

TEST CODE 7 1 3 3 0 4

MGP 2024

311554 713304 1910159463 (2024-09-11 21:36:49)

Time Allowed : Three Hours

समय : तीन घंटे

ForumIAS

Maximum Marks : 250

अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	BIPUL GUPTA		
Roll No./अनुक्रमांक	1910159463	Medium/माध्यम	English ☒ हिंदी ☐
Center Code/परीक्षा केंद्र	1900	Date/दिनांक	11/09/24

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

INDEX TABLE / अनुक्रमणिका

INSTRUCTION / अनुदेश

Q. No. प्र.सं.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक
1		
2		
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7		
8		
9		
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11		
12		
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20		
Total/कुल अंक	250	

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।

2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory.

उत्तर पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।

3. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।

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.

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।

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.

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।

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Examiner's Discretion/मूल्यांकन कर्ता का विवेक :

Start Time/प्रारंभ करने का समय :

End Time/समाप्त करने का समय :

Total Marks/कुल अंक :

Mode Of Examination/
परीक्षा की विधि :

Online/ऑनलाइन



Offline/ऑफलाइन



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

ECN CODE/
ईसीएन कोड :

EG/ईजी :

① ② ③ ④ ⑤

Evaluation Date/
मूल्यांकन तिथि :

Note: Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion classes the tests are also available online in your portal to aid in your preparation. Further, students are requested to see the copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and means to improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

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 in the first place. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjectivity of the examiner.
2. **CD & VA = Content Density & Value Addition.** Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit or space limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of (but not all!) suggestions, 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 sub-parts or not. 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)

The conclusion of FTA with UAE, EFTA and Australia along with renegotiation with ASEAN marks a renewed push to FTA.

Reasons for the above.

I. Economic factors

- ① Boost exports of domestic goods and services
 $\rightarrow$ ~2% merchandise import share
- ② Increased integration with global markets.
- ③ Increased FDI flows.

of investment clause in India - EFTA
FTA.

- ④ Make up for making out of ACFT, CPTPP.
- ⑤ correct lopsided trade benefits
of recent steel import surge from nickel

II. geopolitical factors

- ① Trends of de-globalisation lead to individual FTAs.
eg US - China trade war 2018-23.
- ② part of strategic choices. eg India - VAE
FTA synergies with I2V2.
- ③ Brexit leading to individual FTA,
discussions with EU, Britain.

India must ensure fair market access,
gradual opening and import surge mechanism
in these FTAs.

#	©
AWIS	
CD & VA	
S & F	
P & R	
Please put tick marks in the table.	
Here G is Good, Average and Poor.	
TOTAL MARKS	

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)

The crisis of Pakistan, Sri Lanka highlight the dangers of ill-conceived fiscal policies

Feature of well designed fiscal policy

socio-economic welfare.

① manageable fiscal deficit.

→ controlled inflation

→ reduced borrowing costs.

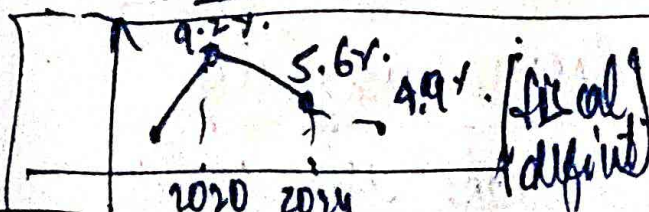
→ better credit rating (BBB- (Fitch).

reduced corruption
less based inequality

affordable prices (5.7% inflation) in FY 23

increased welfare spending

improved social security 91.67% index NFSA



② ~~best~~ synergy
with monetary
policy.

→ better ^{financial} loans disbursement
(NABARD: 40% farmers
depend on informal loans).

→ better inflation control

③ prudent spending
in critical areas

→ 11.11 lakh crore infra-
structure spending in
2024.

→ multiple effects boosting
growth
(8.2% GDP growth).

④ decentralisation of
finances

→ 15th FC recommended

40% untied funds to ULB/PRI.

→ bottom up equitable
growth

→ Moshera solar village
success model.

Hence, policies such as outcome budgeting
and quality budgeting must take the center
to achieve ^{DESA} ~~SDG~~ article 38 (social welfare)

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)

India is reliant for nearly 60-65% of palm oil ~~imports~~ needs on imports.

Reasons for the import dependency.

① Lack of domestic cultivation of edible oils.



AP, Telangana
palm oil producing areas.

