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GENERAL STUDIES (TEST CODE : 1515)

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Center	—	Date	22/12/21

INDEX TABLE			INSTRUCTIONS
Q. No.	Maximum Marks	Marks Obtained	
1	10		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	10		2. There are TWENTY questions printed in ENGLISH & HINDI इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3	10		3. All questions are compulsory. सभी प्रश्न अनिवार्य हैं।
4	10		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	10		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	10		6. Word limit in questions, if specified, should be adhered to. प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7	10		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।
8	10		
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20	15		
Total Marks Obtained:			
Remarks:			

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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. Explain the meaning of off-budget borrowings and its role in helping the government raise funds for various expenditures. Also, comment on its desirability. ⁽²⁾
⁽³⁾ (150 words) 10

बजट-बाहरी उधार (ऑफ-बजट बॉरोइंग्स) का अर्थ स्पष्ट कीजिए और विभिन्न व्ययों के लिए धन जुटाने में सरकार की सहायता करने में इसकी भूमिका का उल्लेख कीजिए। साथ ही, इसकी वांछनीयता पर टिप्पणी कीजिए।

Off-budget borrowings are borrowings not undertaken by centre directly rather via other governmental bodies like Public sector enterprises (PSEs). They are thus not calculated as part of borrowings during budgeting.

Role in raising government funds -

1. Borrowings from any channel help meet fiscal deficit of government.
2. Extra funds allow space for various social, welfare expenditures.
3. Since they are not part of budget calculations, do not create pressure of increasing loans.
4. Though the government has to pay interest on it, they by this means do not come under radar.

15th Finance Commission recently in its report asked centre & states to disclose their off-budget borrowings.

It is because of undesirability as-

1. Debt creates future liability in form of interest.
2. This is "hidden" and against principle of transparency & accountability.
3. It is means to flout fiscal deficit limits under FRBM Act, 2003.
4. Does not show real economic stand

Though it helps governments raise funds easily for welfare functions, these should not become "norm". It is to be used as medicine not food. 15th FC guidelines should be followed here.

2. It is argued that genetically modified food crops are required to ensure food security of India. Examine in view of concerns regarding introduction of GM crops. (150 words) 10

यह तर्क दिया जाता है कि भारत की खाद्य सुरक्षा सुनिश्चित करने के लिए आनुवंशिक रूप से संशोधित खाद्य फसलों की आवश्यकता है। जी.एम. फसलों की शुरुआत से संबंधित चिंताओं के आलोक में परीक्षण कीजिए।

Genetically modified food crops are crops who have been genetically engineered in a laboratory to include certain beneficial traits and remove exogenous features. Eg - Bt Cotton.

Need of GM crops for food security of India -

(A) Needed -

1. Increase food production and productivity as can withstand floods, droughts, weather shocks.
2. Less need of pesticides, insecticides - increases soil fertility & production
3. Many are nutritious and good for nutritional food security.

(B) Not needed -

1. India has enough production for

food security as FCI godowns are overfilling. Need is of supply chains.

2. Most farmers (86%) are small & marginal who couldn't afford GM crops.

3. Environmental Issues -

3.1. Reduce exotic & wild species which are more weather resistant. Eg - sox cotton grown is Bt cotton.

3.2. Biodiversity loss.

3.3. Insects and pests are targeted reducing flowering functions.

4. Monopoly of some firms may lead to exploitation of farmers and reduced production.

Food security of India should be promoted by growing indigenous, resistant to check and nutritious grains, of baria.

3. India's price intervention policies to support its agricultural sector not only create a broken system but also complicate matters related to international trade rules. Critically discuss. (2) (150 words) 10

अपने कृषि क्षेत्र का समर्थन करने के लिए भारत की मूल्य हस्तक्षेप नीतियां न केवल एक अप्रभावी व्यवस्था का निर्माण करती हैं बल्कि अंतर्राष्ट्रीय व्यापार नियमों से संबंधित मामलों को भी जटिल बनाती हैं। समालोचनात्मक विवेचना कीजिए।

India's 45% population is engaged in agriculture while it creates only 16% contribution to GDP. This mismatch is handled by price intervention policies of government, such as MSP, market intervention scheme (MIS), Public distribution system (PDS).

