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GENERAL STUDIES (TEST CODE : 2213)

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Medium Eng./Hindi	ENGLISH	Registration Number	21412
Center	ONLINE	Date	26/7/22

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- 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, विभागीय क्रमांक आदि)।
- There are TWENTY questions printed in ENGLISH & HINDI
इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
- All questions are compulsory.
सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
- 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 लिखे गए उत्तर पर कोई अंक नहीं मिलेगा।
- Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
- 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।

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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. An effective approach to green budgeting is underpinned by strong strategic framework, tools for evidence generation and an enabling budgetary governance framework. Discuss. (150 words) 10

हमने बजट के लिए एक प्रभावी दृष्टिकोण को सुदृढ़ गणितीय ढांचे, साक्ष्य निर्माण हेतु उपकरण और एक मजबूत वजरीय शासन ढांचे द्वारा सुदृढ़ता प्रदान की जाती है। विवेचना कीजिए।

Green budgeting refers to budgeting that aims at environment sustainability by supporting environment friendly initiatives while making efforts to reduce ^{support for initiatives that pollute} environment.

Effective approach is underpinned by:

→ Strong strategic framework:

- ① Institutional framework comprising regulators and watchdogs of government such as the NBT
- ② Convergence between ministries for effective coordination and planning
- ③ Collaboration with tribals, NGOs, civil society to improve implementation

→ Tools for evidence generation

- ① Use of space technology (geospatial tools) like GIS
- ② Local data gathering by local bodies, tribals, NGOs for accurate data

And enabling budgetary governance framework

- ① Adopting outcome based budgeting
- ② Incorporating gender budgeting concept to account for women (vulnerable section)
- ③ Release of funds without delay.
- ④ Active monitoring/tracking to cut down on corruption/leakage

India can consider adopting outcome based budgeting and as ~~an~~ an environmental cell in every ministry that looks at green ~~and~~ budgeting initiatives

2. State the need for circular economy in India and the challenges associated with it. Also, discuss the measures that are required to build a circular economy in India. (150 words) 10

भारत में चक्रीय अर्थव्यवस्था की आवश्यकता और इसे जुड़ी चुनौतियों का उल्लेख कीजिए। साथ ही, भारत में एक चक्रीय अर्थव्यवस्था के निर्माण के लिए आवश्यक उपायों पर चर्चा कीजिए।

Circular economy refers to economy that is based on principles of recycle, reuse for sustainability.

Need for circular economy

- ① Among top 5 polluters when it comes to electronic waste generation
- ② Increasing plastic waste burden which is non recyclable
- ③ ~~Starts~~ limited resource stock which needs to be preserved like Copper
- ④ For employment generation as it can help create jobs in recycling, waste collection
- ⑤ To reduce demand for ~~so~~ timber which is causing deforestation leading to climate change / global warming

Challenges

- ① Currently, most initiatives in informal sector.
- ② Lack of processing, recycling infrastructure
- ③ ~~Lack of idea~~ large scale operation creates challenges for effective monitoring / law implementation for government
- ④ Unskilled labour, lack of safe technology

Measures to build circular economy

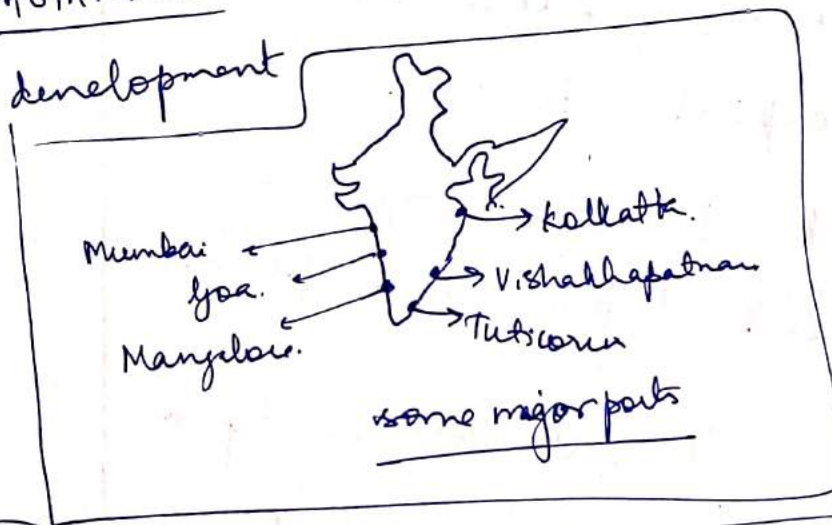
- ① Skilling labour
- ② Research for evolution of waste processing, recycling technology
- ③ Incentivize MSMEs to expand in this sector
- ④ Incubate startups in this sector.

Initiatives like ~~low~~ Extended producer responsibility, swachh Bharat Mission, solid waste rules are good steps and must be built on.

3. The Major Port Authorities Act, 2021, seeks to grant greater autonomy and flexibility to the major ports and professionalise their governance. Discuss. (150 words) 10

प्रमुख बंदरगाह प्राधिकरण अधिनियम, 2021, प्रमुख बंदरगाहों को अधिक स्वायत्तता और लचीलापन प्रदान करने तथा उनके शासन को पेशेवर बनाने का प्रयास करता है। विवेचना कीजिए।

There are currently 13 major ports in India. Schemes like SAGARMALA have been enacted for their development.