② Cheap plantation and production of palm oil etc. in SE Asia.

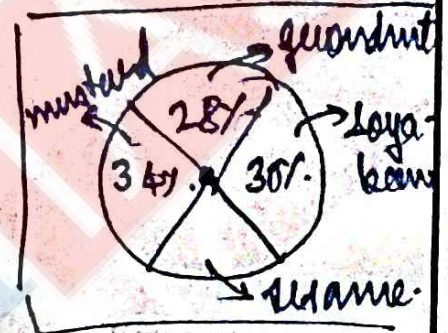
③ Lack of climatic conditions for crops like safflower oil.

④ Rice, wheat not disincentivizing for oilseed production

⑤ large domestic demand $\rightarrow$ to 16% of
monies population

⑥ oil based Indian diets. eg/ Puri, Lachha
etc.

⑦ Conversion to biofuels
(20% diverted).



Way forward.

① Explore new areas for cultivation



areas identified by
NMFO - OP for palm
oil cultivation

② Upgrade PM-APHA, Price efficiency
scheme for income security of farmers

③ Introduce GM crops eg/ DMH-11 mustard

④ Contract based oilseed farming

India needs an oilseed revolution 2.0

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 संकट 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)

NITI Aayog predicts 50% water demand to be met by 2030, signalling impending water crisis. Agriculture consumes 89% groundwater, which makes it ~~the~~ critical to reduce water demand.

Microirrigation as a solution

- 1) Reduced water demand up to 70% in drip irrigation.
- 2) 230% higher productivity in drip irrigation.
- 3) Reduced groundwater demand.

1727. - water-entitlements state in Punjab.

① Reduced salt salinisation.

The govt. has taken steps like PM-KSY, however the adoption remains underwhelming due to :-

- ① harmful subsidies. - eg/ 100% free electricity in Punjab.
- ② high capital investment
- ③ Lack of credit availability with farmers (NABARD : 40% depend on informal loan)
- ④ limited adoption in Rajasthan, Gujarat and parts of South India.
- ⑤ Lack of farmer awareness
curbing harmful subsidies, integration with PM-KISAN and concessional loans are needed to replicate the Israeli success model.

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

a number of accidents ranging Balrampur train accident 2023 to Kanshunjunga express crash has brought railway safety to the forefront.

Challenges around railway safety

① safety → lack of safety personnel following.
eg) Nijaynagar train accident 2023

→ delayed KAVACH installations

② undercapacity → overburdened trains.
→ 98.1% operating ratio make operations difficult

③ Lacks modernization → eg) KAVACH is inferior to EMPS (European).

The national rail plan aims to increase railways modal share to 45% and the above challenges must be overcome through:-

① Technological approach

- IT-K4P designed blockchain based signaling system.
- clear decision to proceed with KAVACH or EMPS.

② Administrative support

- ~~not~~ separate Railway regulatory authority - (Birek Debroy comm).
- reduced work hours of loco pilots.