Price intervention schemes -

1. Domestic issues to create broken system -

1.1. Monopoly of some states and crops leading to disparities -

(a) Rice & wheat are promoted which are water-intensive (rice) and hinder nutritional security

(b) 5 states contribute to 90% wheat PDS procurement.

1.2. Most farmers do not get benefits of MSP, eg Bihar where FCI procurement is minimal, lead to distress sale.

1.2. Not enough emphasis on cash crops, of horticulture not part of MSP.

1.4. Distorted import-export system,
eg no MSP on many oilseeds leading
to import bill.

2. International trade rules issues—

2.1. Against 'agreement on agriculture'
of WTO where these subsidies are
counted under Amber box.

2.2. Creates system of subsidies (eg too
much pesticide) leading to SPS rules
violation & export affected.

India is a rural economy dependent
on agriculture, price intervention is
necessary for giving floor prices to
secure farmers' income. TOTAL scheme
is right step here.

4. India has an opportunity to become a leading global food supplier provided it has an efficient supply chain and the right marketing strategies.
Elucidate. (150 words) 10

भारत के पास एक अग्रणी वैश्विक खाद्य आपूर्तिकर्ता बनने का अवसर है बशर्ते उसके पास एक कुशल आपूर्ति श्रृंखला और सही विपणन रणनीति हो। विशदीकरण कीजिए।

Indian exports of food increased 1% from FY 2020 to 2021. Yet, India's contribution to world food trade is mere 0.5%, well below potential.

Opportunities to become leading food suppliers -

1. Rising food processing industries (FPIs)
2. livestock sector (or growth), horticulture & dairy have potential.

Issues -

1. Lack of supporting infrastructure -
 - 1.1. Cold storages - lead to food wastage
 - 1.2. Transportation, of cryogenic trucks
 - 1.3. Processing centres for FPIs
2. Poor quality, less hygienic - leads to phytosanitary measures rejection, eg EU stopped mangoes due to pesticide residue

3. Marketing issues - No brand as 'India'.

Way forward for increasing exports -

1. Supply chain creation & maintenance

1.1. Storage - warehouses, cold storage

1.2. Mega food parks, processing centres, quality checks (under PM SAMPADA Yojana)

1.3. Transportation - Kisan Rail

2. Marketing strategies

2.1. Branding, packaging, eg 'one district, one product'

2.2. Promote indigenous nutritional things as buckwheat, amarakand against Quinis.

3. Quality check by export inspection council

India has huge potential where we could gain leverage in food sector.

5. Land banks are increasingly gaining prominence in India to encourage land-use efficiency and enable economic growth. In this context, discuss the benefits of a land bank and state the concerns associated with it.

①

②

(150 words) 10

भूमि उपयोग दक्षता को प्रोत्साहित करने और आर्थिक वृद्धि को सक्षम बनाने के लिए भूमि बैंक भारत में तेजी से प्रमुखता प्राप्त कर रही हैं। इस संदर्भ में, भूमि बैंक के लाभों तथा इससे संबंधित चिंताओं का उल्लेख कीजिए।

Land banks are non-for-profit government organisations ~~who~~ which are created to manage and dispose off government-owned land parcels.

Benefits of land banks -

1. Create unused lands into productive, revenue generating asset.
2. Monetisation of land assets help government with required funds.
3. Promote investment as land availability known early and smooth procedural transfer.
4. Land use efficiency, especially when India's 16% population has 2.5% land.
5. Promote ease of doing business, helps companies grow & interven

help in economic growth.

Concerns associated :

1. Lack of digitised land records for exact status of land parcels.
2. Encroachment on some lands & pending litigations in courts.
3. Overall procedural hassle due to delays, eg bureaucratic, environmental clearance not given, etc.

