

19

VAJIRAM & RAVI

MAIN EXAM TEST SERIES (June 2022)

GENERAL STUDIES

Focused Test - 6 (GS Paper 3)

Sectional Paper - 6

Time allowed: Three Hours

Maximum Marks: 250

ADMIN. NO.:

NAME: ADITI VARSHNEY

MOBILE NO:
(compulsory)
EMAIL:
(compulsory)

Submission Date: 18 August

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions:

There are TWENTY questions printed in ENGLISH. All the questions are compulsory.

The number of marks carried by a question/ part is indicated against it. Word limit in questions, wherever 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.

Q No.	Marks	Q No.	Marks	Q No.	Marks
Q1	2.5 /10	Q8	3 /10	Q15	6 /15
Q2	3.5 /10	Q9	3 /10	Q16	6.0 /15
Q3	3.5 /10	Q10	2.5 /10	Q17	4 /15
Q4	3 /10	Q11	4 /15	Q18	4 /15
Q5	3.0 /10	Q12	4.5 /15	Q19	5.5 /15
Q6	4.5 /10	Q13	4.5 /15	Q20	4 /15
Q7	3.5 /10	Q14	4.5 /15	Total	78.5 /250

Follow these steps to avail the facility of mentoring –

1. Go through the soft copy of your evaluated answer sheet and analyse all the comments and suggestions given.
2. Call 96672-73133 between 11:00 am to 5:00 pm to fix your mentoring slot.
3. Please follow the mentoring appointment timings properly.

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IAS STUDY CENTRE LLP

24 AUG 2022

FOR EVALUATION

VAJIRAM & RAVI
IAS STUDY CENTRE LLP

25 AUG 2022

REVIEWED

DSR-122

Go through all these Micro & Macro Comments

All The Best...!

Try to improve your Areas and practice more to get more marks

All The Best



Parameters	Excellent	Very Good	Good	Average	Poor	Very Poor
Language and Articulation		✓				
Structure and Presentation			✓			
Conceptual clarity and Content			✓			
Number of Attempted questions	✓					

Evaluator/Reviewer Suggestions

Dear Aditi, you have attempted all the questions, that is appreciable, you have followed Intro-Body-conclusion approach which is also good. You have good conceptual clarity and your way of writing is also good. But some areas you need to focus upon.

Intro → you have give intro in every question, in question 13 & 19 intro is quite good, but in some question like 2 & 3; 4, 11, 19 you have provided a less sufficient introduction, in some questions data given should be checked, try to use official definitions and data.

Body:- you have provided mostly all the aspect asked in demand, in question; 3, 6, 7, 19, 14, Body structure is good, but in some question some aspect are not discussed, try to write those also, Also use flow charts efficiently and explain them accurately.

Conclusion:- in question 6, 9, 12, 14 conclusion is good, in other questions try to improve and summarize according to your content.

(Q. No.)

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(Don't write anything in this part)

(Answer questions in NOT MORE than the word limit specified for each in the parenthesis. Content of the answer is more important than its length.)

1. What are the key findings of the India State of Forest Report 2021 prepared by the Forest Survey of India (FSI)? Discuss the major changes in the forest area in India compared to the India State of Forest Report 2019.

(10 marks, 150 words)

Indian state of forests Report 2021

was released by Ministry of Environment

as a bi-annual 2 yearly survey report

on the state of Tree and forest cover in India.

Key findings

① India's forest area has increased to 21% from earlier 19% → 21.67% in 2019 report

② Tree cover has increased from 20% to 24% (i.e. forest areas plus the standalone trees)

③ North East has seen a net reduction in forest area. (due to construction) → cause of concern

mention related states who lost forest cover recently

try Also mention more information of ISFR as a on forest cover, mangroves etc

Report is released by Forest Survey of India which is organisation under ministry of Env. forest & climate change

Good use of data facts

try to check your data with its source about 2 to 3

Demand-2 is missing -> write about major changes of report with respect to
VAJIRAM & RAVI 2019-forest report

(Q. No.)

(Don't write anything in this part)

(4) Andhra Pradesh, Telangana have increased areas under forest now.

(5) Animal corridors have seen a rise in tree cones. (Tiger Reserve Corridors)

Try to mention state-wise and data accuracy

(6) Mangrove cones has increased as well under the keywords

however the figures are still not satisfactory because:

The statistics are taken by satellites and official records
 differs on ground reality
 The increased area too is very less to achieve Afforestation targets

Steps like Strengthening afforestation under CAMPA obligations, conducting EIA etc should be taken up to meet our Environment conservation targets.

valid presentation

This could be better than the findings of report. can be beneficial for the

Students should not write anything inside the box

Introduction	0.5
Body	1.5
Conclusion	0.5
Presentation	0
Marks:	2.5

Suggestions:
 - All the dimensions of demand are not well addressed. Try to provide those.

SDG's Achievements

2. How can Conservation Agriculture (CA) prevent loss of arable land while regenerating degraded land? Suggest some ecologically sustainable agricultural methods that can be adopted to minimize the effects of climate change on agriculture.

(10 marks, 150 words)

Conservation Agriculture is gaining momentum amidst threats of land degradation, climate change etc.

It is an agriculture which aims at conservation of resources, ensuring sustainability and food security

Preventing loss of Arable land and Regenerating degraded land

① By conserving water resources → decreased land salinisation
eg Drip & Sprinkle Irrigation

② By investing in climate change resilient technologies ⇒ can reduce threats
eg GM seeds - Drought and flood tolerance

③ Gypsum would help regenerate degraded land.

general point
try to improve
↓
mention what is CA and its principles

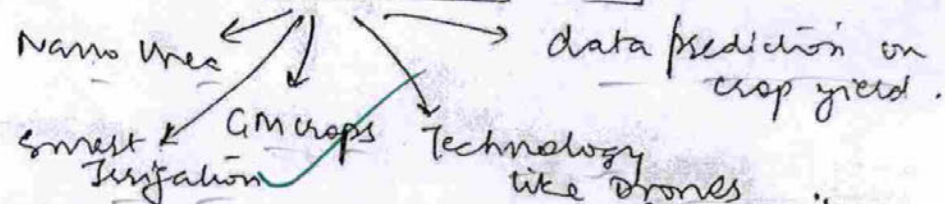
valid argument
↓
substantiated with examples

④ Balancing fertiliser usage.
could help prevent degradation

Ecologically sustainable Agriculture
⇒ Minimising Climate Change Impact

Try to explain your Argument in detail

① Climate smart Agriculture



valid point

② Intercropping, as per Agro climate zones
other ways like zero tillage farming
direct seeded Rice etc.

Try to provide more points with gravity

③ Crop insurance ⇒ Minimises Risk

④ less water guzzling crops - and more
drought based. Eg. Millets etc.

↓
Polyculture, hydroponic farming, zero budget farming, organic etc

Conservation Agriculture is the need of the hour amidst growing threats of climate change and increasing farm income & impact on Economic, Social and Environment benefits of CA in future generations.