Major Port Authorities Act seeks to grant greater autonomy & flexibility to ports & professionalize governance:

- ① Currently, authority is more under government controls.

- ② New authority will have greater freedom in operation & will be less under supervision from government
- ③ More flexibility due to better models like revenue sharing
- ④ Freedom given for planning investment initiatives & capital expansion
- ⑤ Appointment of experts from private sector instead of government officials

Thus, the Act is a step in the right direction and will help meet the aim of Sagarmala & boost multi-modal logistics

4. Analyse the need for shifting from presumptive land titling to conclusive land titling system in India. Also, highlight the hurdles in its implementation. (150 words) 10

भारत में अनुमानित भूमि स्वामित्व से निर्णायक भूमि स्वामित्व प्रणाली में स्थानान्तरण की आवश्यकता का विश्लेषण कीजिए साथ ही, इसके क्रियान्वयन में आने वाली बाधाओं को रेखांकित कीजिए।

Conclusive land titling involves confirmation of allocation of land titles through written legal contracts clearly specifying the owner and the tenant.

Currently, systems based on presumption i.e. without clear written record

Need for shifting to conclusive titling:

- ① Removes ambiguities in title.
- ② Prevents illegal activities like
usurpation land grabbing by tenants or
eviction of tenants by owner.
- ③ Protects weaker sections ^{by above} as tenants
belong mostly to weaker sections."

- ④ Incentivizes investment in land due to clear titling which provides security to both tenant and owner
 - ⑤ Removes trust deficit
 - ⑥ Reduces litigations at court due to dispute
- Hurdles in implementation

- ① Land record ownership records are not clear, but are vague
- ② Illiteracy of tenant may lead to exploitation / fooling by others
- ③ Inertia as the traditional system has been in place for centuries
- ④ Inadequate political will
- ⑤ Land reforms being state subject so depends on state.

Land Records Modernization
program of digitizing records is good step & must be expedited. NITI Aayog's ^{implemented} recommendations on tenancy reform must be,

5. What do you understand by methanol economy? Critically discuss its role in achieving India's energy security and economic prosperity. (150 words) 10

मेथनॉल अर्थव्यवस्था से आप क्या समझते हैं? भारत की ऊर्जा सुरक्षा और आर्थिक समृद्धि प्राप्त करने में इसकी भूमिका की समालोचनात्मक विवेचना कीजिए।

Methanol economy
refers to economy using methanol as
one of the sources of energy and fuel.

India has made efforts of being
methanol economy through aiming at
setting up methanol plants, having
viability gap funding and methanol blending.

Role in achieving energy security

- ① Reduces dependence on oil imports
- ② Helps diversify energy sources
- ③ India has high potential of domestic production

Role in achieving economic prosperity:

- ① will help generate employment
- ② Reduction of oil imports will improve

balance of trade thus improving fiscal strength & enhance foreign reserves

But, there are several limitations:

- ① Large initial investment needed as current infrastructure is inadequate
- ② Redesigning of automobiles for methanol fuel will lead to additional cost
- ③ Need to invest in technology to make it commercially viable.
- ④ lower energy density/output
Thus, since methanol is more environment friendly, it can be focused ~~as~~ as one of ~~the~~ methods of fuel to diversify India's energy mix. Government support & research will be needed to make it successful.

6. Discuss the role of geospatial technologies in developing effective approaches for disaster risk reduction and disaster management. (150 words) 10

आपदा जोखिम न्यूनीकरण और आपदा प्रबंधन के लिए प्रभावी दृष्टिकोण विकसित करने में भू-स्थानिक प्रौद्योगिकियों की भूमिका की विवेचना कीजिए।

Geospatial technologies refer to the use of technologies based on ^{space} satellite that help in communication, location, tracking and navigation.

Ex) GIS as a geospatial technology

Role of geospatial technologies in developing effective approaches for disaster risk reduction & management

① Help in vulnerability mapping by accurate surveys

ex: analyzing hilly areas to identify landslide prone region

② Track ~~disaster~~ hazardous situations

ex: tracking cyclone formation, and path and strength. This was done for cyclones like cyclone bulab.

③ Maintaining communication during disaster situations and to ensure timely message portrayal.

ex: Satellite phones work without electricity

④ Aiding in rescue operations such as for analyzing the extent of landslide and where people are trapped.

⑤ Helping navigation during adverse scenarios like cloudbursts when vision is very low due to fogs.

⑥ For helping in rebuilding by using geospatial inputs in planning.