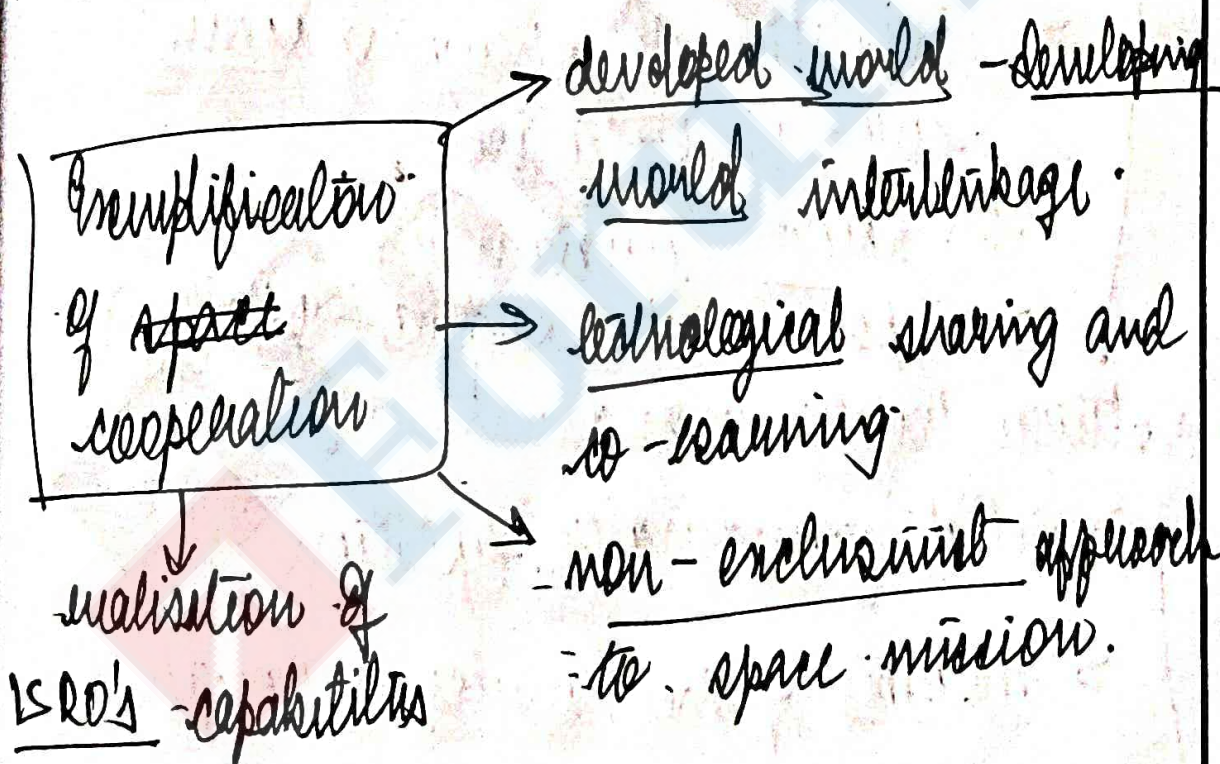
In addition, the Makodeskar committee recommendations of separate Railway safety authority is the need of the hour.

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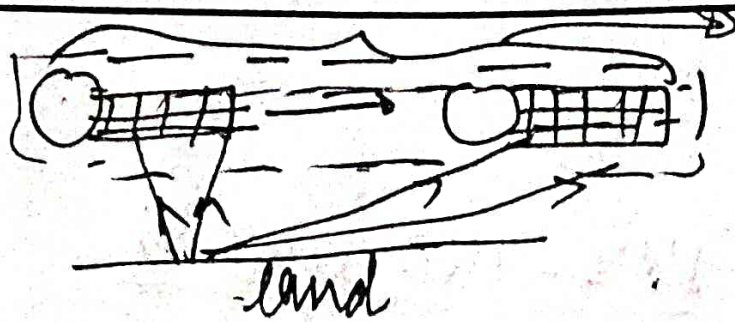
Q.6) How does NISAR mission exemplify international cooperation in space exploration and scientific research? In what ways will it help in climate change monitoring and natural hazard management? (10 marks, 150 words)

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 अंक, 150 शब्द)

The NISAR or NASA-ISRO, synthetic aperture radar is a joint collaboration to launch satellite for exploration and research.



Working → synthetic aperture is created as a result of movement.



wide aperture
created by
satellite's
movement.

Role is it will play

I. climate change monitoring

→ study glacier icecaps melting

→ insights into changing ocean
current patterns

eg) AMOC weakening -

→ supplement other satellite (eg Nimbus)
(SAT)

II. Natural hazard management

→ detect groundwater depletion

→ detection of heat waves through
IR mapping

→ ~~predict~~ cyclone movement ~~study~~

this approach stands as a template for other
missions in the field of space.

7) Nuclear Technology and Food security and agricultural sustainability. Discuss. (10 marks, 150 words)

माणु प्रौद्योगिकी खाद्य सुरक्षा और कृषि स्थिरता को बढ़ाने में एक परिवर्तनकारी भूमिका निभा सकती है। चर्चा कीजिए। (10 अंक, 150 शब्द)

Nuclear Technology is based on fission and fusion (mostly fission) of radioactive atoms like ${}_{92}^{235}\text{U}$.

although predominantly discussed in the sphere of energy, security, nuclear energy can play a role in food security in following ways): -

- ① creation of mutated seeds through radioactive X, γ rays irradiation
- ⇒ BARC recently came up with superior variety of sub-seeds.

② usage of γ -ray irradiation technology

- increased shelf life of food.
(AVIT: India ~~lost~~ 90,000 Cr due to food wastage)
- help in food processing sector
↳ <10% agriculture produce is processed.

③ Role of nuclear energy in agriculture

- stable source for backup during downtime of renewables
- micro-reactors to power operations in large farms.
eg) Neutrapower experiments (USA).