Land banks are important step in Asset monetisation goal of economic growth. This must be implemented in concert with National monetisation pipeline.

6. Desertification has been described as one of the greatest environmental challenges of our time and climate change is making it worse. Discuss.

(150 words) 10

मरुस्थलीकरण को वर्तमान समय की सबसे बड़ी पर्यावरणीय चुनौतियों में से एक के रूप में वर्णित किया गया है तथा जलवायु परिवर्तन इसे और बदतर बना रहा है। चर्चा कीजिए।

Desertification refers to decreased biological productivity of land which may sometimes lead to conversion of land into deserts.

Challenge of desertification -

1. Loss of land creates pressure on rest of land as India has 16% population & only 1.4% land. This creates a 'vicious cycle' of desertification.
2. Threat to food security of nation
3. Loss of forests, increased deforestation may result into floods, depleting water-table, erratic rainfall.
4. Reduced soil fertility increases economic cost of fertilisers, etc.

Effect of climate change on desertification-

1. Erratic weather patterns has caused floods & droughts at some. This exacerbates desertification.
2. Sea-level rise, glacier melt is submerging land on coasts and its desertification for crops.
3. Increased global temperature has added to scorched heat at deserts & ~~reduces~~ increased desertification.

India is signatory to United Nations Convention to combat desertification that aims to eradicate desertification by 2030. While desertification is issue, we must look at climate change as whole & take steps accordingly.

7. In the context of intellectual property rights, discuss the advantages and disadvantages of releasing projects under an 'Open Source' license.

(150 words) 10

बौद्धिक संपदा अधिकारों के संदर्भ में, 'ओपन सोर्स' लाइसेंस के तहत परियोजनाओं को जारी करने के लाभ और हानियों पर चर्चा कीजिए।

Intellectual property rights give the owner of an original work or idea exclusive rights on its use. eg- copyright on a song lyrics, or patent on invented medicine.

Disadvantage of 'open source' license-

1. It makes projects available for use by all leading to violation of owner's rights on it.

2. Open source allows for misuse of information, eg by non-state actors or for organised crime.

3. Does not give monetary benefits to owner & disincentivises innovation.

Advantages -

1. Life saver in case of social welfare inventions, of cancer drug freely and cheaply available
2. Increased economic growth
3. Reduced disparities among states due to initial inequality.
4. on principles of 'cooperation for development'

India too believes in 'open source' license for necessary arenas of pharmaceuticals. But, these should come with adequate safeguards.

8. "Indian space sector has been dominated by a single umbrella of government and government institutions." In light of the statement, discuss the significance of Indian Space Association in providing an impetus to space technology in India. (150 words) 10

"भारतीय अंतरिक्ष क्षेत्रक पर सरकार की एकमात्र संस्था का प्रभुत्व रहा है।" इस कथन के आलोक में, भारत में अंतरिक्ष प्रौद्योगिकी को प्रोत्साहन प्रदान करने में भारतीय अंतरिक्ष संघ के महत्व की विवेचना कीजिए।

Recent developments for privatisation of space sector, e.g. IN-SPACE and NSIL will reduce monopolised space sector.

Significance of Indian Space Association-

1. Act as interlink between government and private players for increased privatisation.
2. Lead to reduced burden on ISRO and government for functions of satellite manufacturing.
3. ISRO could devote more time to projects of Gaganyaan.

4. Could increase employment and growth in sector.
5. Increased efficiency & management on hands of private players.
6. Create a stage for future avenues, eg space tourism as witnessed by SPACE-X in US

Issues - available

1. Less investment by investors as capital-intensive sectors
2. Lack of training centres.

India must encourage NSIL and In-space for better space sector ownership and participation.

9. Man and machine both have an important role in national security and making urban areas secure. In this context, discuss how technology is a major stakeholder in addressing the internal security challenges of India. (150 words) 10

राष्ट्रीय सुरक्षा और शहरी क्षेत्रों को सुरक्षित बनाने में मानव और मशीन दोनों की महत्वपूर्ण भूमिका है। इस संदर्भ में, चर्चा कीजिए कि प्रौद्योगिकी किस प्रकार भारत की आंतरिक सुरक्षा चुनौतियों से निपटने में एक प्रमुख हितधारक है।

National security of India includes internal security, and protecting sovereignty & territorial integrity of India.