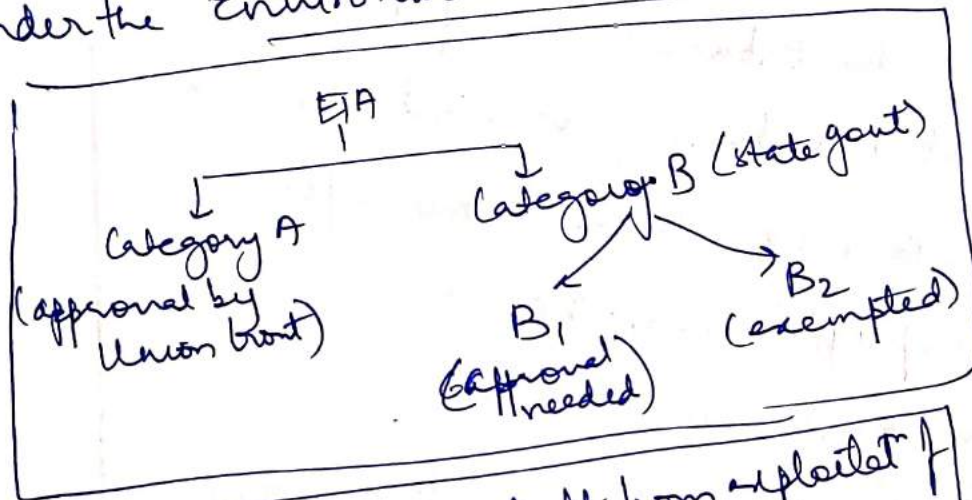
⑦ Disaster response plan can also be designed based on geospatial information.

Government has made a push on geospatial technologies aiming for 5% share by 2025. ISRO has already done good work & can lead this initiative. Expertise must be developed.

7. The focus of Environmental Impact Assessment (EIA) needs to shift from utilization and exploitation of natural resources to conservation of natural resources. Discuss. (150 words) 10

पर्यावरणीय प्रभाव आकलन (EIA) का मुख्य ध्यान प्राकृतिक संसाधनों के उपयोग और दोहन से हटाकर प्राकृतिक संसाधनों के संरक्षण पर केंद्रित होना चाहिए। विवेचना कीजिए।

Environment Impact Assessment in India is legally provided under the Environment Protection Act, 1986.



Focus of EIA needs to shift from exploitation of natural resources to conservation:

① Currently, EIA looks at studying impact on environment due to resource exploitation and aims to reduce the negative impact

② However, the focus is on commercial

- gain at the cost of resources
- ⑤ Inadequate efforts are done currently to look at viable alternatives to reduce exploitation
 - ④ ~~Public~~ Public hearings involving locals like tribals who help in conservation are not mandatory for most several cases
 - ③ Exemptions have been allowed for certain projects - ex- the recent Char Dham Highway project

Thus, ^{focus} ~~need~~ has to shift more to environment protection by:

- ① Making public consultation mandatory
 - ② Making efforts to minimize impact on resource exploitation
 - ③ Using technology like geospatial tech.
- Thus, a change in approach will help India be more sustainable

8. What do you understand by hybrid warfare? Discuss India's preparedness in this context. (150 words) 10

हाइब्रिड वारफेयर से आप क्या समझते हैं? इस संदर्भ में, भारत की तैयारियों की विवेचना कीजिए।

Hybrid warfare refers to combining conventional forms of warfare with non-conventional forms such as informational warfare (fakenews)

ex: Hackings, fake news on death of Presidents being made on Russia-Ukraine war to influence public opinion/success

India's preparedness in this context:

India has taken good measures like:-

① Election Commission of India and social media companies coming up with voluntary code to battle fake news

② social media rules ~~to~~ ~~also~~ recognizing significant social media intermediaries (SSM)

for proper regulation

- (I) Cyber policies like critical to infrastructure protection Authority, CERT In cyber policy etc

However, there are challenges or preparedness

- ① Large scale of social media, cyberspace makes monitoring difficult.
- ② Insufficient cybersecurity as defence agencies are witnessing cyber attacks from China.
- ③ Still need for stricter regulation
- ④ Shortage of skilled manpower for effectively ~~counter~~ building capability

way ahead as to invest heavily on building better regulation mechanism, infrastructure & skilled manpower. Partnership with industries & countries like Israel, USA will help.

9. Discuss the challenges associated with inclusion of women in armed forces, particularly in combat roles in India. How can these challenges be addressed? (150 words) 10

गश्तख बलों, विशेष रूप से भारत में युद्धक भूमिकाओं में महिलाओं को शामिल करने से संबंधित चुनौतियों पर चर्चा कीजिए। इन चुनौतियों का समाधान कैसे किया जा सकता है?

The Supreme Court has favorable ruled for women allowing them to be included in combat roles.

Anani Chaturvedi is first woman to become fighter pilot in Airforce

Challenges associated with inclusion of women:

- ① Need for modification of current equipment, training module to incorporate them
- ② Some argue that biologically, women may find it more challenging in physical warfare operations than men
- ③ Army says its current culture makes it difficult to accept women ^{commanders}
- ④ Problem of war crimes if women are taken as prisoners of war - their safety at threat.

③ Question on maternity leave as combat roles require posting ~~in~~ often in challenging areas.

How these challenges can be addressed

- ① Effective training of women to make them as skilled in physical combat as any other
- ② Int'l International cooperation to evolve rules on ~~for~~ women prisoners of war to ensure their safety
- ③ Policies that focus on how maternity leaves will be handled ~~in~~ will bring clarity
- ④ Investing and designing programs to change culture, training modules to help ensure women are successfully ^{neutralized}

Above steps will thus help Indian military hire the best from all genders.

