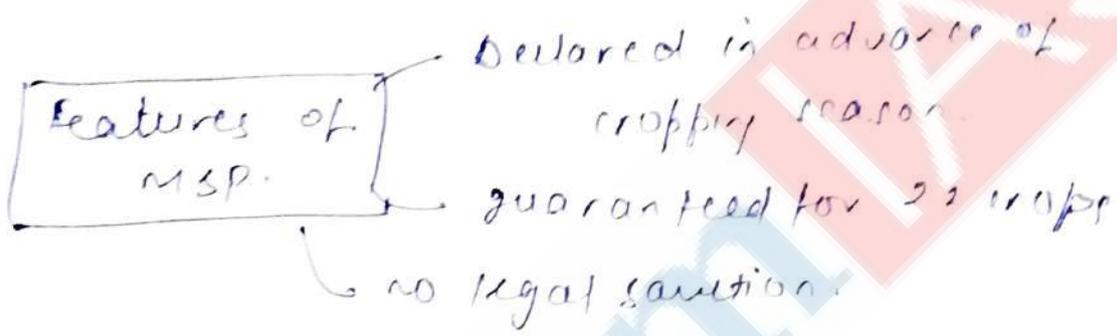Here, aquaculture may have power to solve India's agriculture woes, need is of government's push.

Q.14) The MSP ... led to market distortions and ecological stress, necessitating reforms to make it more inclusive and efficient. Examine (15 marks, 250 words)

MSP प्रणाली, हालांकि अच्छी नीयत से बनाई गई है, लेकिन इसने बाजार में विकृतियां और पारिस्थितिकी तनाव पैदा किया है, जिससे इसे और अधिक समावेशी और कुशल बनाने के लिए सुधारों की आवश्यकता है। परीक्षण कीजिए। (15 अंक, 250 शब्द)

Minimum Support Price (MSP) system is system in which government declares a minimum floor price at which farmers can sell their produce to govt.

Features of MSP.
- Declared in advance of cropping season.
- guaranteed for 23 crops
- no legal sanction.

Importance of MSP.

1. Guarantees farmers' basic income.
   A 2+FL formula guarantees income

2. Helps prevent exploitation of farmers in internal market.
   - govt. mandi procurement.

3. Helps in crop planning
   q. MSP is announced in advance

4. Boosts farmers welfare and income security.

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Issues with MSP :-

① Market distortions
  [⌐ crowding out of private buyers
  [ill discovery of real price

② Inequitable ⌐ only 6% farmers avail
  [MSP   - Agri. Ministry.
  skewed in favour
    of north western farmers

③ Violates WTO norms.

④ Problem of rice-wheat domination,
    leads to scarcity of other crops
      ⤷ oil seeds

⑤ Ecological stress due to MSP :-

  — water table depletion due to unscientific
    crops ⤷ sugarcane in drought
              prone maharashtra (FRP)

  — problem of excessive fertilizer to boost
    single crop production

  — mono cropping challenge - massive production
                                  of rice

  — Issue of declining soil fertility.

      ⤷ Punjab & Haryana.

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(i). Ending open ended procurement of rice and wheat.

(ii). Direct benefit transfers via DBT to prevent exploitation.

(c) Diversify MSP:
- include millets to boost its production.
- rationalise current MSP of rice.

(d). 45% rise from 2014 to 2024.

(e). MSP is a bandaid not a permanent solution.
- doubling farmers income.
- move to high value horticulture crops.
- 10% land but 20% agri GVA.

- use oilseeds production to cater nutritional security challenge.

(f) MSP to be rationalised to balance regional development - area specific MSP according to climatic conditions.

Hence, MSP is a tool that is much misused but needs to be improved.

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Q 15) Biotechnology holds immense potential for achieving sustainable food production, efficient waste management and significant advancements in human health. Elucidate. (15 marks, 250 words)

जैव प्रौद्योगिकी में टिकाऊ खाद्य उत्पादन, कुशल अपशिष्ट प्रबंधन और मानव स्वास्थ्य में महत्वपूर्ण प्रगति हासिल करने की अपार संभावनाएं है। स्पष्ट कीजिए।
(15 अंक, 250 शब्द)

"Every 1 out of 13 startups in India is in Biotechnological domain."