Role of technology in this -

1. Increased surveillance, of CCTV cameras, tracking web communications etc.
2. Border security, of wire fencing along with ultrasonic light, etc.
3. Modern police force with specialised weapons and bullet proof jackets.
4. Develop new defence equipments,

- of INS Arighat, Agni-IV missiles.
6. Satellite for communication & surveillance.
 7. Data storage and easy identification of criminals, eg CCPRIS.
 8. Facial recognition at railway, metro stations.
 9. Social media use for spreading correct information.
 10. Developmental role, of digital education, telemedicine, in RWE areas.

10. National Security Guard (NSG) has emerged as a formidable force equipped to handle various manifestations of terrorism. Discuss the mandate and achievements of this force. (150 words) 10

राष्ट्रीय सुरक्षा गार्ड (NSG) एक पराक्रमी बल के रूप में उभरा है जो आतंकवाद के विभिन्न रूपों से निपटने के लिए सुसज्जित है। इस बल के अधिदेश और उपलब्धियों की विवेचना कीजिए।

National Security Guard was formed after Indira Gandhi's Assassination in 1985 as an anti-terrorist squad.

Mandate of NSG -

1. All India jurisdiction for tracking terrorists and handling their investigation
2. Emergency force in terror attacks, of Mumbai attacks 2008
3. Coordination of tracks & information of terrorists

Achievements -

1. Prevented major attacks since
2008 mumbai attacks.
2. No senior leader assassination
3. Improved security situation
in nation.

11. What do you understand by asset monetisation? Why is it needed in India? In this context, discuss the issues that need to be addressed for the National Monetisation Pipeline to succeed. (250 words) 15

परिसंपत्ति मुद्राकरण से आप क्या समझते हैं? भारत में इसकी आवश्यकता क्यों है? इस संदर्भ में, उन मुद्दों पर चर्चा कीजिए जिन्हें राष्ट्रीय मुद्राकरण पाइपलाइन के सफल होने के लिए समाधान करने की आवश्यकता है।

Budget 2021-22 has emphasised on 'asset monetisation'. Asset monetisation refers to transfer of public assets to private entity or institutional investors for monetary gains in exchange of operational rights.

Asset monetisation is different from disinvestment where asset is sold off and ownership goes to private body. The ownership in asset monetisation stays with government.

Need for asset monetisation in India-

1. Ample public assets are either vacant or unused, of lands without any construction/use.

2. Increased maintenance cost of unused assets. Monetisation would reduce/end this cost, shifting it to private body.
3. Much needed monetary benefits to government, used maybe for generation of other assets.
4. Reduce fiscal deficit of government
5. Streamline assets and increase ease of doing business.
6. Promote economic growth hindered by infrastructural bottlenecks.
7. Help to reduce regional disparities by asset development by private entity
8. Employment, job creation.

Government introduced National monetisation pipeline for monetisation of brownfield infrastructural assets, e.g.

dedicated freight corridor (DFC) or oil, gas pipeline of IOCL, etc.

Need to address issues in NMP as-

1. Proper database of each asset and infrastructural projects.
2. Appropriate pricing while transferring to private.
3. Prioritise models where at end of contract asset will be returned.
4. Attract investors as infrastructure has less attraction.
5. Prevent increasing NPAs by giving sustainable projects.

India has stepped on right direction to monetise assets. Proceeds from NMP must be utilised in National infrastructure pipeline.

12. What is social stock exchange (SSE)? Discuss the need for setting up of SSEs and key challenges in their effective implementation. (250 words) 15

सोशल स्टॉक एक्सचेंज (SSE) क्या है? SSEs की स्थापना की आवश्यकता और उनके प्रभावी कार्यान्वयन में विद्यमान प्रमुख चुनौतियों पर चर्चा कीजिए।

SEBI has recently launched Social Stock exchange (SSE). These SSE are regulated funding platforms like stock exchanges (eg BSE).