10. S. Chandrasekhar was one of the greatest scientists of the 20th century whose prolific contributions spanned across astrophysics, space and mathematics. Elaborate. (150 words) 10

एम्. चंद्रशेखर 20वीं सदी के महानतम वैज्ञानिकों में से एक थे, जिनका योगदान भौतिकी (एस्ट्रोफिजिक्स), अंतरिक्ष और गणित के क्षेत्र में विपुल योगदान था। मविम्वर वर्णन कीजिए।

S. Chandrasekhar
is a noble prize winning scientist
and scholar.

Contributions spanned across astrophysics
space and mathematics :

He came up with the
concept of "Chandrasekhar limit"
Chandrasekhar limit looks at the
threshold for stars to become
different phenomenon like blackholes

As per him, stars that have
a size or radius less than the
Chandrasekhar limit will never

become blackholes on their death.

The end ~~the~~ stage of such
stars will ~~not be~~ ~~red giant~~
be ~~the~~ cases like white dwarf

For ex: our sun falls
below the Chandrasekhar limit
& thus will not become a blackhole
on its death, but will be a white dwarf

Thus, this concept
amalgamated astrophysics, space
and maths beautifully.

11. State finances in India present a worrying picture, with debt sustainability being a major concern. Discuss in context of the recent RBI report on state finances. (250 words) 15

भारत में राज्य वित्त एक चिंताजनक स्थिति प्रस्तुत करता है, जिसमें ऋण गंभीरता एक प्रमुख चिंता का विषय है। राज्य वित्त पर आर. बी. आर्. की हालिया रिपोर्ट के संदर्भ में विवेचना कीजिए।

State finances are dealt with under laws like the FRBM Act which came at total of 60% debt to GDP ratio whereas for states it is 20%.

State finances present a worrying picture with debt sustainability

① Revenue shortfall in GST and the reduction of effective GST rate to around 11.6%.

↳ Reduced GST revenue.

② Freebie culture as seen in states like Punjab where free electricity being given worsening fiscal strength.

③ Compensation period for GST coming to an end with no extension announced yet

④ ^{Hidden} Extra-budgetary expenditure where states agencies are borrowing on own account instead of being accounted under state budget.

↳ leads to hidden debt, lack of transparent practices

⑤ Extended pandemic impact such as variants like omicron causing extended supply chain shocks

⑥ ~~however~~ However, ~~not~~ the situation is not as bad because:

① Centre has extended loans to help meet GST shortfall

② GST revenues are increasing

- ③ Centre ~~proposed~~ increasing borrowing
limit tied with reforms in power sector
- ④ Centre instructing states to come
clean on ~~Thus, way ahead lies~~
extrabudgetary expenditure

Thus, way ahead lies
in transparent accounting, sustaining
GST reforms to enhance revenue,
and extending compensation period.
Unnecessary freebies should be ended.

12. The Indian experience provides several lessons of an inclusive digital economy model that enables formal digital governance structure at a low cost and with easier access. Discuss. (250 words) 15

भारतीय अनुभव एक समावेशी डिजिटल अर्थव्यवस्था मॉडल के कई सबक प्रदान करता है जो कम लागत पर और आसान पहुंच के साथ औपचारिक डिजिटल शासन संरचना को मजबूत बनाता है। विवेचना कीजिए।

India's digital economy has received an immense boost due to the pandemic, demonetization among other reasons.

Indian experience provides lessons of inclusive digital economy model that enables formal digital governance at low cost:

- ① Use of open source technology to boost startups, initiatives in the field
- ② Focusing on high demand sectors

like:

Vaccination → COVID portal.
payments → UPI

- ③ ~~Securing~~ Ensuring adequate reliability

and security like using biometric verification in case of Aadhar transaction

- ④ Setting standards, adequate regulation for boosting healthy competition

↳ ex: the UPI regulated by NPCI

- ⑤ ~~Non-discrimination~~ Ensuring fair competition, non-discrimination. ex: UPI can be used small, big sized companies

- ⑥ Easy to comply regulations like allowing online KYC to join PayTM etc makes registration easier for all people

However, there are certain issues on ~~our~~ Indian scenario:

- ① Cyber security concerns ex: a cyber security professional alleged Aarogya Setu was vulnerable to hacking

- ② lack of data and privacy regulation as law based on Srikrishna committee yet to be enacted
- ③ ~~Big~~ Monopoly/unfair practices like in e-commerce sector by players like Amazon preventing entry of new players
- ④ Digital divide prevents countryside access
- ⑤ Conflict of interest ex: NPCI developed UPI but is also regulator.

Thus, way ahead is to enact law based on B.N. Srikrishna committee and empower CCI with manpower for adequate monitoring & regulation

BND C is a very good step taken to democratize e-commerce sector.