— PM Modi

Biotechnology is technique of altering organic elements for diversified uses like disease correction and improving productivity.

Significance of biotechnology in :-

① Food production.

- Improving productivity via Genetically modified crops (GM crop).
  (a) Golden rice

- pest resistant varieties via GM ⑨
  Bt cotton against bollworm

→ nutritional security via Bt-brinjal and food fortification

→ improving farmers' well being
  (a) shetkari sangattan's support to GM crop

(2) Waste management +

- decomposing waste using microbes
- preventing ill effects of toxic waste
- ⤷ Oilivorous bacteria eat oil.
- disintegrating waste into energy using biofertilizers, biodecomposers like rhizobium, fungus.

- Pyrolysis process, biogas creation

(3) human health improvement.

a) Medicinal field.
   - cancer therapy using Car T-cell
   - treating genetic disease via Crispr Cas 9.
   - disease diagnosis
   - ⤷ epigenetics and DNA fingerprinting

b) Disease prevention
   - using gene drive technology

c) Infertility - mitochondrial gene DNA transplant, IVF

d) helps in improving nutritional health.
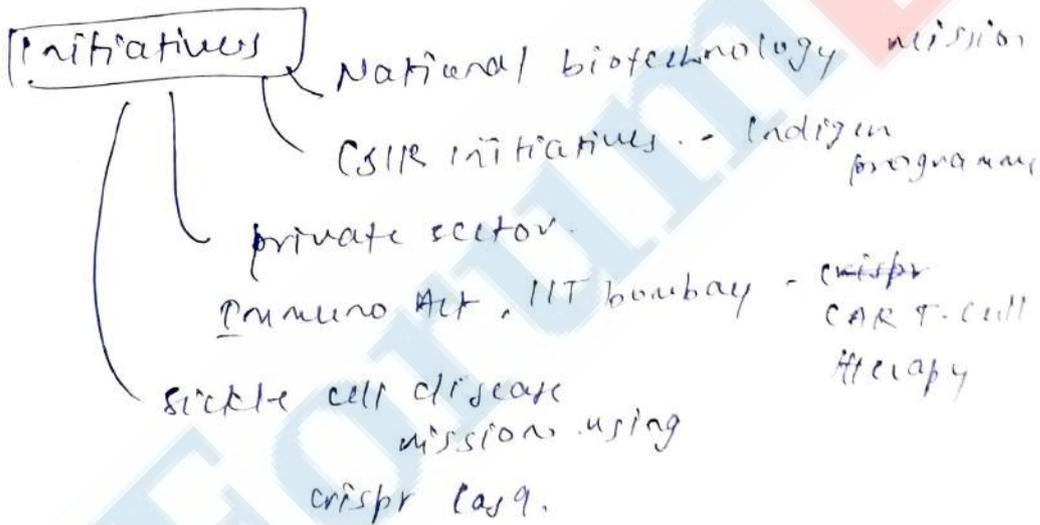   - ⤷ Neutraceutical, Ozempic medicine

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Other uses of biotechnology.

- Improving our understanding of our biodiversity.

- Genome profiling eg Human Genome project.

- bringing back extinct species.
  eg Nicobar pigeon → dodo.

- criminology ↙ NAFIS - fingerprint analysis by Punjab police

[Initiatives] — National biotechnology mission
          — CSIR initiatives. - Indigen programme
          — private sector.
Immuno Act. IIT bombay - crispr CAR T-cell therapy
          — sickle cell disease mission using crispr cas9.

Hence, biotechnology holds immense potential but we must be vary of the consequences too., using govt & private push we can harness this novel technology.

Q 1(a) Climate change is leading to significant alterations in ecosystems, resulting in cascading effects on biodiversity, ecosystem services, and human livelihoods, necessitating integrated approaches to conservation and climate adaptation. Analyse.

(15 marks, 250 words)

जलवायु परिवर्तन के कारण पारिस्थितिकी तंत्र में महत्वपूर्ण परिवर्तन हो रहे हैं, जिसके परिणामस्वरूप जैव विविधता, पारिस्थितिकी तंत्र सेवाओं और मानव आजीविका पर व्यापक प्रभाव पड़ रहा है, जिसके कारण संरक्षण और जलवायु अनुकूलन के लिए एकीकृत दृष्टिकोण की आवश्यकता है। विश्लेषण कीजिए।

(15 अंक, 250 शब्द)

As per IPCC's 6th AR, with current level of emissions, earth will warm up by 3°C by end of century.