However, the radiation leakage and explosion challenges need to be addressed comprehensively.

Feed
OFFICE
AWIS
CD & VA
S & F
P & R
Please put marks in the table.
Here G is the Average and Poor.
TOTAL MARKS

311554 713304 1910159463 (2024-09-11 21:36:49)
3) 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)

जंगल की आग की बढ़ती आवृत्ति स्थायी वन प्रबंधन प्रथाओं की तत्काल आवश्यकता को रेखांकित करती है। इस न 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)

The ISFR 2021 report highlighted that (27.27%) Indian forests are prone to forest fires.

causes behind fires

I. Natural

① dry summers causing fires.
eg. regular fires in deciduous forests of East India.

② friction b/w trees

③ lightning induced fires

II Manmade → gum cultivation
→ forest clearance

es/ Bamyl-dragon-pilus 2020 started
by farmers.

Impact of forest fires

Ecological → loss of forest cover
→ dragon shrinking
→ CO₂ mission
→ biodiversity loss

social → local tribals affected
→ disturbance mid-pus 2021
→ in forest abandings

Economic → under ecosystem services
→ cost of fire control

Measures for prevention → create fire breaks
→ 20:20 prevention: margin
→ formula by CN
→ local dwellers involvement

A comprehensive multi-stakeholder approach
is needed.

1) What strategies can be adopted to counter the rising violence in Jammu and Kashmir? (10 marks, 150 words)

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

The districts of Reasi & Rajouri Poonch of Jammu has registered an uptick in terror incidents like Reasi Pilgrim attacks - 2024.

Reasons for the above

① reduced security forces

↳ guarding battalion was shifted to LAC border.

② instability in Azad Kashmir

③ rise of TTP and other groups in bordering areas

④ complex hilly geography of region

⑤. state sponsored terrorism by Pakistan

~~step~~ Counter strategies

I. security strengthening

① re-deployment of security forces in region.

② increased co-ordination b/w BCF and INA.

II. locals involvement

① local spies approach.

↳ utilise Bakawals and Gujjars

② Implement VDC (dipmer guards) in troubled areas.

- This phenomenon highlights terrorism takes path of least resistance and calls for fluid response from armed forces.

10) In the light of recent reports on the threat posed by 'Cyber slavery' on internal security of India. (10 marks, 150 words)

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

The recent cambodian cyber slavery marquet exposure has added a new dimension of complexity in cyber security.

Implications

- ① Dimension of Indian youths in the sphere of service:
(65% in the working age group)
- ② potential leakages of personal information
↳ data of 55% Indians available in dark net.

- ③ compromised critical information
infrastructure
ex. unbearable power outage 2020
 - ④ May provide sums to extremist
groups like ULFA.
 - ⑤ May aid in money laundering.
(2-5%) global GDP (annual IMF).
- Away forward

- ① vigilance by parents to detect
- cyber slavery.
- ② MLAT with links like Cambodia.
India ranks 10th in cyber security threat
index and must step up its engagement.

3115547133041910159463 (2024-09-11 21:35:49)
1) "The liberalization policies of 1991 significantly enhanced India's economic dynamism, but the living global and domestic landscape necessitates 'Reforms 2.0' for sustained economic development and prosperity." Comment.
(15 marks, 250 words)

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

The 1991 reforms in the backdrop of BoP crisis and gulf war were a landmark step and boosted economic dynamism through:-

- ① entry of foreign players eg) Coca Cola
- ② domestic - foreign partnership eg) Hero-Motors
- ③ boosted per capita income

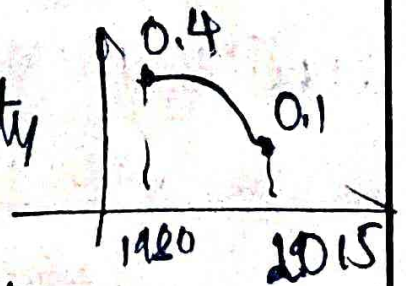
2000	\$450	(WB)
2023	\$2484	
- ④ booming Indian exports eg) rise of India's pharmaceutical sector.

However, the global landscape sees new changes such as:-

- ① fall of multilateral institutions
eg) dysfunction - WTO appellate body
- ② Economic fragmentation
eg) 'friend-shoring' concept by USA
- ③ Rise of protectionism.