13. Dairying is a viable livelihood option for a large section of the population. In this context, discuss the significance challenges faced and associated government initiatives for the dairy sector in India. (250 words) 15

डेयरी व्यवसाय, आवादी के एक बड़े हिस्से के लिए आजीविका का एक व्यवहार्य विकल्प है। इस संदर्भ में, इसके महत्व, विद्यमान चुनौतियों और भारत में डेयरी क्षेत्र के लिए सरकार द्वारा की गयी पहलों की विवेचना कीजिए।

India has a thriving dairy sector and it is part of allied sector of agriculture involving commercial sale of milk & milk products.

Significance of dairying

- ① India has largest population of milk providing animals like buffalo.
- ② It is largest producer of milk
- ③ It acts as effective insurance against crop failure
- ④ Has a successful cooperatives based model - (ex) = Amul.
- ⑤ Complements income of poor families, farmers

- ⑥ Increasing demand due to high population, especially in cities

Challenges in sector

- ① low productivity of milk by breeds
- ② Shortage of healthy germplasm,
IVF facilities, semen banks for animals
- ③ Livestock health issues
 - ↳ Diseases like Foot & Mouth Disease
 - ↳ Anti microbial resistance due to
~~and~~ careless use of antibiotics
- ④ Fragmented approach → no large scale
dairy farms in most cases
- ⑤ Credit shortage for farmers to invest.
- ⑥ Inadequate infrastructure like processing
facilities, transport leads to fragmented market

Government initiatives :

- ① Animal Disease Control Programs like for Foot & Mouth Disease
- ② Rashtriya Gokul Yojana and the provision of registering livestock with unique ID
- ③ Credit support for dairy farms like dairy infrastructure fund
- ④ ~~setting up of~~ Upscaling IVF facilities
mobile clinics for veterinary services
• high quality germplasm for higher productivity
- ⑤ Formation of cooperative ministry will help boost cooperatives in dairy sector.

Thus, good steps have been taken, Key is their implementation on mission mode

14. The imperative to increase farmers' income must shift to creating value chains and must not be reliant on the MSP regime and subsidy bias prevalent in the current Indian agricultural system. Examine.

(250 words) 15

किसानों की आय बढ़ाने की अनिवार्यता को मूल्य श्रृंखलाओं के गृजन में जोड़ा जाना चाहिए और इसे वर्तमान भारतीय कृषि प्रणाली में प्रचलित एम. एस. पी. व्यवस्था एवं पूर्वाग्रहपूर्ण सब्सिडी पर कतई निर्भर नहीं होना चाहिए। परीक्षण कीजिए।

There have been demands recently for legalization of MSP as a measure to secure farmer income & to meet target of doubling farmer incomes

But, imperative to increase income must not be reliant on MSP regime & subsidy bias :

- ① Currently, MSP is biased heavily in terms of rice and wheat
- ② Procurement is also focused around green revolution areas like Punjab

However, this leads to problems like:

① Lack of effective penetration and procurement from poorer regions
like Northeast, Marathwada, Bundelkhand

② Unsustainable cropping pattern
↳ MSP incentivizing growth of water guzzlers like sugarcane in drought prone regions

↳ Promotes growth of crops like millet, oilseeds necessary for nutrition, energy security

③ MSP regime ~~is~~ distorts market prices due to government setting price

④ MSP prevents deep engagement with private sector through contract farming

Thus, need to shift to creating value chain

① Improving logistics, connectivity to improve market access for farmers

② Contract farming will help strengthen value chain

③ Diversifying cropping pattern will help setup value chains for new crops like millets

④ E-NAM : electronic ~~market~~ market will improve market & value chain

⑤ Reforming APMCs,

⑥ Boosting food processing industries

⑦ Penalizing hoarding

The reforms recently made like reforms on Essential Commodities Act, SAMPADA for food processing, incentivization of millets are great steps and will yield better ~~of~~ results.

Increasing investment & attracting private players ~~will~~ & expediting

E-NAM along with reforming MSP as per ~~Shanta Prasad~~ & NITI Aayog recd will help

15. What are the challenges in ensuring sustainable river management in urban areas? Highlight the remedial measures that can be taken for river management with a special focus on the recently launched River Cities Alliance. (250 words) 15

शहरी क्षेत्रों में संधारणीय नदी प्रबंधन को सुनिश्चित करने में कौन-सी चुनौतियाँ विद्यमान हैं? हाल ही में प्रारंभ नगर निरीज एलायंस पर विशेष ध्यान देते हुए नदी प्रबंधन के लिए किए जा सकने वाले उपचारात्मक उपायों को रेखांकित कीजिए।

River management failure
in urban areas contribute to
environmental ^{/water} pollution, water shortage,
accentuating urban heat island effect
and diseases like typhoid.



Challenges in ensuring sustainable
river management:

- ① Haphazard planning by local bodies
on expansion of urban areas.