Multidimensional impact of climate change

① On ecosystems.

a). melting of glaciers & ice caps

→ IPCC states @ 3°C heating 50% himalayan glaciers will vanish.

b). Coastal ecosystem.

↳ rise in sea level.

coral bleaching (increase in freshwater)

c). Tropicalisation of boreal forests and Borealisation of polar regions.

d). Issue of increased warming in climate

② On **biodiversity**

a). extinction of ~70% species with increase in temperature.

— IUCN's report

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b. Issue of glacial species.

(4) → polar bears getting shrunk - loss of prey

1). Exodus of migratory species
→ Siberian crane in Rajasthan.

② On ecosystem services
↳ declining productivity of trees and rainforests.
• availability of fish catch in ocean
• declining forest produce.

④ On livelihood
- radical shift in livelihood pattern.
- unhabitableness of Africa & Arabian deserts will increase.
- agriculturable lands in Russia & canada will emerge.
- coastal submersion
↳ malaysia, Tuvalu and Maldives at forefront
(issue of rehabilitation)
- problem of food security.
- increasing energy consumption to cool down temperatures

... improve cost of dairy business in India.

Suggestions for adaptation:

- Climate smart agriculture with aid of ICT.
- Green buildings ⟨e.g.⟩ BEE's code, Blue Dot network
- Green industries reducing climate vulnerability

for mitigation

- collaborative approach - Paris principles, Kigali amendment

- Decarbonify industries in India ⟨e.g.⟩ lead it 2.0.

growing millets.

13% Agriculture's ← reducing methane level ⟨e.g.⟩ Lokur committee on stubble burning
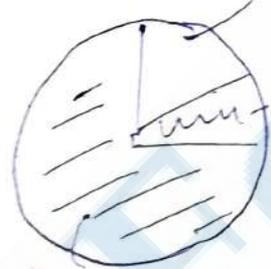
75% Greenhouse emissions from energy generation (NITI Aayog)

→ green energy, push for renewables.

↳ 20% installed capacity of solar energy @ SS44. (MNRE)

Hence, SDG ⑬ Climate change can be achieved only with collaboration of all

Q.17) Urban areas, often referred to as the cradle of civilization and growth engines, are increasingly experiencing various natural and man-made disasters. Discuss in the Indian context. Also, suggest suitable mitigation and management strategies.

(15 marks, 250 words)

शहरी क्षेत्रों को अक्सर सभ्यता और विकास के इंजन के रूप में संदर्भित किया जाता है, जो विभिन्न प्राकृतिक और मानव निर्मित आपदाओं का सामना कर रहे हैं। भारतीय संदर्भ में चर्चा कीजिए। साथ ही, उपयुक्त शमन और प्रबंधन रणनीतियों का सुझाव दीजिए।

(15 अंक, 250 शब्द)

Close to 37% of India lives in city and generates around 65% of economic output. Recently, it has become a hotbed of disasters.

(Census)
↓
Economic survey.

cities as growth engine {
- Gurugram — IT hub
- Bangalore
- Mumbai — financial capital
- Chennai — medical tourism
}