In addition a change in domestic landscape
can be seen through:-

- ① 65% working age population.
- ② - Fall of employment elasticity
- ③ only 15% share of manufacturing
in GDP.



- ④ Panchsheel goals for green energy.

This calls for a need to implement
reforms 2.0

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Reforms 2.0

① Focus on manufacturing jobs creation

→ christianisation investment model for job intensive sectors like food processing

→ come up with new industrial policy

② cutting real tax ex) Jan-Nishank act 2023.

③ Banking sector reforms

→ Bank investment company (AT Waqar Institute)
→ <50% share on PSB

In addition, a decentralised approach is needed as India enters demerit Laal.

Feedback

(For OFFICE use only)

	G	A	P
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	
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Q.12) 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)

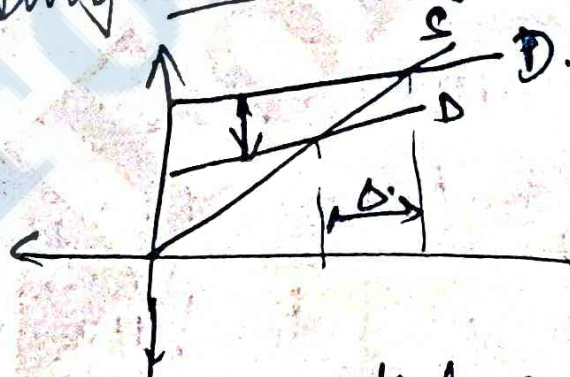
बुनियादी ढांचे का विकास न केवल आर्थिक परिवर्तन के लिए बल्कि सतत विकास और सामाजिक कल्याण के लिए भी आवश्यक है। उदाहरणों के साथ विस्तार से समझाइए। (15 अंक, 250 शब्द)

The ₹1.1 lakh crore spending on infrastructure in Budget 2024 marks the push by government towards infrastructure led growth.



Role in economic transformation

① Boosting GDP through multiplier effect.



(multiplier effect in GDP growth)

② Resounding in effect of investment.

↳ China's ~~SEZ~~ growth model.

③ Robust economic connectivity.

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eg) Japan's Shikasen success model.

Role in sustainable development

① creation of green infrastructure for achieving SDG-7 (clean energy).

eg) Bhakra solar plant (largest)

② increased access to sanitation to achieve SDG-6 (clean water & sanitation)

eg) Gal Green mission success model.

③ Foster human development through education infrastructure (SDG-4).

eg) PM-eVidya: digital infrastructure.

④ boost population health

eg) Tamil Nadu robust public health model.

- ⑤ Infrastructure to protect local wildlife
- eg/ M-Stops: monitoring infrastructure before
 - achieve 1x2 target in advance.

Role in societal well-being

- ① Improved ease of living
- eg/ PM-ASU: rural roads connectivity.
- ② Reduced inequalities - ~~not~~ due to public good nature
- eg/ anyone can use roads etc.
- ③ Better service delivery
- eg/ DBT and JAM built based on PFMS infrastructure.

This calls for an investment-led growth ~~model~~ and the current push momentum to be sustained.

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3) Bring out the significance of aquaculture towards nutrition security, livelihood generation, and economic growth. Also, mention various measures taken by the government to promote aquaculture in country. (15 marks, 250 words)

ग सुरक्षा, आजीविका सृजन और आर्थिक विकास के लिए 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)

~~step~~ India is the 2nd largest player in aquaculture, with ~7.5% GVA in agriculture, aquaculture is a critical pillar.

Significance of aquaculture

① Nutrition security

- ① → contains important Ω-3 oils which is absent in Indian diet
- reduced fat and high proteins promote balanced diet.
- (23.5% Indians are obese (NFIHS-5)).

② Livelihood generation

- ~~in~~ local fisherman livelihood creation
- eg/ AP Inland fishery growth model
- employment to woman

③ Economic growth

- boosting export incomes
 - ↳ agricultural sector has (13-14%)
export share
- local economic growth in coastal villages
- eg/ Gujarat ^{coastal} fishery model
- new innovations eg/ aquaponics