- ② Above leads to encroachment of river. ex: Yamuna in Delhi.
- ③ Untreated release of pollutants make river water unhealthy
ex: frothing in Yamuna (Delhi)
- ④ Lack of awareness about situation in public/ local bodies
- ⑤ ~~Inadequate~~ Inadequate sanitation, drainage systems to augment river. during rains
- ⑥ Lack of management expertise, technologies needed for efficient management
- ⑦ Inadequate policies & lack of collaboration with NGOs

Special measures to be taken

- ① River clubs alliance where there will be partnership and sharing of best practices

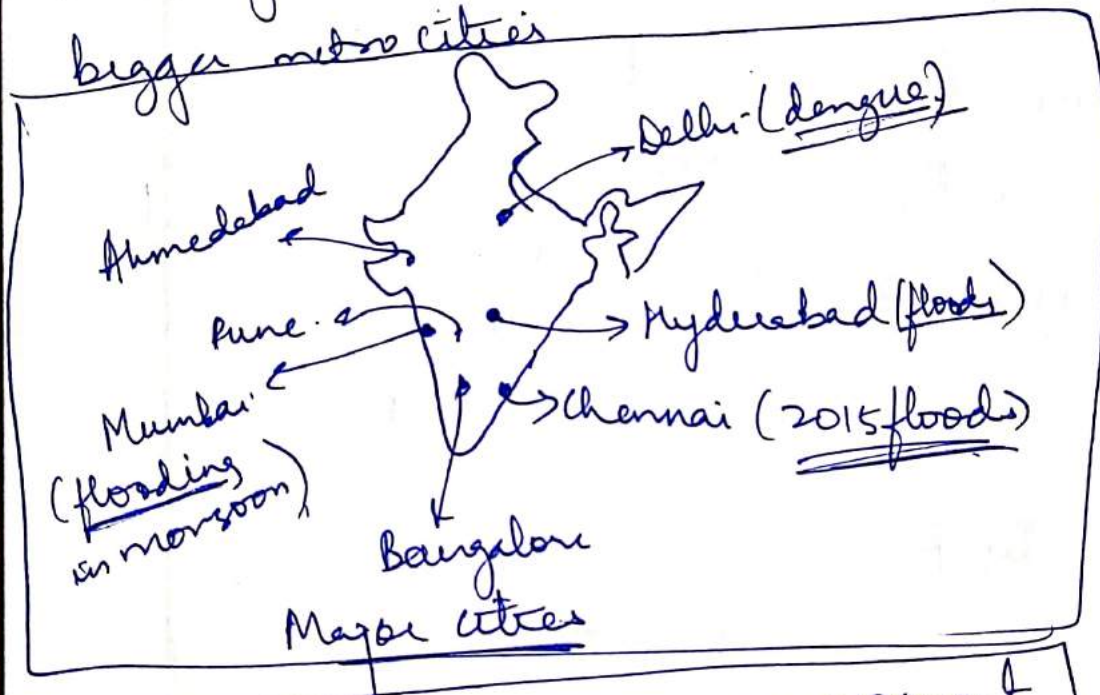
- ② Policy formulation by government
- ③ Empowering local body with funds, finance, functionaries (2nd ARC) to plan for management
- ④ Partnership with locals, NGOs
- ⑤ Adopting latest technologies
- ⑥ Using concepts of sponge cities, river garden (2nd ARC)
- ⑦ Remove encroachment

Thus, above steps especially river cities alliance will help ensure sustainable management

16. Haphazard growth and poor management make the Indian cities the locus of disasters, both large and small. Comment. Also, discuss the current gaps in policies in addressing these challenges. (250 words) 15

अव्यवस्थित विकास तथा निम्न स्तरीय प्रबंधन ने बड़े और छोटे दोनों प्रकार के भारतीय शहरों को आपदाओं का केंद्र बना दिया है। टिप्पणी कीजिए। साथ ही, इन चुनौतियों का समाधान करने में नीतियों में विद्यमान वर्तमान अंतराल पर चर्चा कीजिए।

Almost 30% of Indians
live in urban areas (2011 census)
with ~~majority~~ significant share
of them living in the
bigger metro cities



Haphazard growth & poor management
make Indian cities locus of disasters:

- ① Covid disaster (biological) where there
were rapid rise in cases in cities

due to inadequate contract tracing,
slums like Dharavi (Mumbai).

② Dengue in cities due to lack of
taking action against stagnation
and haphazard growth of slums
and lack of water drainage leading to

③ Floods in Chennai due to haphazard
planning as there were no drainage
systems, waterbodies ~~into~~ encroached
leading to waterlogging.

④ Water crisis / water shortage in Chennai
when water train had to be arranged
due to poor management of water supply

⑤ Corruption in local bodies leading to
overlooking of rules. ^{Hotel} Aspit palace fire
in Delhi

Current gaps in policies :

- ① Lack of data based planning
- ② Lack of funds, functions, functionaries
in local bodies (3Fs) - (etc.)
As per ^{a maximum of} data, only 40% revenue of municipal corporation is generated from own sources
- ③ Lack of disaster risk reduction
mainstreaming in policies
- ④ Ignore environment
- ⑤ Lack of emphasis on involving citizen participation
reducing effectiveness of measures
- ⑥ Lack of review of/audit/social audit

Thus, there is need to
adopt ecological status into planning
and focus on empowering local bodies
& collaboration with civil society
while leveraging technology

17. Discuss the extent of the problem of narco-terrorism in India. What measures have been taken by the government to counter and control this problem? (250 words) 15

भारत में नार्को-आतंकवाद की समस्या के प्रसार पर चर्चा कीजिए। इस समस्या से निपटने और नियंत्रित करने के लिए सरकार द्वारा क्या उपाय किए गए हैं?