Students should not write anything inside the box

Introduction	0.5
Body	2.5
Conclusion	0.5
Presentation	0
Marks:	3.5

Suggestions:
conclusion - write about the way forwards & impact on Economic, Social and Environment benefits of CA in future generations.
Change and increasing farm income
Conclusion

(Q. No.)

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(Don't write anything in this part)

main context.

3.

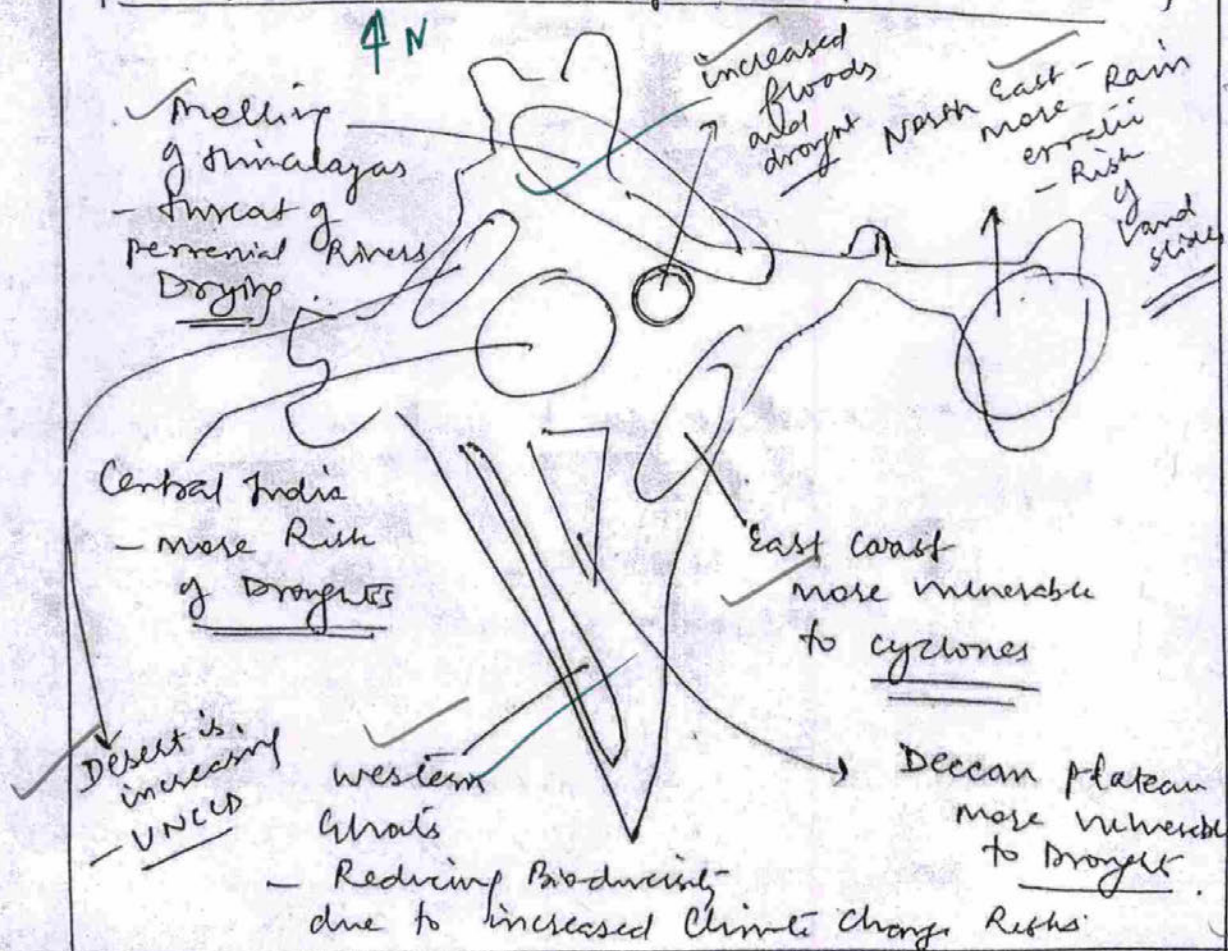
What do you understand by climate change hotspots? Identify the major climate change hotspots of India and the threats associated with them.

(10 marks, 150 words)

climate change hotspots refers to the areas where climate change is the most visible and creates problems around.

generic
 ↓
 explain properly the main context of question & also talk about the climate change

Major Climate Change hotspots in India



good presentation
 ↓
 well elaborated places in map

Try to write major climate change hot spot in details also, presentation is not enough to satisfy the demand.

.6.

Threats associated

→ Food security - becomes a challenge.

→ Heat waves in North India

↳ Summer health is affected.

→ Increased frequency and ferocity of Natural Disasters

↳ cyclones, landslides, floods and droughts, cloud bursts etc.

→ threat to life and material prosperity

→ Declines growth ⇒ compromises on Sustainable Development goals

like zero poverty, zero hunger etc

we need hazard and vulnerability mapping to devise area specific strategies to deal with the upcoming climate change induced threats.

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Avoid use of signs, use Alpha-numeric signs - Provide the missing Aspects of Demand.
Body	1.5	
Conclusion	0.5	
Presentation	0.5	
Marks:	(3.5)	

Avoid these sign/Arrows
Provide points
1-a-
2-b-
3-c-

Relevant points discussed

Try also to mention the role of govt in combating these threats and also write about the individual participation NDRF and NDMA etc

4. Towns that are resilient, liveable, productive and sustainable are based on the foundation of sound urban water management. Comment.

(10 marks, 150 words)

Town Management has become a crucial aspect to ensure sustainability and resilience in development keeping in needs of the environment.

try to mention about the urban water and its management while process of planning in progress.

Currently, town development is haphazard, unplanned and this gives rise to following issues.

- ① Unplanned land use pattern
- encroaches upon wetlands
- ② Improper drainage infrastructure
- Increased chances of flooding.
- ③ concretisation of the surface -
does not let water seep in or recharge groundwater.
- ④ As a result, towns are becoming prone to the phenomenon of

Relevant Arguments

try to focus Demand

try to mention -> how urban water management helps in creating resilient, liveable productive & sustainable towns :-

Urban flooding.

→ creates non liveable conditions due to pathetic water availability and also stress on Environment

↳ changing precipitation pattern

to ensure resilient, liveable and sustainable towns, water management is a must.

① Restoring wetlands.

② Rain water harvesting structures -

↳ Kul, Nuala, Beneath new Buildings

③ Proper planned drainage

to avoid any choking, water accumulation

④ Aquifer recharging due to biophilic and absorbent structures.

↳ Bioswales on Roads

Urban water Management is key to

sustainable growth. An example could be sought from Mayan civilization.
Students should not write anything inside the box

Introduction	0.5
Body	9
Conclusion	0.5
Presentation	0
Marks:	③

Suggestions:
- All aspect of demand are not dismissed, try to provide those.

Valid Points discussed

↓
Also discuss Nature Based and traditional Solutions to your Answers

Try to improve way forward

Learning from different Nations in managing water in urban areas
- Policy Policymakers
- to combat the water scarcity & climate change.