Social stock exchanges are for non-profit private enterprises and non-governmental organisations (NGOs) involved in social work to raise funds.

Need of setting up SSE -

1. To facilitate fund raising for social purpose by NGOs, etc.
2. This will reduce burden on government for funding these institutions.

3. Increase autonomy of NGOs etc.
as not dependent on government.
4. Data-driven and evidence-based philanthropic activities,
eg investors can choose where to
invest based on performance.
5. Increased choice by investors
and NGOs.
6. Help poorly provided institutions to
promote social activities not under-
taken by government as issue of
caste discrimination, homosexuality etc.

Challenges -

1. High transaction costs may lead
to disincentivised institutions
& investors.
2. Difficult to identify actual social
impact of NGOs, etc.

3. Possibility of misuse by some anti-social NGOs who are formed only for political purposes.
4. Issues in accreditation of NGOs.

Way forward-

1. Social stock exchanges must be accessible only after proper identification, background check.
2. National accreditation body for NGOs.

With FCRA and SSE, NGOs and non-private profit bodies will live up to expectations of social welfare

13. In the context of India, highlight the importance of agriculture extension. What are the challenges faced in provisioning of agriculture extension services? How does the National Mission on Agricultural Extension & Technology (NMAET) address these issues? (250 words) 15

भारत के संदर्भ में, कृषि विस्तार के महत्व पर प्रकाश डालिए। कृषि विस्तार सेवाओं के प्रावधान में सामना की जाने वाली चुनौतियां कौन-सी हैं? कृषि विस्तार और प्रौद्योगिकी पर राष्ट्रीय मिशन (NMAET) इन मुद्दों का कैसे समाधान करता है?

Agriculture accounts for 16% of GDP but 45% of workforce. India's population lives in rural areas for whose upliftment agriculture extension is essential.

Importance of agriculture extension-

1. Promotes production and productivity in agriculture and ensure food security.
2. Livelihood to many small and marginal farmers.
3. Employment generation and
4. increased income would attract youth to agriculture.

5. Extra income by allied activities of livestock, dairy, fisheries.

Challenges faced-

1. Small average land holding - 2.66 acres in India.
2. Lack of investment by farmers
3. Not easily available facilities as credit, etc.
4. Indebtedness of farmers, & that too largely to non-institutional investors
5. Absence of supporting infrastructure, of cold chain.
6. Declining resources-
 - 6.1. Soil fertility
 - 6.2. Water resources (groundwater)
7. Excessive dependence on fertilisers & pesticides & skewed ratio (N:P:K = 4:2:1 is right but is 25:4:1).

National mission on agriculture extension & technology helps in -

1. Promotion of allied activities, e.g. poultry, dairy.
2. Technological aid, e.g. AI sowing app, ISRO's Bhuvan.
3. Institutional credit facility

India must look for agriculture extension to achieve aim of doubling farmer's income by 2022.

14. Clearly delineate the 'employment problem' that India currently faces. Also, explain the fundamental reasons behind existence of this problem. (250 words) 15

भारत वर्तमान समय में जिस 'रोजगार समस्या' का सामना कर रहा है, उसे स्पष्ट रूप से निरूपित कीजिए। साथ ही, इस समस्या के अस्तित्व के मूल कारणों की व्याख्या कीजिए।

Periodic labour force survey (PLFS) and employment - unemployment survey indicate unemployment rate of 4.9%. labour force participation rate of 45%. For females, unemployment rate is higher, around 8%.

Employment problem - unemployment refers to situation when a person able & willing to work at prevailing wage rate unable to find work.