cities facing disasters {
- Floods in Delhi
- Mumbai floods in each monsoon
- drought in Bengaluru & Chennai
}
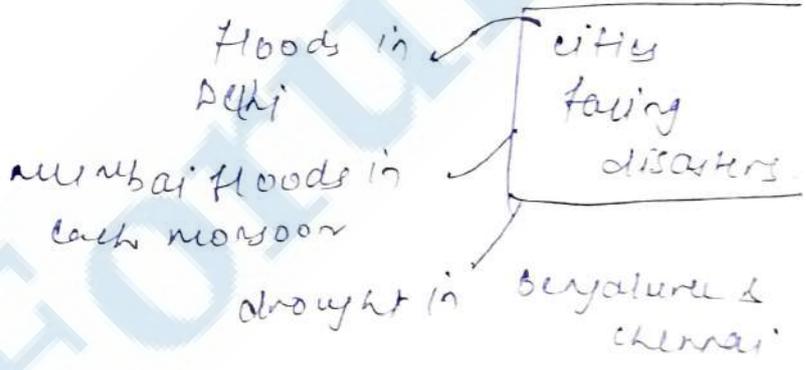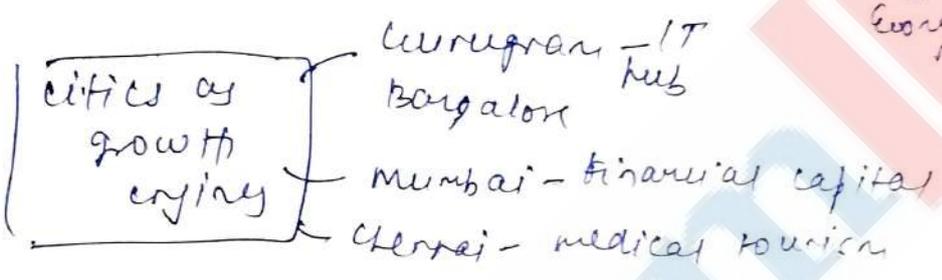
Reasons for increasing disaster challenges:-

① Natural reason

- Climate change — increasing temperature → heat island effect
  → drought like condition

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- Cyclic - ... ~ water woes in mahar,
 -ashtra.

- Wildfires - issues in Uttarakhand.

② [Anthropogenic reasons]

- Rapid urbanisation ~ urban sprawl.
  [ineffective waste management
  [unscientific city planning

- lack of green space - to allow water
  seepage.

- declining groundwater - over consumption
  - easements Act.

  → Delhi water riots
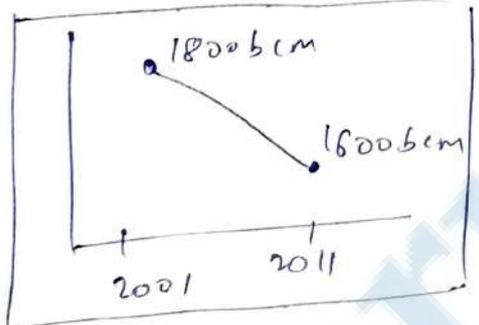
ground water level.
(min of Jal
shakti)

- problem of awareness in
  [consertization   planning
  of roads
  archaic city infrastructure

unscientific waste
planning
[blockage of drains
[floods   20% treated
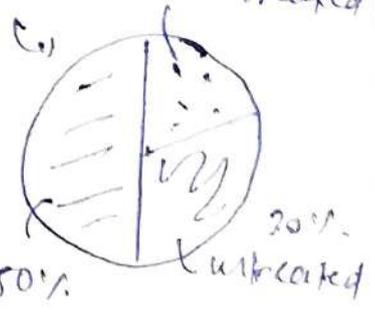
50%
goes to
landfill
(ULB data)

Suggestions & solutions

(A) City planning

- Chandigarh model, Delhi city plan 2047
- hub and spoke model, using electric vehicles

(B) Green space

- Sponge city of China
- Sister city projects
  - ➡ Mumbai - Guangzhou

(C) Building technology

- reduce glass usage
- limestone technology
- using white cement ($\uparrow$ albedo) $\downarrow$ heating.

(D) sensitizing - urban local empowering → bodies

- $\uparrow$ financing
  - ➡ 30 - 40% spending by local bodies in Kerala
- capacity building
  - ➡ waste management → waste to energy plants

Hence, sustainably industrialisation will make us achieve SDG ⑫.

Q.18) "India's disaster management framework has made significant progress in the 21st century, yet challenges persist in ensuring timely response and effective coordination during crises." Comment.

(15 marks, 250 words)

'भारत के आपदा प्रबंधन ढांचे ने 21वीं सदी में महत्वपूर्ण प्रगति की है, फिर भी संकट के दौरान समय पर प्रतिक्रिया और प्रभावी समन्वय सुनिश्चित करने में चुनौतियां बनी हुई हैं।' टिप्पणी कीजिए।

(15 अंक, 250 शब्द)

India is one of the top three disaster prone countries.
— UNDRR report

India's disaster management framework.

- Disaster management Act 2005
  ↳ NDMA at union level
  SDMA at state level
  DDMA at local level

- National Disaster management plan
  ↳ Flood commission
  ↳ city action plans

- Usage of commission & departments
  India meteorological deptt. (IMD)
  ISRO ④ landslide atlas.