Measures taken by government

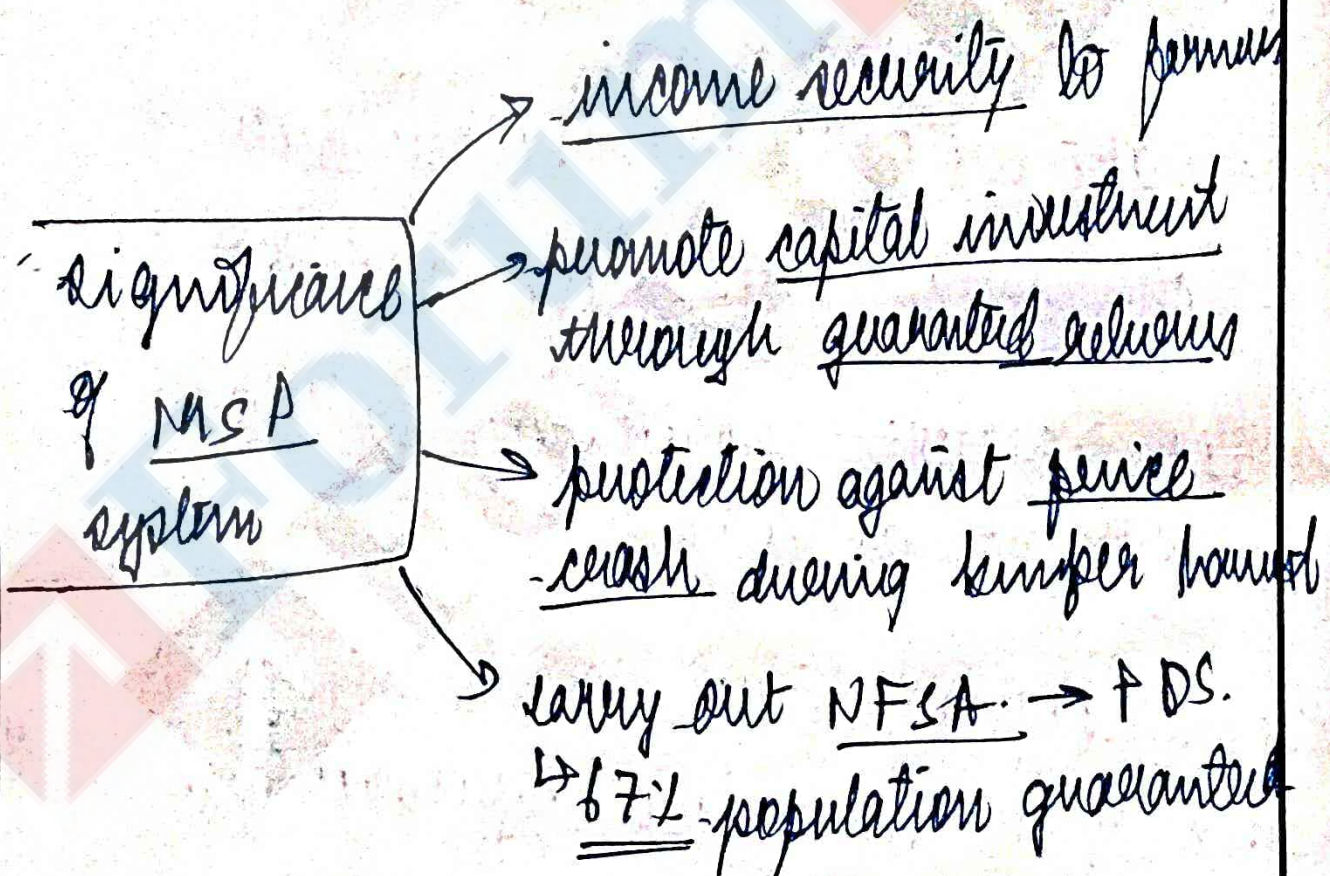
- ① Blue revolution 2.0 → policy support
- fishing harbours
- eg/ Mishkhalpur



Q.14) The MSP system, though well-intentioned, has 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 विकृतियाँ 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)

The MSP system seeks to provide 1.5x guaranteed remuneration to farmers based on (A2+FL) pricing fixed by CACP.



However this well-intentioned step has resulted in the following issues:

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I. Market distortion

- ① over-incentivized rice and wheat production
- ② high mandi fees (8.5% in Punjab) causing distortion
- ③ skewed incentives to cultivate rash crops

II. Ecological stress

- ① heavy groundwater depletion

↳ groundwater extraction rate

Punjab	172%
India	70%

- ② Nutrient-overuse in crops.
eg) Blue baby syndrome from nitrate pollution.

- ③ soil salinisation due to water logging.