India's issues -

1. Unemployment type -

1.1 Disguised unemployment in agriculture, i.e., underemployment.

1.2. Structural unemployment due to structural bottlenecks in infrastructure

2. Skewed employment pattern-
 - 2.1. 45% of workforce in agriculture
(16% of GDP)
 - 2.2. 24% of workforce in service sector (57% of GDP)
3. Inadequate manufacturing sectors to accommodate people out of agriculture.
4. Employment present, & lack of 'employability', leading to hindered "inclusive growth"

Reasons for this problem-

1. Jobless growth after 1991 LPG reforms
(0.2 employment elasticity) -
 - 1.1. PSUs shrank, no support by government due to BoP crisis.
 - 1.2. Growth led by service sector, which is not labour intensive.
 - 1.3. MSMEs shut due to competition from outside.

2. Improper and inadequate vocational training, no TVET in colleges.
3. Lack of skilled manpower, India has only 5% skilled workforce.
4. Underdeveloped labour intensive manufacturing sector.
5. Increasing population & labour force.

Way forward -

1. Make in India to make India manufacturing hub by 2025.
2. Poverty alleviation programs e.g. MNREGA and skill development, e.g. SKG, NRLM-DAY.

Employment is essential to fulfil goal of inclusive growth and sustainable development. MSMEs should be promoted.

15. Although steps have been taken for integrating the dispersed logistics activities of maritime trade, much more needs to be done to make India a maritime powerhouse. Discuss. (250 words) 15

हालांकि समुद्री व्यापार की विखंडित लॉजिस्टिक गतिविधियों को एकीकृत करने के लिए विभिन्न कदम उठाए गए हैं, फिर भी भारत को एक समुद्री पावरहाउस बनाने के लिए और भी बहुत कुछ किए जाने की आवश्यकता है। चर्चा कीजिए।

India's 95% trade by volume is facilitated by sea. Maritime logistics is crucial for increased exports and economic growth.

Steps taken in improving logistics in maritime trade -

1. Sagarmala pariyojana - to create highways & logistics link for dispersed maritime ports.
2. National waterways - 6th is currently under construction.
3. Multi-modal logistics park to integrate all modes, eg in Assam.
4. Port authorities maritime bill, 2020 - it envisages to improve

logistic infrastructure and clearance facilitation by port trusts at decentralised level.

5. Lighthouse development for better navigation facilities

6. International projects, eg Colombo port terminal with Sofam

Needs to be done - :

1. Maintenance of waterways, of dredging, de-silting for smoother & faster logistic.
2. Technological additions in boats for navigation, weather forecasting
3. Integration of all modal logistic for a comprehensive affordable transportation - make goods competitive

4. single window clearance at ports for faster & easier trade.

Benefits of maritime logistics-

1. Cheaper than other modes
2. Less maintenance
3. Environmental friendly as less fuel required

For improved exports and better domestic trade facilitation India must develop maritime sector as in developed nations, of USA.

16. Accounting for natural capital and ecosystem services is crucial to understand the link between the economy and environment. Discuss with specific references to India's initiatives in this regard. (250 words) 15

अर्थव्यवस्था और पर्यावरण के मध्य संबंध को समझने के लिए प्राकृतिक पूंजी और पारिस्थितिकी तंत्र सेवाओं के लिए लेखांकन महत्वपूर्ण है। इस संबंध में भारत द्वारा की गयी पहलों के विशिष्ट संदर्भ के साथ चर्चा कीजिए।

Natural capital and ecosystem services refer to services provided by natural ecosystem to world.

Ecosystem services

Soil renewed and regeneration and <u>air purification</u>	Water cycle management	<u>Material</u> - Forests - Medicines - Fruits
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Importance of accounting -

1. Natural capital, eg land help us understand monetary value of it.
2. Realise their contribution in GDP terms
3. Sensitisation of people who take these are "free" service available to be exploited.

4. Understand link between economy and environment -

4.1. monetary value of environment tells its economic value & links them.

4.2. Can add to preservation efforts by digital database.

India's initiatives in this arena -

1. Uttarakhand recently became 1st state to calculate environment accounted GDP. It took into account net devaluation by environment, rather positive addition for preservation.