5. The frequency of marine heatwaves has increased in the Indian ocean in the recent times. In this context, account for the causes and impact of marine heatwaves. (10 marks, 150 words)

Intro should be in single paragraph

Marine heatwaves refer to the abnormally high temperatures in the water.

Try to specify the regions of their occurrence & provide recent example of their impacts on sea life.

They have recently increased in India (and elsewhere) due to growing climate change.

Causes of Marine Heatwaves

- 1) Climate Change \Rightarrow Rising temperatures increase the temperature of oceans.
- 2) Ocean currents are changing as a result of melting ice and global warming.
- 3) Urban Heat Island effect. \Rightarrow Marine bodies closer to cities and industrial towns.
- 4) Lack of capacity of oceans in absorbing any more heat.

valid point. generic points write causes - thermohaline - ENSO circulation - human induced global warming etc.

Impacts

- ① Threat to aquatic-marine life. especially corals ⇒ threat of destruction as they have a narrow temperature toleration
- ② Increased temperatures in water ⇒ reduces Biological Oxygen and further threatens Biodiversity
- ③ lessens productivity of oceans.
- ④ Increased threat of Natural disasters eg cyclones - warm water is a fuel to cyclones ⇒ increased ferocity and strength
- ⑤ Can impact terrestrial climate due to convection currents ⇒ human health affected, increased energy needs etc.
Both short term steps (adaptation like building cool infrastructure) as well as long term (GHG reduction) are needed

Introduction	0.5
Body	20
Conclusion	0.5
Presentation	0
Marks:	3.0

Suggestions:

- Try to touch the variety of Aspect related to demand.

Students should not write anything inside the box

valid points
↓
only climatic impacts discussed
try to expand other dimensions as well like
Economic impacts
Social impacts on community of coastal areas.
Flooding, droughts
Tourism is impacted by this
This could be improved
↓
Means to combat the MMS's international & national contribution of public & private entities.

6. 5G can help achieve the goal of inclusive growth of Indian economy. Discuss. (10 marks, 150 words)

5G refers to the new evolution in internet speed. It holds a unique promise for achieving inclusive growth for India.

Achieving Inclusive Growth with 5G

1. Increase in Employment - due to new investments by industry in 5G - tourism, hiring more people etc.

2. Boost to Research and innovation ecosystem

⇒ 5G is the Backbone for Industry Revolution 4.0 → Artificial intelligence, Machine Learning, Internet of Things etc.

⇒ will bring more innovations and help achieve growth.

3. Helps in policy making and e-Governance

⇒ Smart cities around Internet of Things and 5G-wifi.

generic
↓
try to write what is 5G and what are features of 5G. also mention what is inclusive growth.

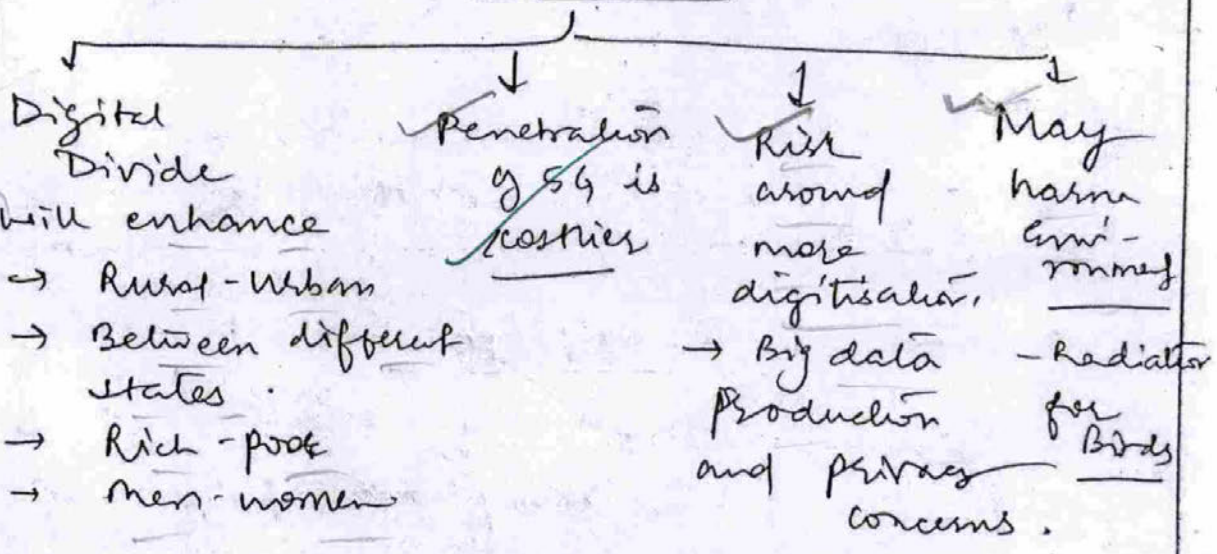
write about the linkage of 5G with inclusive growth
e.g.:-
- Reduce digital divide
- Rural-urban divide
- Health & Education sector.

Relevant Points

- ④ More internet penetration \Rightarrow especially to rural & hinterlands.
- ⑤ helps in achieving speed of communication less latency in business operations.

However, there are concerns

There can be discussed in favour of 5G, which can be achieved through 5G. valid conclusion.



5G needs to be installed along with ensuring that it plugs the divide between internet 'haves' and 'have nots' - by making it affordable and whisking for growth for all.

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Try to link the 5G with the sections of society in your answer.
Body	3	
Conclusion	1	
Presentation	0	
Marks:	(A5)	

7. Do you think Nuclear Energy can play an important role in helping India meet its Net Zero Emission commitment?

(10 marks, 150 words)

Try to check your data again

NETE
 NITI Aayog has predicted that Nuclear Energy could become about 20-30% of the energy mix of India by 2050 from the current 3%.

Try to mention about the nature of Nuclear Energy and its benefits for and Net zero emission targets of India.

⇒ This signifies the potential that India sees in Nuclear energy for meeting its clean energy commitment.

Nuclear Energy - an important role in meeting Net zero Commitment

valid Arguments.

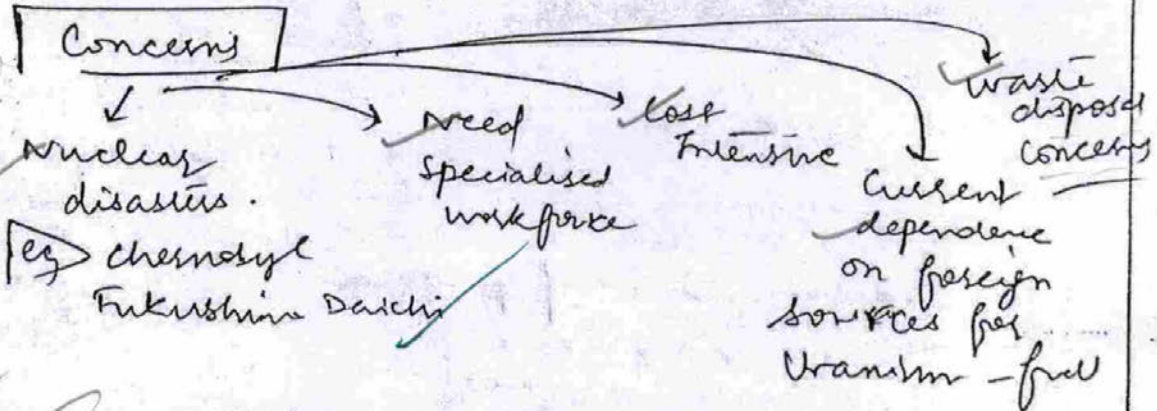
- ① India's growing population (1.7 Bn by 2050) needs more energy.
 - ⇒ could be utilised from nuclear power ⇒ its clean, utilises less space and consistent (unlike solar)
- ② The environmental costs of other clean energy sources are huge.
 - ⇒ Dams are environmentally unsustainable

14. you can give examples of fossil fuels as well which are more carbon emitters.