Narco terrorism refers to the widespread sale of narcotics illegally by a network of organized and unorganized criminals both.

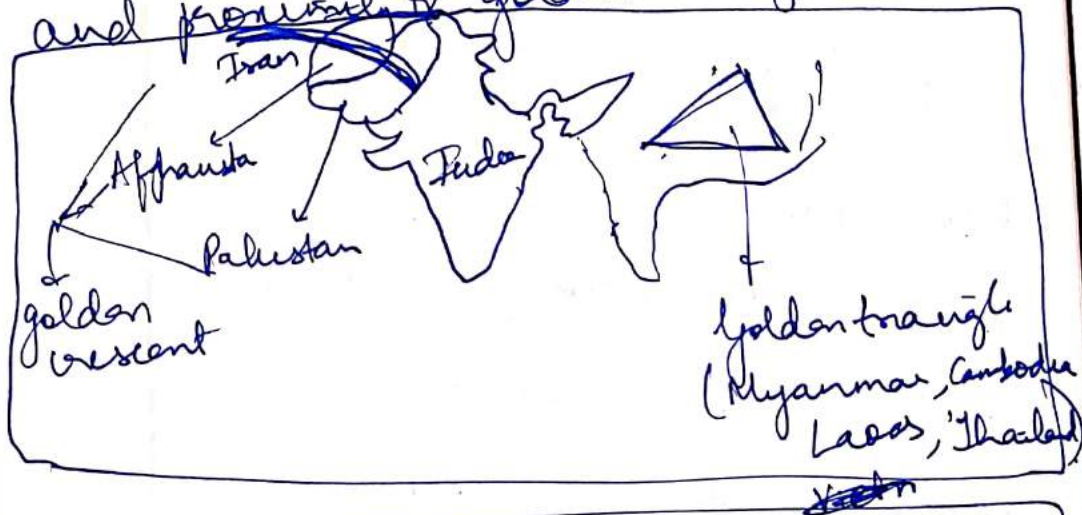
Extent of problem of narco terrorism:

- ① Spread to influential celebrities as seen from actors being caught by NCB. (e.g. Rhea Chakraborty).
- ② Widespread use of leading to addiction among youth especially in Punjab.
- ③ Drugs worth crores being regularly caught in airports like Hyderabad, Delhi,

④ Operations in darkweb which prevent tracking

⑤ Intricately linked to ~~terrorism~~
organized crime like those in human trafficking

⑥ Major challenge due to porous borders and proximity to golden triangle & crescent



Measures by govt to counter control program

① Nasha Mukht Bharat

② National Action Plan for Drugs
for rehabilitation, use of community
networks, better monitoring

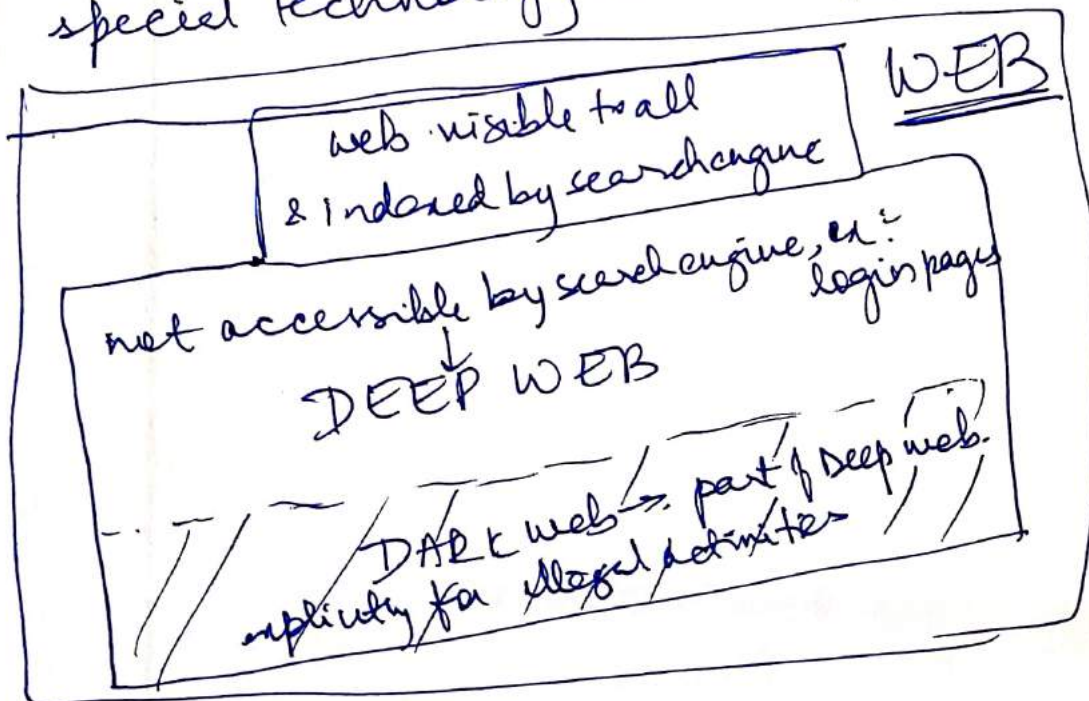
- ③ ~~Plan~~ Rewards scheme in customs
incentivizing staff to catch drugs
- ④ Better border management programs
like C.I.B.M., electronic fencing
- ⑤ State govt schemes like Punjabie
buddy initiatives