2. India undertook with EU, project of National accounting of natural capital and ecosystem services.

3. India also coordinated with international bodies & followed SEES model for calculation or accounting.

Accounting for natural capital is essential to know status quo in environmental arena and needed interventions to eventually save this capital.

17. Rapid and unplanned urbanisation accompanied by population growth have increased both the risk and impact of natural disasters. Discuss the statement along with adequate measures to address the relevant concerns in India. (250 words) 15

जनसंख्या वृद्धि के साथ-साथ तीव्र और अनियोजित शहरीकरण ने प्राकृतिक आपदाओं के जोखिम और प्रभाव दोनों को बढ़ा दिया है। भारत में विद्यमान प्रासंगिक चिंताओं के निवारण हेतु यथोचित उपायों के साथ इस कथन की व्याख्या कीजिए।

India is undergoing rapid urbanization with 34% of population living in urban areas, as opposed to 17% in 1951.

Urbanization is a result of both push & pull migration factors due to increasing population growth, i.e., Stage II of demographic transition.

Consequences of rapid urbanisation and population on natural disasters-

- Population growth -
 - Increased population density (342/km²) that increases impact of any disaster, of earthquake.

1.2. This has stressed natural resources creating pressure on environment, increasing risk of natural disasters.

1.3. Increased deforestation, agriculture raised flood concerns

2. Urbanization -

2.1. Slums, poor housing facilities are prone to earthquake, shattered by cyclones on coast

2.2. Increased pressure on land, poor drainage & leads to urban floods.

2.3. GHGs has increased, erratic weather pattern and risk of natural has increased.

2.4. Non-availability of safety measures increases impact when disaster strikes

2.5. houses on hills, increased landslides

2.6. Glaciers melt increased - overall global warming & more risk of disasters.

Adequate measures to address concerns

1. NDMA suggests disaster zoning and planned settlements, eg do not settle in zone ∇ earthquake zone.
2. Building codes by NDMA to be followed.
3. Increased resistant on coasts eg by mangroves, coral reefs - thus environment preservation.
4. Slums should be replaced by affordable rental housing complexes under AMRUT
5. Technological aid, ie; as in lighthouse projects, eg amphibious houses.
6. Restricting urbanisation on hills as Muscorie, Shimla, Kinnaure.
7. Incentivise 2-children family.

Disasters' impact increases magnified by inadequate preventive measures.
Japan is a role model to learn.

18. National Hydrogen Mission can be a game changer for India's rising energy demands. Comment. (250 words) 15

भारत की बढ़ती ऊर्जा मांगों के लिए राष्ट्रीय हाइड्रोजन मिशन एक गेम चेंजर हो सकता है। टिप्पणी कीजिए।

India at UNFCCC, Paris agreement has committed to NDCs including 40% energy from renewable sources, eg solar, wind, hydrogen.

National hydrogen mission plans to extract energy from hydrogen in

3 forms -

1. Green hydrogen - electrolysis of hydrogen using renewable energy obtained electricity. Clean energy.
2. Blue hydrogen - using methane. This releases green house gases & not totally clean.
3. Grey hydrogen - using non-renewable energy sourced electricity for electrolysis, eg by coal. This releases pollutants and is not clean.

Hydrogen produced energy -

1. Clean mostly, environment friendly
2. Has high calorific value
3. Hydrogen is abundant & easily available in form of water, etc.

Owing to India's rising energy demands
due to → increased industrialisation
→ Urbanization (eg vehicles, AC)
→ increasing population
→ and depleting fossil fuels

National hydrogen mission by
producing high calorific value, i.e.,
large amount of energy can meet
India's demands.

Uses of hydrogen -

1. As fuel, eg in CNG-H that reduces

- pollution levels by 18%.
2. In fuel cells that are key to clean vehicle movement.
 3. In electricity form it can be used for ACs, manufacturing sector (e.g. cement production).

India's rising energy demands and environmental concern, both lead to logical argument for use of clean fuels as hydrogen, facilitated by National hydrogen mission.