(3) Nuclear Energy - 3 stage program
 could utilise our Thorium Reserves
 (25% of world's)
 ⇒ more significance for investing in
Nuclear Power.

(4) It's more effective than afforestation and
 other such measures to achieve
clean energy targets.

(5) Helps reduce dependence on fossils,
 and all other conventional fuels.



India needs to carefully balance between potential of Nuclear power as well as its possible concerns.

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Intro could be better - Try to explain the less discussed Areas.
Body	9	
Conclusion	0.5	
Presentation	0.5	
Marks:	(3.5)	

Provide teaching to your arguments
 ↓
 - Availability of Thorium
 - Clean Energy
 - Reliable and less space consuming.

nice approach
 ↓
 Try to elaborate more in detail.
 Try to improve

way forward
 ↓
 - Safety Standards
 - Faster Environmental Clearance
 - global collaboration for fuel & technology transfers.

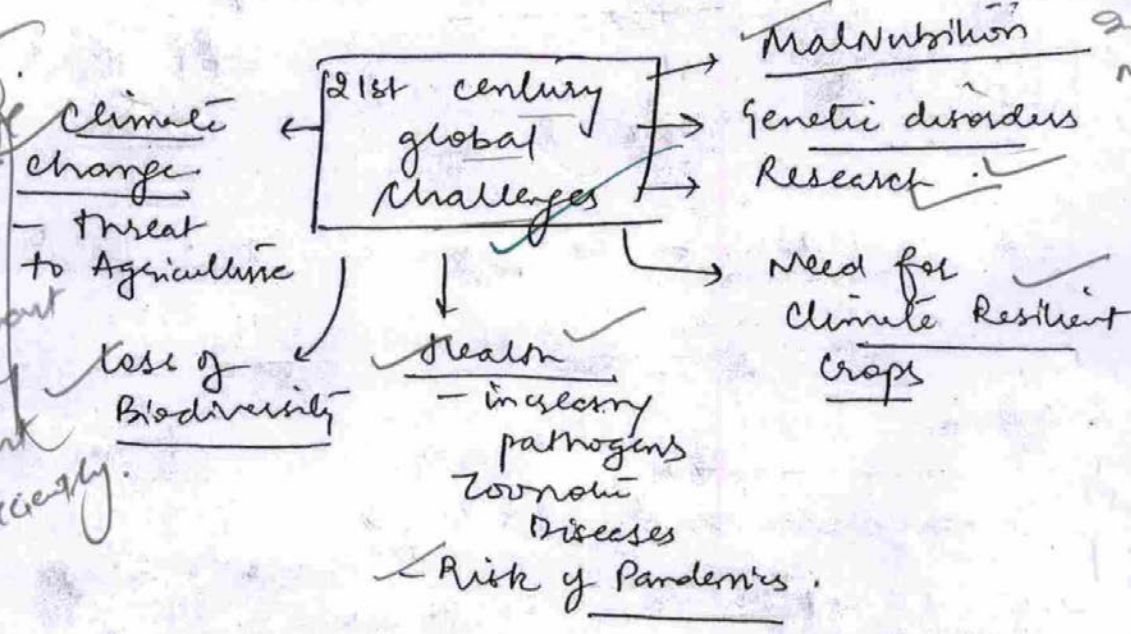
8. In what ways can biotechnology help in dealing with 21st century's global challenges?

(10 marks, 150 words)

Biotechnology refers to the application of Biological Knowledge to produce goods and services for humans.

→ 21st century could be improved
 ↓
 write definition of Biotechnology and its benefits in different sectors - Agri, Subsidy, medicine etc.

Try to elaborate
 ↓
 Avoid flow-chart in starting of Body part use it efficiently.



Biotechnology helping for these challenges

- ① In Agriculture - helps producing climate smart solutions → Food security
- GM crops - drought and flood resistance
 food fortification → addressed malnutrition

Try to frame your argument in proper sentences
 Avoid use of Arrows & linkages method.

② Health Risks - ~~veg~~ mRNA vaccines.

- ✓ Stem cell Therapy (Leukemia)
- ✓ Genetic Therapies for disorders like Diabetes type 1, Sickle cell Anaemia

③ producing transgenic organisms

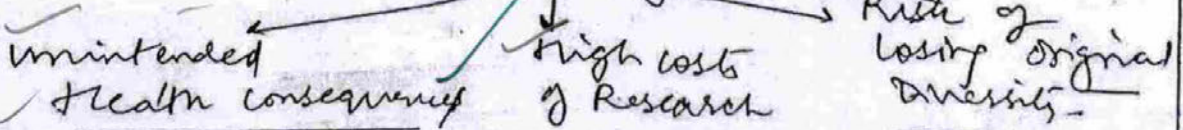
for withstanding climate change and bringing back extinct species:

eg wooly mammoth
Giant Panda

⇒ Conserving Biodiversity

④ Industries - to produce newer products like sugar syrups, alcohol, tissue cultured meat.

⑤ Biotechnology however has certain concerns and challenges.



India has a favourable Biotech potential (13th largest industry) - It should capitalise on the same.

students should not write anything inside the box

Introduction	0.5	Suggestions: - Try to discuss the points instead of just mentioning keywords in flow chart.
Body	1.5	
Conclusion	0.5	
Presentation	0.5	
Marks:	③	

Relevant Points
↓
discussed with me of examples

Try to explain these keywords

conclusion try to improve

what steps should be taken to boost the industry - legal backing and educational among masses about biotechnology

9. What are Non-Fungible Tokens (NFTs)? Write down its applications in real life? (10 marks, 150 words)

Non Fungible Tokens are like cryptos or digital assets which can be traded online. However, they have a unique identity set and cannot be exchanged like cryptos.

} generic intro
↓
NFT is not well explained
- state any examples of NFT's

Applications in Real life

① Digitalising unique assets ⇒ conserves it better.
eg Paintings etc.

② Increased access to people, of Rare pieces of art. - via Internet. eg Artefacts

valid point { ③ Helps in monetising physical goods ⇒ realises money and potential of such items.

④ People can get a larger access to display their art and creativity.

} generic
↓
Try to write broad dimensions

- meta use of application
- on the cinema, Theatre reviews
- Digital Market.

(Q. No.)