- International ↳ Sendai framework
  ↳ CDRI
  ↳ IRIS
  ↳ Indian ocean region cyclone protection (IOR)

challenges still prevail.

in timely response

- lack of preparedness at local level
  └ availability of skilled personnel.
- awareness in people.
- lack of preparedness measures
  ⟼ shelter homes, relief packets
- issue of information dissemination
  ⟼ infrastructural issue in far flug
     area ~51% villages still get
              <12 hr. of electricity
                        (NITI Ayog)

in coordination

NDMA & SDMA & DDMA
  └ - - → - - ┘ └ → ┘

- lack of coordination
- jurisdictional
  ambiguities
- blame game
  ⟼ recent Kerala
     Wayanad landslide

- lack of
  funding &
  devolution
- problem of
  information
  dissemination
- DDMA at forefront
  of disaster, yet last
  to be consulted in policy
              matters.

- [...] district & state specific
  disaster plan,
  evacuation plan. } → haphazard planning

- Coordination issue between
  BDO & sarpanches → ego clashes

- Coordination issues with agency like
  ISRO and IMD.

[Suggestions]:-

- Boost timely response
  [→ mock drills, volunteer
      capacity building
    → involve CSOs, NGOs

  adopt international best
  practice (eg) Siren system of
  malaysia.

- Improving coordination
  [→ clear delineation of roles &
      responsibilities.

  Better communication in personnel

  one stop portal for information
  dissemination - IMD + ISRO + NDMA
                              etc.

Hence, disaster management needs
support of all for security of all.

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Q.19) Explain how the symbiotic relationship between organized crime and terrorism further aggravates internal security concerns. What steps can be taken to address this linkage and the threats emerging from it?

(15 marks, 250 words)

बताइए कि संगठित अपराध और आतंकवाद के बीच सहजीवी संबंध किस तरह आंतरिक सुरक्षा संबंधी चिंताओं को और बढ़ाता है। इस संबंध और इससे उत्पन्न होने वाले खतरों से निपटने के लिए क्या कदम उठाए जा सकते हैं?

(15 अंक, 250 शब्द)

The symbiotic relationship is one in which, a parasite host and a client both are mutually beneficial to each other.

But, the symbiosis between organized crime (OC) and terrorism is a parasite for India. — ~1700 terror incident in last 10 yrs — (Defense mi.)

[Symbiotic relation of OC and terrorism]

OC ⟶ terrorism
- provides funding
- acts as a screen for the illicit activities
    eg extortion, trafficking.
- provides valuable groundlevel information
eg D-company to let in mumbai attacks.

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Terrorism ⟶ OL

- Provide external support
- Helps in recruitment
- acts as a funnel
👁 Taliban and drug smuggling via Iran to Punjab.

- It is called <u>Black hole syndrome</u>

Terrorism rising security OL

challenge

extremism

counterfeit currency and arms from Nepal by ISI

drugs

drug smuggling from golden triangle

- Human trafficking issues
(every 8 minutes 1 child goes missing - NCRB)