Other → ~1% CAP on food security.
→ overgrazing buffers: 90,000 cattle lost yearly (NITI)

this calls for an inclusive and efficient
reform :- this must include :-

① Mandi (APMC) reforms

→ curb state government
monopoly
 → move away from
fragmented approach. } → implement
model
APMC act

② Lesson from ~~per~~ MP pilot project

→ residual amount top up model

↳ $\text{DBT} = (\text{MSP} - \text{market price}) \Rightarrow \text{DBT to farmers}$

③ this top-up scheme can have higher

remuneration based on C2 price (summi
malhar
committee)

④ provide MSP ^{& procure at} for millets, oilseeds etc.

these reforms are critical to achieve the
goal of doubling farmers income.

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

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

Biotechnology seeks to integrate the fruits of advances in biology and genes management to tackle modern challenges.

① Sustainable food production

① Increased productivity of food crops

g) ~ 30% higher productivity of DMH-11 mustard.

② Increased disease resistance of crops

g) Bt. cotton

③ Improved nutritional value of food crops

g) golden rice, rich in vitamin A.

④ Increased abiotic resistance of crops

⑤ Faster ripening to prevent stubble
burning vs Pusa 2040 seeds.

⑥ Increased water demand
(agri. uses 89% groundwater)

④ Efficient waste management

① Bio-enzymes secreted by GM bacteria to
break down organic wastes

② plastic waste management
vs plastic eating bacteria in Japan

③ Biomining of sewage
(CPCB: 33% sewage is not treated)

④ Biomethanation to produce natural
gas from wastes by GM microbes.

⑤ Bio-sterilization to produce biofuel

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from ~~her~~ her mistakes.

III Human Health

- ① new treatment against through gene editing
eg/ Casgeny for sickle cell disorder
- ② cure hereditary diseases.
eg/ ADA deficiency is curable.
- ③ surveillance of possible pathogens
eg/ INSACOG : COVID-19 variant genome sequencing.
- ④ LM animals for human medicine tests
(eg/ CRJ monkeys)
- ⑤ Xenotransplantation eg/ ear on mice.
Human, concerns such as biocontamination
and ethical violation of technology must be
addressed in long run.

Feedback

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Please put tick marks in the above table.

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Q.16) 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)

The IPCC 2021 report predicted that global temperature have risen by 1.09°C , making climate change a new reality.

Impacts of climate change.

① Biodiversity and ecosystem services.

① 6th mass extinction due to temperature change.

↳ 1000: >900 species extinct in last 500 years.

② ocean acidification impacting shell forming organisms

↳ 0.1 pH drop measured.

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③ Loss of ecosystem. (eg) arctic for polar bear

↳ Arctic summer to be ice-free once before 2040 (IPCC)

④ Permafrost thawing eg Volcanic crater.

Impacts on human livelihoods

① submergence of small island states
eg Maldives may cease to exist by 2100

② Reduced agricultural productivity
{ IPCC : 1°C rise will lead to 10-20% yield loss

③ Endangered coastal fishermen
eg gullfish replacing fish due to climate change.

④ Infrastructure loss due to extreme weather

→ Simple cyclone fueled by heatwaves.

In integrated approach b/w nature and humans

① Nature based solutions

→ Swacat method based purification - success

② Bottom up approach → Kenya
climate neutrality target

③ Multilateralism based mitigation.
→ achieving 30 by 30 target.

④ community based adaptation & mitigation
→ seedball movement in Kenya to restore trees.

move fall in line with SDG-13 - climate action.

Feedback

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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)

Making Urban centres as powerhouses of economic growth is a crucial part of SDG - 11 (Sustainable cities)

Natural disasters faced by urban areas

- ① Flooding during heavy rains -
eg. Bareilly flooding 2024.
- ② Impacted by cyclones
eg. Shamshabad by Michang (2023)
- ③ prone to devastating earthquakes
eg. Bhuj earthquakes
- ④ ~~seismic~~ landslides in hilly areas.
eg. Jammu landslide issue.

Manmade disasters

- ① Industrial accidents eg/ Dhuletapuram blast 2024, near Visakhapatnam).
- ② gas leak eg/ Visakhapatnam styrene gas leak 2020.
- ③ water shortage eg/ Bengaluru water shortages.
- ④ accentuation of natural disasters.
eg/ Budameru encroachments accentuated
- Kijang masla floods.

Mitigation & Management strategies

- ① NDMH guidelines on urban flooding
 - embankments (permanent) relocation
 - non return approach
 - urban flooding cells.