19. Despite geo-strategic instability of its region and a keen awareness of the cyber threat it faces, India has made only 'modest progress' in developing its policy and doctrine for cyberspace security. Critically examine.

(250 words) 15

अपने क्षेत्र की भू-रणनीतिक अस्थिरता और इसके समक्ष विद्यमान साइबर खतरों के संबंध में व्यापक जागरूकता के बावजूद, भारत ने साइबरस्पेस सुरक्षा के लिए अपनी नीति और सिद्धांत विकसित करने में केवल 'साधारण प्रगति' की है। समालोचनात्मक परीक्षण कीजिए।

Cyber security refers to preventive measures to protect networks, data and systems from cyber threats, eg malware (trojan horses), hacking, etc.

India faces cyber threats from-

1. Fear of cyber warfare by strategically ~~and~~ in stable neighbours, eg Pakistan, China as traditional war not possible.
2. Cyber-terror by non-state actors in region, eg Taliban, Al-Qaeda, etc.

India's progress & initiatives towards cyberspace security-

1. National policy for cyber security, 2013
It aims to create safe and resistant cyberspace.

2. National critical Information Infrastructure protection centres as firewall against attacks (NCII PC)
3. Cyber forensic laboratories in Pune, Bangalore.
4. Cyber centre for cryptology (science of de-encrypting) at Kolkata.
5. National cyber coordination centre to manage & guide against attacks from single point.
6. CERT-In (Centre Computer emergency response team - India) nodal agency for emergency in attacks.
 - 6.1. Decentralised sector wise CERT-IN made, eg in defence and FIN-CERT in financial sector.
7. Information Technology act, 2000 that criminalises hacking, privacy breach, use of cyber space for illegal activities of pornography.

8. International cooperation -

8.1. Global conference on cyber space
held biennially from 2011. India
hosted in 2017.

8.2. Commonwealth declaration on
cyber space, 2012.

8.3. Budapest convention, 2001.

Issues -

1. National policy on cybersecurity
has not included e-commerce.
2. Inadequate emphasis on training
of manpower.

India has increased ~~in~~ focus on
cybersecurity and emphasis on 'built-in'
security devices rather than add on
is must.

20. Developmental interventions alone cannot play a defining role in the resolution of existing and protracted internal conflicts in various parts of India within a reasonable time frame. Discuss. (250 words) 15

भारत के विभिन्न हिस्सों में व्याप्त और दीर्घकाल से जारी आंतरिक संघर्षों को उचित समय सीमा के भीतर हल करने में केवल विकासात्मक हस्तक्षेप एक निर्णायक भूमिका नहीं निभा सकते हैं। चर्चा कीजिए।

India is faced by various internal security issues and conflicts such as-

1. Left-wing terrorism or extremism of in Red corridor
2. Secessionist tendencies by militant groups in North East, of Nagaland group demand of 'Nagalim'
3. Organised crime, of drug trafficking, human trafficking, money laundering
4. Border management issues including migration crisis, of from Bangladesh caused riots in Assam.

For resolution of these conflicts -

① Need for developmental interventions -

- 1.1. Left-wing extremism is most in areas that face unemployment, low development, infrastructure.

1.2. Governance development is must as its deficit leads to parallel governments, eg North East, Danda-Karamya region.

1.3. Development makes recruiting of commoners difficult establishing legitimacy of elected government.

1.4. Allows for better check on terrorist activities, eg roads only will allow timely action & access.

2. Other interventions needed along with development -

2.1. Resolving political issues, eg Art 370 abolished in J&K since development was there.

2.2. Schemes as SAMADHAN (MoD) to fight extremism.

2.3. Need for trained police force,
of greyhounds in Andhra Pradesh

2.4. Campaign to increase awareness
among youths and villagers.

2.5. Increased surveillance to
clamp down on illicit activities
and break solidarity of miscreants

Development is an essential component
for internal security. But it has
to be complemented with governance
efforts and winning support of
locals to resolve ongoing issues.