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(Don't write Anything in this part)

It has added advantages

works on Blockchain
- enhanced privacy

more encryption
also leads to less chances of piracy

can be easily traded
- Best discovery of prices via cryptocurrency

NFTs are indeed revolutionising the internet space but it also has limitations in the sense that they cannot be traded, there is no tangible asset etc.

Students should not write anything inside the box

Introduction	0.5
Body	1.5
Conclusion	1
Presentation	0
Marks:	(3)

Suggestions:

- Try to touch the broad dimensions and also explain the background of flow chart in detail.

Try to explain in detail also write selected examples

valid conclusion

10. What do you understand by Artificial Intelligence (AI)? Discuss the significance of AI in the implementation of National Education Policy 2020.

(10 marks, 150 words)

560
D2

Artificial intelligence refers to the emulation of human intelligence by a machine.

generic
↓
write definition of AI, its advantages and examples.

It has a unique significance in almost all spheres of life.

AI in National Education Policy 2020

also write about the Aims or features of National Education Policy 2020 in brief

① Boosts Innovation culture in schools

eg) Atal Innovation Mission and Atal tinkering labs.

② Helps supplement Teacher's Training and teaching in classrooms

eg) Smartboards

↓
eg) Online Training modules

Amid this

③ Helps in evaluation - for children's tests and learning abilities

valid points Advantages discussed with examples

④ helps keep track of student's growth via continuous evaluation.

⑤ helps target resources - by informed data statistics around learning and student needs.

Yes VDISEY platforms could be enhanced by changing AI Algorithms

⑥ helps in students choosing careers for themselves.

⑦ By making analysis of the courses available, counselling etc

AI has to be made more accessible so that its benefits could be realised by all students.

Checklist
↓
DASSY features
Digitally Accessible
Info. Systems

underline
the keywords

generic
arguments
↓
this is prevalent
in present system
also.

Try to improve
How the AI help
in building

Students should not write anything inside the box

Introduction	0.5
Body	1.5
Conclusion	0.5
Presentation	0
Marks:	9.5

Suggestions:

- D-I is not well discussed
- Try to mention as

National Education Policy-2020's features & policies.

digital skills and digital literacy through national education Policy-2020
- Govt. efforts in AI
in a scheme
This goal.

11. Provide a brief account of the vulnerability of India to cyclone-related hazards. With reference to the National Disaster Management Authority (NDMA) guidelines, discuss the measures that need to be adopted to mitigate the impact of cyclones.

(15 marks, 250 words)

India has a ^{more than 9500 Km} 7500+ Km long coastline which makes it highly vulnerable to cyclone Related hazards. Further, its location in the Tropical Belt also exaggerates its vulnerability.

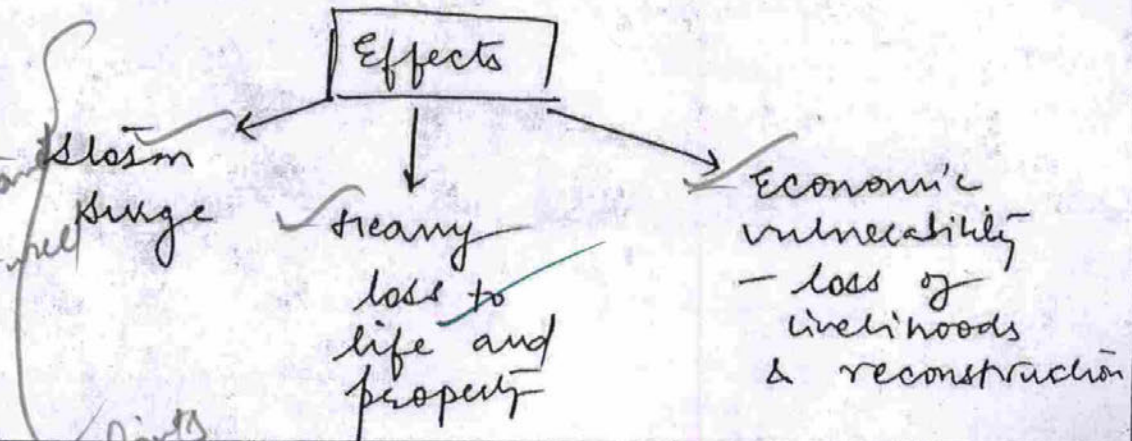
Try to mention impacts of cyclones on land and coastal areas of India.

Cyclones are a turbulence of air system which arise over low pressure water systems (Seas, oceans).

valid point

This could be mentioned in intro as well

Try to address the demand in structure form



Explain these points with recent events in Indian waters.

valid examples

Famous cyclones to hit India

eg) Tauktae, Fani, Yaas etc.

→ National Disaster Management Authority
(write full name)
of institution

NDMA Guidelines

Relevant information

National Disaster Management Authority (NDMA) is a statutory body chaired by Prime Minister which releases

policy and guidelines related to Natural disasters.

Measures to mitigate impact of cyclones

make it brief

① Investing in structural and non structural measures (as per

Sendai framework)

↓
Shorten your examples (in one or two line)

eg) Building Round houses (to lessen the speed of cyclone with impact)
cables underground (as in Odisha)
to manage post disaster communication.

(2) Colour coding of the cyclones and Real time monitoring (satellites)

valid Arguments

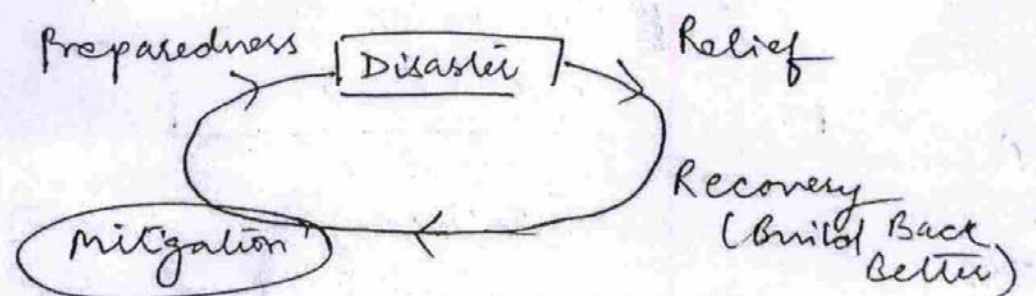
(3) Vulnerability assessment and hazard mapping. eg Coastal vulnerability Index - by INCOIS

(4) Steps to Mitigate climate change

Indian National Centre for Ocean Info Services

eg Delivering on NDCs - of Paris climate agenda - International cooperation - Nationally determined contributions

Avoid use of Abbreviations in your Arguments



Mitigation is the most strong pillar of Disaster Management, and effective steps should be taken.

generic
↓
write about the

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Demand is well structured - Avoid stretching of points - overall good less due to generic Activity & How NDMA guidelines are adopted in more efficient ways to counter these damages to property & public.
Body	3	
Conclusion	0.5	
Presentation	0	
Marks:	(4)	

12. How do E-Waste (Management) Rules address the issue of E-waste recycling in India? Also, discuss the various impacts of e-waste on the environment.