coastal terrorism 26/11

ISIS recruits of Kerala

- Drugs issues
👁 41% drug consumers below 30 years of age - UNODC

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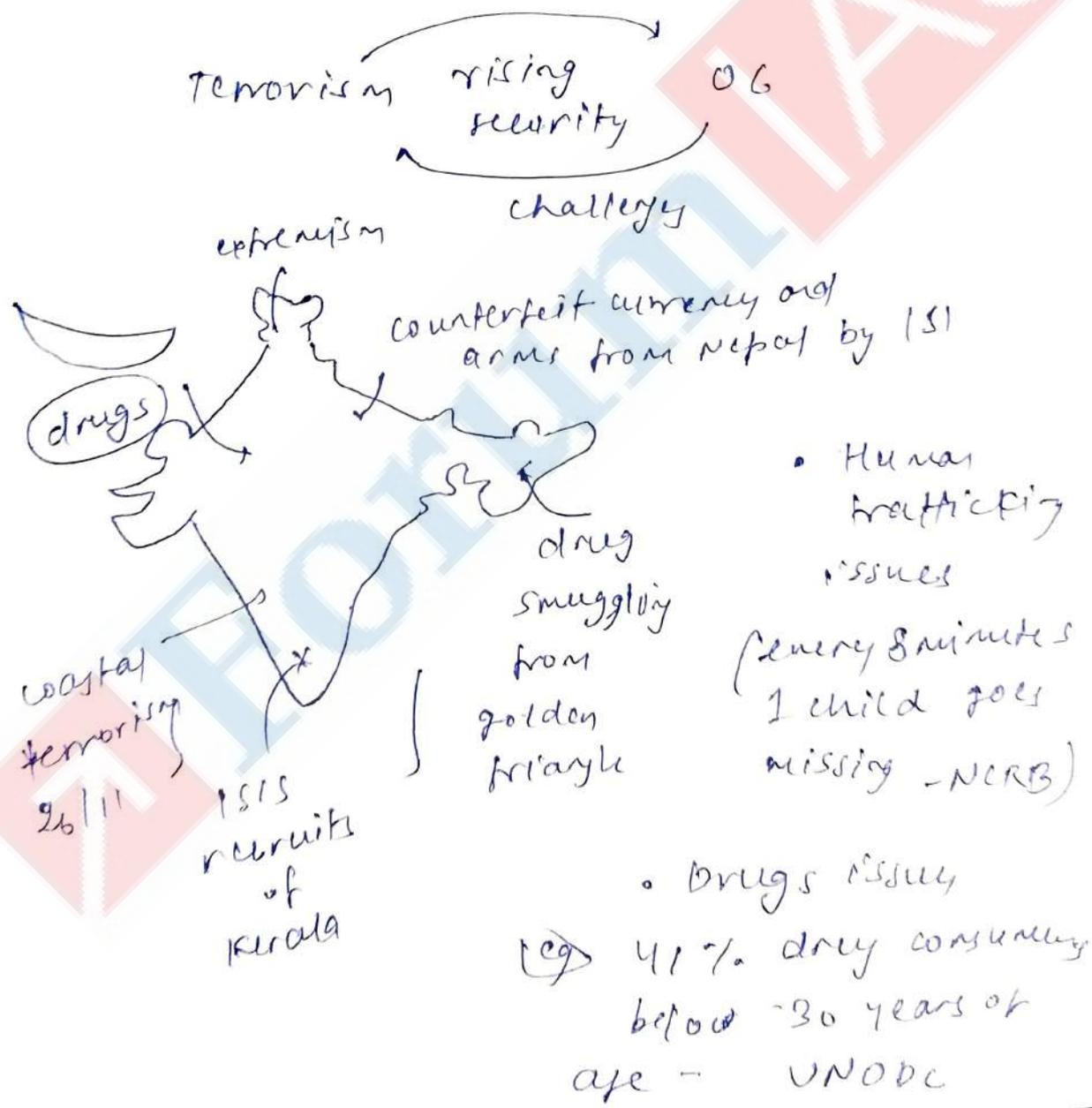
Steps to reduce & mitigate the linkage:-

(1) Break the nexus of politician (Vohra committee)

Bureaucrat ——— criminal

└ aids in drug peddling

(2) Stricter law enforcement.

[└ free hand to CBI, NIA and CBIC

NDPS laws to be strengthened.

(↳) Operation chakra by DRI

(3) Strengthening ground level police force

└ └ capacity building

└ vacancy filling

(↳) 1900 policemen per million pop. UN recommend 2200.

(4) public participation

└ citizen connect initiatives

(↳) eyes & ear initiative in Delhi

CSOs

NGO rope in
for rehabilitation

Hence, the nexus is becoming a nectar of poison which needs to be curbed. with collaborated efforts.

Q.20) Strengthening security apparatus in border areas and forging developmental partnerships with the locals are essential components of a robust and effective border management strategy. Discuss, with initiatives taken by the government in this regard. (15 marks, 250 words)

सीमावर्ती क्षेत्रों में सुरक्षा तंत्र को मजबूत करना तथा स्थानीय लोगों के साथ विकासात्मक साझेदारी बनाना एक मजबूत और प्रभावी सीमा प्रबंधन रणनीति के आवश्यक घटक हैं। इस संबंध में सरकार द्वारा उठाए गए प्रयासों के साथ चर्चा कीजिए। (15 अंक, 250 शब्द)

Recent Reasi attacks were a stark reminder of border security issues plaguing the nation.