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② ~~NATURAL~~ Yachling industrial disasters

- robust inspections at regular intervals
- 'safe industry' awards
- ensure SOP followed at all time
- external audit mechanism
- buffered vegetation from population

③ Other steps

- blue-green infrastructure through Miyawaki forests & Hydrus forest
- rapid transport for diffused urban spaces (e.g. RRTS)
- governance reforms → financial autonomy to ULB.
→ power devolution (NCRWC)

with 29.7% population in urban areas. These steps become critical.

Feedback

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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)

The 2004 Msunami was a wake up call for India, following which a comprehensive disaster management framework was evolved.

India's framework for disaster management.

① NDMA act as chief legislation

→ bodies { NDMA
 ↓
 SDMA
 ↓
 DDMA } → multilevel action

→ finances through NDRF, SDRF and NCEP duties.

→ coord : ministerial approach through NCC.

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- ⑤ National disaster management plan 2016.
(aligns with Sendai framework)
- pillar I. → disaster assessment
 - pillar II, III → structural & non-structural measure
 - pillar IV → post disaster recovery.

- ⑥ Epidemic diseases act 1897 etc. as public liability of insurance act etc. acting as supplementary legislation.

Challenges persisting

- ① Geopolitical disputes
→ Sanal Verma - border dispute over final increase for SAF (2024)
- ② Lack of recognition of slow onset disasters
→ drought
- ③ Excessive centralisation → seen during

COVID-19 lockdown.

④ absence of PM in disaster management plan.

⑤ emergence of parallel mechanism

→ PM-CARE over NDRF.

Way forward

① 2nd ARC recommendations

① categorise disaster at state, national and local level.

② 15% 4-day increase of SARF budget

③ regularly revise NCCA for disaster finance.

④ other steps → localise disaster management to PM
→ state representation in NDRF

These are critical to achieve the stated goals to render financial.

Feedback

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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)

While organized crime seeks to exploit monetary gains through systematic violation of law, terrorism seeks to achieve socio-political gains by striking fears at hearts of people.

Symbiosis b/w terrorism and organised crime

aggravated security concerns

① client seller relation b/w parties.
eg arms mafia supplying guns to NSCN(IM) etc.

① higher technology with terrorists.
eg AH-47 to Taliban
② Monetary incentives for organised crime

Feedback

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② divert support
from organised crime
groups

eg) D-company supporting
Al Qaeda.

① systematic terrorist
activities

eg) Bombay serial
blasts

① Intelligence support
to terrorists

eg) 2008 26/11 attack

③ Law & order situation
created by terrorism
aiding organised crime
eg) poppy cultivation in
TTP affected areas in
Pakistan.

① spillover concerns
aggravating issues

eg) ISKKhawassam
gangs

② possible civil war

eg) Al-Shabab : Somalia.

④ Divert organised crime
for terror financing

① Financial support
eg) NG movements
gains by drug traffickers

Steps to address linkage

① one-government approach through inter agency coordination

- MAC can be more inclusive of state police
- faster NATGRID operationalisation

② action image of multilateral forums

- use interpol for co-ord.
- SCO-RATS to counter terrorism
- CSC to curb marine interlinkage

③ attack the sources by AI based detection of money laundering.

curbing this synergy assumes importance as India is one of most affected by terrorism

Feedback

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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)

~~Border~~ India's complex neighbourhood ranging from assertive China, to unstable Myanmar to ^{-hostile-} Pakistan makes border management a complex task.

However, the government has built a robust security apparatus through! —

① robust infrastructure strengthening.

eg) Myoma airport strip near LAC.

② technological upgrades through CIBMC system.

③ real time maritime border tracking

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through IMHC, NBCI.

① physical infrastructure for complex borders
- fencing of major borders.

② Military strengthening of border forces
- 5-400 deployment.

Moreover, a robust local participation
is required for intelligence gathering
(seen during Kargil war), counter cross
border insurgents (eg: Leash attacks 2024) and
- ensure border integrity.

Steps Taken in this regard-

① Liberant villages programme for border
area development.

② Village defence guards (VDG) to foster self protection -

③ outreach by armed forces.
eg) operation - Sadbhavana.

④ participation of armed forces in local development -

eg) drain syles in Chandel
(Manipur)

⑤ naming our border villages as 'front' villages.

However, the government must not lose the third track of cross-border diplomacy. The success of 2021 ceasefire agreement with Pakistan is a case point.

Feedback

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