(15 marks, 250 words)

According to Ministry of Environment, India produces about 3 mn tonnes of E waste annually.

This is the 3rd highest figure internationally.

Impacts of ewaste on Environment

E-waste or Electronic waste refers to the discarded electronic gadgets which are thrown as waste.

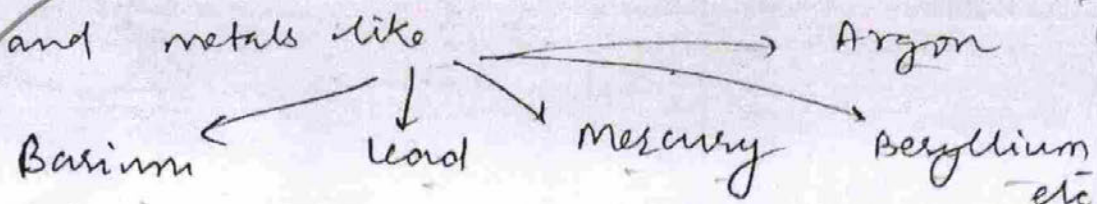
They are not hazardous if disposed off properly.

But otherwise they turn hazardous because →

Recheck your fact
↓
around 10.4 million tonnes in 2019-20
Source - Dec 2019 news

This should be mentioned in intro part.

contain heavy and carcinogenic elements



try to write example in sentence form.

Better Ashirabad may can be done of this argument.

can impact health

toxic elements in soil
 also pollute air if released.
 by improper disposal like burning.

try to write more points

E waste Management Rules

- water contamination
- neurological disorders
- Bioaccumulation of toxic elements.

Its very important to address recycling for e-waste.

① Extended producer Responsibility
 i.e, manufacturers, producers will collect the waste produced by their gadgets. ⇒ send for Recycle

✓ valid point.

② Involving unorganised / informal waste collectors with the formal chain.
 ⇒ for proper disposal and Recycle.

generic ↓ it is not mentioned

in e-waste official guidelines.

3) segregation at the source.

eg) guidelines and awareness on the same is created.

4) Targets for collection have been specified. ✓

5) circular economy

However, following challenges remain

poor segregation - generally people mix e-waste with common waste.

No proper enforcement of EPR obligations

provide full name of Keyword (extended producer responsibility)

Informal waste collections remain in a different chain - not collaborated

Steps like outsourcing recycling by using certificates, proper awareness through print and social media on segregation and penalising producers could help in

Students should not write anything inside the box

Introduction	0.5
Body	3
Conclusion	1
Presentation	0
Marks:	(4.5)

Suggestions:

- Intro part should be focused

- Second demand is not well discussed - try to write on this.

the Challenges

valid Argument
Also link your points with Responsibility on Regulator, Refinisher etc.
Govt presence.

valid conclusion
Govt Summarization done

13. What are the salient features of the National Policy on Biofuels, 2018? Enumerate the benefits of deriving energy from biofuels in contrast to conventional energy generation.

(15 marks, 250 words)

Biofuels refer to the fuels derived from Biological produce like crops, waste etc. It's become a potent alternative to conventional energy source in the recent years.

valid also part
↓
provide any examples of Biofuels
(Biodiesel, Bioethanol)

National Policy on Biofuels

① Employing Biofuels in energy generation as well as running vehicles

Try to follow
Dimension
↓
Argument
↓
Example

② Encouraging Ethanol production (by Sugarcane fermentation or crops like Maize etc) and Blending with petrol.

Try to mention about the latest Amendment in 2022.

eg) E20 target. Blending 20% ethanol in petrol by 2025.

flexible fuel vehicles
or dual fuel

(Don't write
Anything in
this part)

mention
FAME name
↓
It is also known
for electric
mobility

(3) Promoting Flex Fuel Vehicles (that
can run upon Biofuels)

⇒ schemes like FAME (Fatty acid
methyl ester)

(4) Promoting Biofuel crops and increasing
area under produce

eg) High FRP rates for sugarcane
(Fair & Remuneration prices)

(5) This will help in achieving clean
energy targets and reduce fuel
import Bills.

well
discussed
Arguments

**Benefits of Deriving energy from
Biofuels**

Substantiate
with
example

(1) clean source. Produce less Green
house gases compared to conventional
(coal, oil etc) ⇒ which unlock new
carbon.

(2) helps in reducing import dependence
gives thrust to indigenous economy
⇒ more employment and less deficits

e.g. Blend of Ethanol reduces
fiscal deficit from oil
imports.
(around 28% of total)

(3) Biofuels also have a cooling impact on surroundings as shown by various studies.

Provide source of this information

(4) There is no cost of mining, rather farmer's income increases.

However these are challenges

(1) Production of Flex fuel vehicles is slow and costly

valid Arguments

(2) Biofuels may give less energy compared to conventional fuels and also risks of corrosion of engine as Biofuels attract dirt.

(3) Food insecurity threats amidst diverting food crops for fuel

A well calibrated policy balancing energy needs, economic costs and impact on environment is needed.

This could be improved

Students should not write anything inside the box

Introduction	1
Body	3
Conclusion	0.5
Presentation	0
Marks:	4.5

Suggestions:

Conclusion -> Benefits for Environment as well as mankind

- way forward -> funding,
- Awareness among people,
- Early availability of biofuels
- govt. efforts for promotion of this.

14. What are the various causes and effects of fire disasters in urban area? Enumerate the initiatives of the Government of India to deal with such incidents.

(15 marks, 250 words)

generic intro
↓
what is urban fire concept
Provide any recent case of urban fire as example to support your intro.

In the recent years, fire disasters have potentially increased in many urban areas.

eg) Hospital fires have become a new menace. (seen during covid)

Causes of fire disasters in urban areas:-

(1) Improper or no implementation of Fire safety Regulations in Public/ private Buildings.

⇒ No audit is conducted.

(2) Increased energy load and demand ~~rather~~ more than permitted or allowed.

(3) Illegal constructions and diverting wires ⇒ threat of fires and short circuits multiplies risk of urban fire.

valid point
Avoid cut mistakes

④ poor emergency plans in case of fire breakouts. Point already discussed

⑤ Increasing Temperatures ⇒ heat waves and more demand of Energy

Effects of Fire disasters

① loss of life and property especially when it is in a public building or hospitals.

② May spread very fast to other buildings if not extinguished.

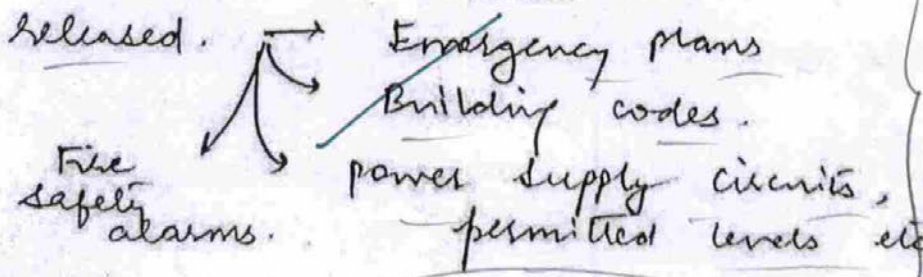
③ Releases toxins in atmosphere - upon burning of chemicals.