Thus, good steps have
been taken. Key will be their effective
implementation

18. The dark web can be an ideal platform for several criminal and terrorist activities. Discuss with examples. Also, suggest measures to tackle the misuse of dark web. (250 words) 15

डार्क वेब कई आपराधिक और आतंकवादी गतिविधियों के लिए एक आदर्श मंच हो सकता है।
उदाहरण सहित चर्चा कीजिए। साथ ही, डार्क वेब के दुरुपयोग में निपटने के उपायों का मुलाव
दीजिए।

Dark web refers to that part of web and is portion of the web that is used for illegal activities and is bound by special access i.e. not everyone can access it because it is protected by techniques like ~~and~~ encryption and needs special technology like TOR for access.



Ideal platform for several criminal & terrorist

- ① Protected by techniques like encryption, only accessible by special tools like TOR browser
↓
provides anonymity
- ② Difficult for security agencies to track the IP address
- ③ Identities are hidden
- ④ Thus, allows for easy terrorist activities like buying weapons, messaging
- ⑤ Allows for selling/buying illegal drugs like cocaine
- ⑥ Also used for illegal activities like exchange of child pornography

Measures to tackle misuse

- ① Research and investment by government security agencies to evolve better tools

for tracking

② Hiring talented manpower ~~for~~ and
upskilling of current cyberforce for
better capability

③ Improve intelligence gathering
mechanism.

④ Collaboration with private sector
for better research

⑤ Collaboration with foreign leading
governments like Israel, USA

⑥ Strengthen policy and laws like
IT Act.

While the IT act does
provide a good step for government to
control illegal activities like section
79A, above steps will further strengthen
India's ability

19. What is catalysis? Highlight the characteristics of catalysts. Also, elaborate why catalytic reactions are important for human beings. (250 words) 15
उत्प्रेरण क्या है? उत्प्रेरकों की विशेषताओं पर प्रकाश डालिए। साथ ही, उदाहरण प्रस्तुत करते हुए समझाइए कि मानव के लिए उत्प्रेरकी अभिक्रियाएं क्यों महत्वपूर्ण हैं।

Catalysis refers to biochemical reactions where products are broken down into simpler forms by the presence of catalysts.

(e.g.) Breakdown of fats

Characteristics of catalysts:

- ① Influence the rate of reaction
- ② Thermodynamically stable.
- ③ Themselves don't react with substrates thus being inert
- ④ Usually non-metallic
- ⑤ Presence is usually in small amounts quantity

Why catalytic reactions are important for humans:

- ① for ~~providing~~ facilitating biochemical reactions that help sustain life processes
- ② Breakdown of food ingested into ~~ATP~~ ADP, that can be used by cell for energy
- ③ They help maintain the right body temperature by controlling metabolic rate
- ④ They help in synthesis of proteins thus helping in transport of nutrients and maintenance of life
- ⑤ Play critical role in sustaining

the digestive system & so that
assimilation of nutrients can happen

Thus, catalytic reaction
are critical to keeping lining being
alive & healthy

20. Electric mobility offers solutions to the problems associated with climate change, growing fuel prices, and urban transportation issues. Discuss in the context of India. (250 words) 15

इलेक्ट्रिक मोबिलिटी जलवायु परिवर्तन, ईंधन की बढ़ती कीमतों और शहरी परिवहन के मुद्दों में जुड़ी समस्याओं का समाधान प्रदान करती है। भारत के संदर्भ में चर्चा कीजिए।

Electric vehicles
use electricity to charge themselves
and work instead of relying on
conventional fuel.

They offer solutions to problems associated with

① ~~Data~~ → Climate change

① Remove the reliance on petrol/diesel
as fuel. which are polluting

② No release of greenhouse gases &
pollutants like ~~SO₂~~ Sulphur
dioxide.

→ Growing fuel prices

① Since they depend on electricity, they
help insulate from the fuel prices

② As EVs are used

↓
Demand for fuel goes down

↓
prices go down thus stabilizing the
increasing trend

→ Urban transportation issues

① Provide sustainable model for
metros, e-rickshaws, e-taxis

② Reduce pollution associated with
vehicles in cities leading to
urban heat island effect

But, there are challenges with EVs

① Explosion of battery in vehicles reported

~~ex~~ (ex) Ola,

② Shortage of lithium reserves

③ Shortage of recharging stations
batteries

④ Limited manufacturing capability
currently like battery parts

⑤ Highly priced cars make them out of reach

⑥ ~~lack~~ ^{Increased} ~~energy~~ electricity consumption
further creating more demand for power
which can again increase coal based

⑦ Inadequate regulation by government.
This way ahead is to
incentivize setting up manufacturing
capability, invest in research to
reduce costs, enact comprehensive
policy for regulation

good steps have already
been taken like FAME 2.0, lithium
exploration (found in Mandya),
e-mobility mission