Security issues   multidimensional
in border areas :-   concerns

infiltration — chinese
            Open borders with Nepal.
                        Naga
                        Insurgents
tunnels
across   rohingya
borders.   refugees
            cattle
            smuggling

            srilankan
            tamils
            intrusion
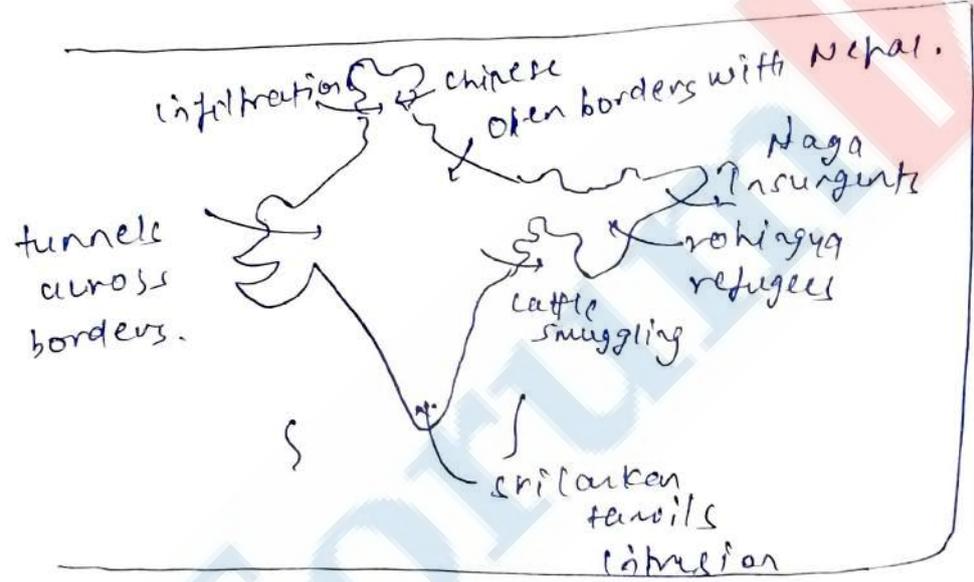
Strengthening security apparatus.

• Border security Force
• Indo tibetan Border police
• Naval coast guards
    ↳ Sagar Prahari Bal.

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Assam Rifles and Indian Army.

Partnership with locals :-

- Necessary to win local trust
- legitimise Indian rule.,
  indianization of people, preventing
  terror recruitments

  😊 Burhan wani used Tiktok to
  attract insurgents.

Government initiatives

- fostering local partnership.
  - Nai Roshini - North east development
  - Himayat - Kashmiri students development
- Initiatives like Border Area Development
  programs
- Bharat Jodo initiative - school
  children to visit border villages
- sensitizing locals about their contribution
  to national security.
- Gesture - PM Modi's visit to
  frontline
  boost confidence.

improving border area infrastructure.
Atal tunnel, Ditto bridge, Δ Lola
sadiya bridge

- ramping up infrastructure on chinese
  border.
- boosting capacity with security forces
  ↳ Agniveer scheme
- Better surveillance equipments
  ├ Drone surveillance
  ├ Helium balloons and using
  │ High altitude gliders
  └ fencing of borders - lighting
- ending free movement regime (FMR)
  with myanmar.

Hence, India is well prepared to cater
its internal security challenges

Feedback
(For OFFICE use

.	©	A	
AWIS			
CD & VA			
S & F			
P & R			

Please put tick
marks in the above
table.
Here G is Good, A is
Average and P is
Poor.

TOTAL MARKS	

50

Mentor Feedback Questions

1 ....

2 ....

3 ....

4 ....

5 ....

Test Goal		Outcomes
1 .... □		....
2 .... □		....
3 .... □		....

Marking Scheme

Mark	Good	Average	Below average
10 Marker	3.75 – 5.0	3.0 – 3.5	< 3.0
15 Marker	5.75 – 7.0	4.0 – 5.5	< 4.0
20 Marker	7.75 – 10	6 – 7.5	< 6
✔✔	Key / Relevant Point		
✖	Vague / Irrelevant		

* Subject to change without prior notice.