Try to add more social dimensions

- loss to Environment
- Power outages
- displacement of population
- contamination to Natural Resources etc.

Steps taken by Government

① Fire safety Guidelines have been released.



Associate your content in suitable way of explanation

② Guidelines for Fire Extinguishers

Fire Emergency Services

Generic points write arguments from the point of govt. of govt.

Rule of NDR & fire fighting services to UTS/VLB's National Building code funding from govt. and Budget allocation.

Relevant conclusion & way forward discussed as govt.

- (3) creating awareness through print media.
- (4) Auditing mechanism in place.

However, due to negligence on the part of authorities, and improper audit standards and growing energy needs create a fertile ground for increasing fire disasters. (This could be written in introduction)

Steps like penalising authorities, building owners, proper audit standards, emergency plans, safety alarms need to be put in place. Further awareness should be created through creative means (like social media campaigns) to reduce such incidents in future.

Students should not write anything inside the box

Introduction	0.5	Suggestions: — demand is well structured, but need elaboration of given points.
Body	3	
Conclusion	1	
Presentation	0	
Marks:	(4.5)	

15. Discuss the extent of biodiversity loss and its multi-faceted impacts. What steps have been taken at the national and international levels to arrest biodiversity loss?

(15 marks, 250 words)

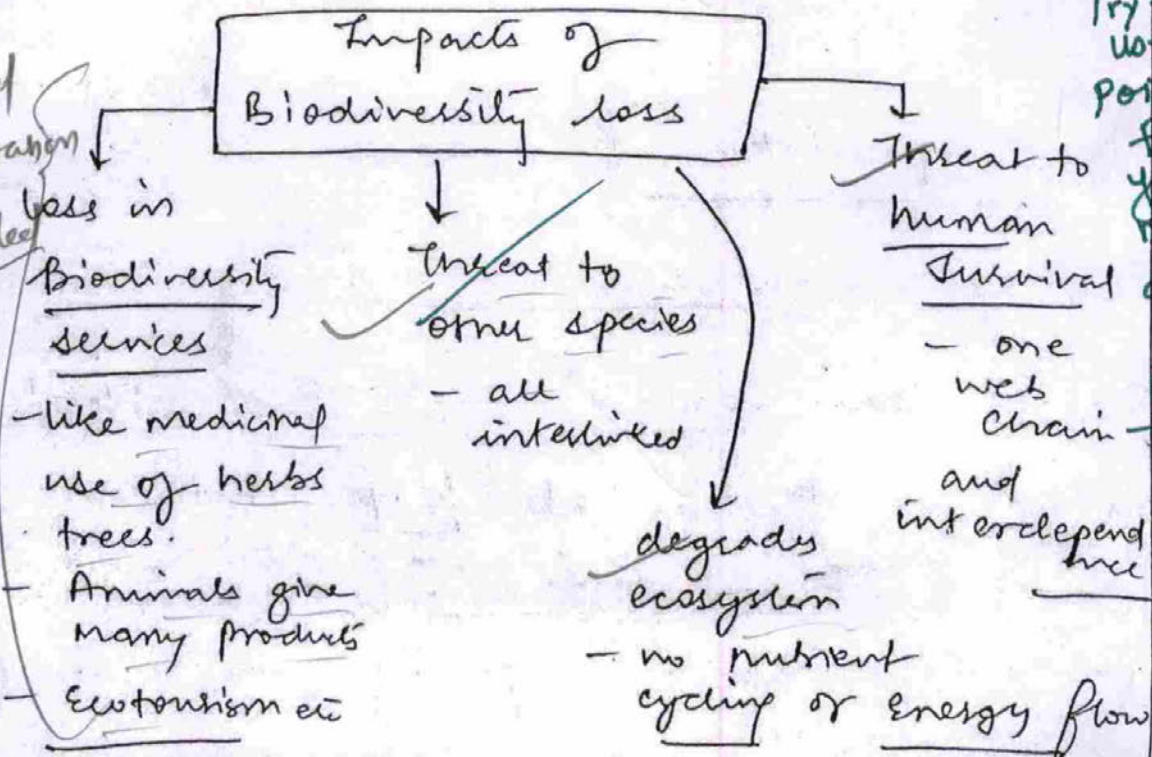
Biodiversity loss refers to the destruction and loss of species, ecosystems and genetic diversity.

Relevant introduction
↓
nicely discussed with report.

Avoid this

⇒ According to Living Planet Index (WWF) - world has lost about 68% of the vertebrate Biodiversity in the past 5 decades.

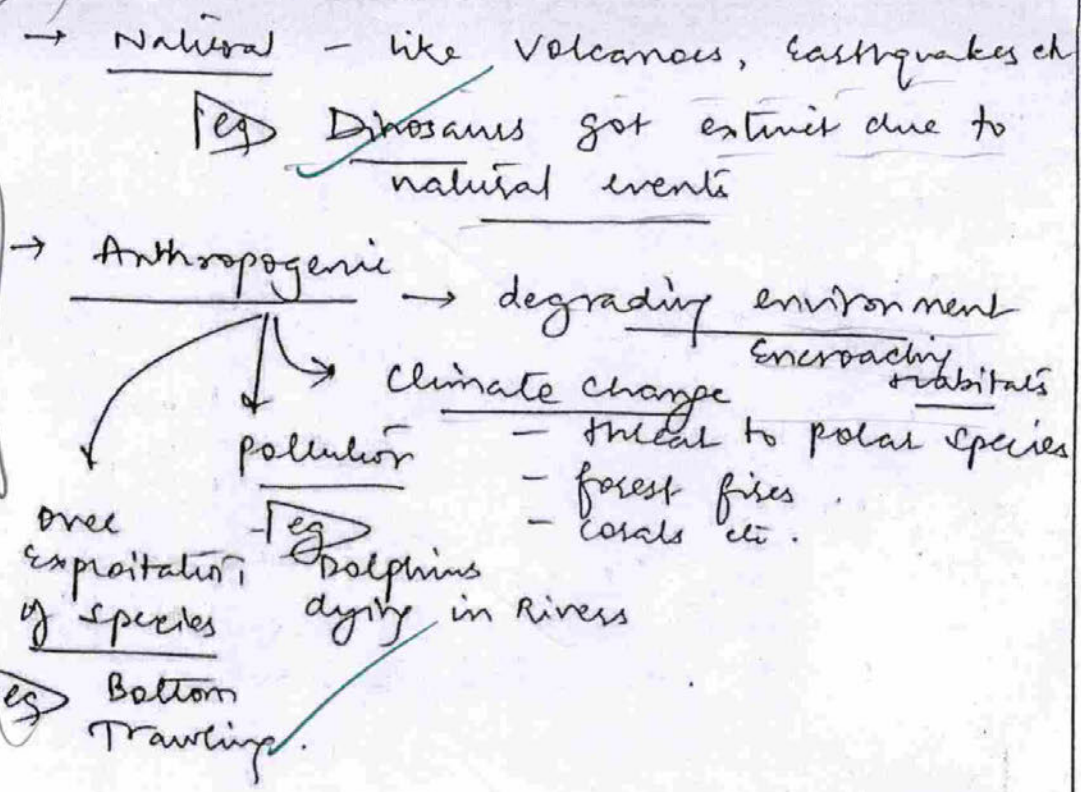
good presentation provided



Try to use point format for your main demand of question
↓
use flow chart etc for your extra content

Causes of Biodiversity loss

Try to provide proper articulation to your content in explanatory nature.



Steps Taken

At international level :-

- ① Convention on Biodiversity (CBD)
 - it aims at proper and sustainable use of Biodiversity
 - India is a party to it

→ Convention on International Trade in Endangered Species

② CITES - regulates international trade in Biodiversity.

③ Convention on Migratory species (CMS) or Bonn convention. Takes care of Migratory species and protection.

eg) Great Indian Bustard.

④ Man and Biosphere Programme etc

Steps at National level

① N. Biodiversity Act (NBA) - 2002 creates an institutional framework in sync with CBD

② wildlife Protection Act 1972 → protected areas like National Parks etc.

③ Labs, Botanical Gardens, Research and development etc.

④ Preventing illegal poaching, threats by patrolling - security forces like BIF.

Biodiversity is a unique gift of Nature and has to be preserved for sustainable development. Students should not write anything inside the box

valid points. well discussed points as per demand of question.

try to improve concluding part.

Introduction	1
Body	4.0
Conclusion	0.5
Presentation	0.5
Marks:	6

Suggestions:

- Try to use flowcharts efficiently
- Avoid Abbreviations.

16. Private sector participation in the space sector will help place India's space industry on the same pedestal as its global competitors. In this context, discuss the steps taken by the government to facilitate private sector participation and challenges faced by the private sector in this regard.

(15 marks, 250 words)

Relevant
intro
↓
good
data
provided

India's space Industry is the
6th largest space economy, however
it only spends about $\frac{1}{10}$ th of the
NASA's (US) budget and commands
only 2% of the global space economic
share.

⇒ This makes it imperative for
increasing private sector participation
to enhance our space industry to the
global competitive levels.

good
flow
↓
linking
intro with
body
part.

eg NASA has a thriving private
sector - conducts Research & Develop
and invests in exploration
i.e., SpaceX, Blue Origin etc
and their projects like Starlink,
Falcon Heavy launch vehicle etc

Steps taken by government

① A Draft Policy and Bill for encouraging private sector, regulating it flexibly.

eg INSpace as a neutral body between government and private sector.

Good Structuralists

valid points ↓

provided with select data + examples

② ISPA - Indian Space Association (2021)

as a private sector body to enhance their lobbying power and giving suggestions by private sector. ⇒ engaging them in policy making.

③ NSIL - New Space India Limited

for handholding support to private sector, technology transfer etc. Giving demand based services.

④ Funding and incubation to startups

eg Bellatrix, etc.

⑤ 100% FDI is allowed

however there are Challenges

Generic Points

- ① Lack of capacity of private sector.
⇒ space sector is cost intensive.
- ② Lack of incubation support
⇒ Missing Industry - Academia partnership
- ③ Lack of interest shown by private sector
⇒ Gestation periods of Research are high & unassured Returns.

↓
Broad wide range arguments
- govt. domination
- infrastructure & facilities
- Regulatory mechanisms
- IPR Protection issue etc.

WAY AHEAD

- ① Bring the legislation to facilitate private sector participation.
⇒ Reduces distort.
- ② Incubation support ⇒ continued.
- ③ Global Partnerships - leveraging groups like Quad, ISU on same.
- ④ A functional triad between government, academia and Industry

Try to link this with content of 2nd
↓
FDI, space policy
Space diplomacy among various countries

Space Economy is a sunrise sector which can boost our growth.

Students should not write anything inside the box

Introduction		Suggestions: - intro is good - conclusion needs to be focused.
Body	1	
Conclusion	0.5	
Presentation	0.5	
Marks:	6.5	

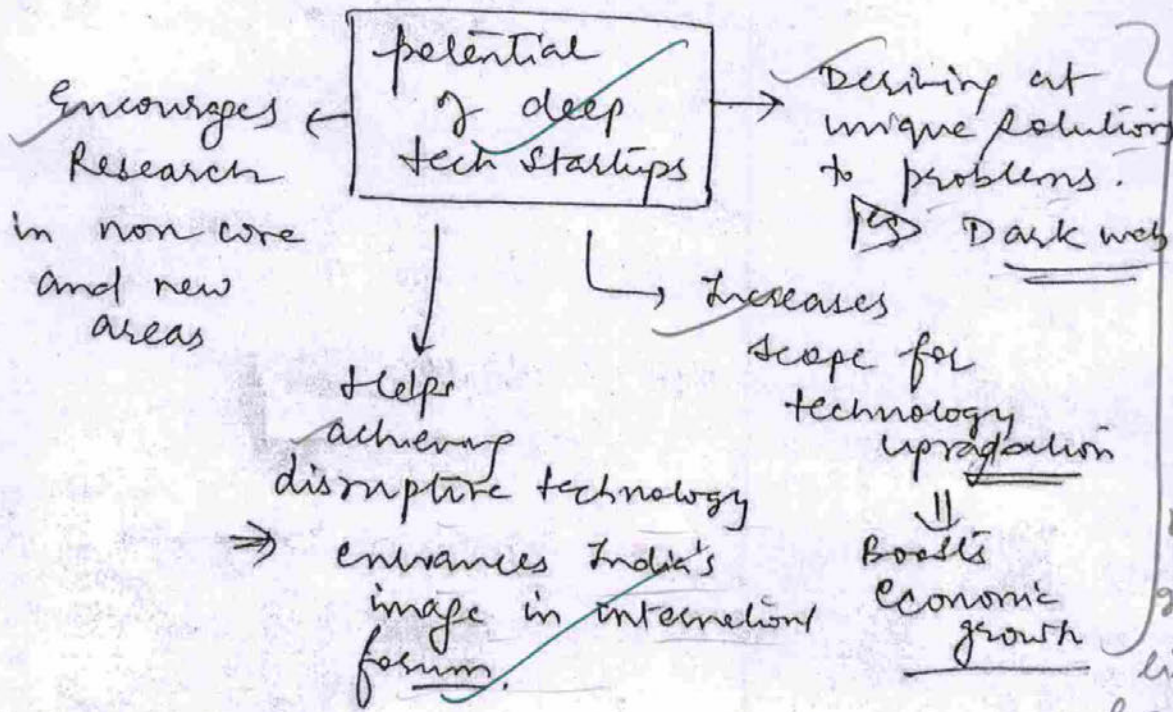
Conclusion could be better
↓
Try to improve

17. What is a deep tech startup? Discuss challenges in the development of deep tech startup ecosystem in India? Also, give suggestions to address the challenges.

(15 marks, 250 words)

Deep tech startups refers to the startups which deal with newer technologies like Deep learning, machine learning, Dark web etc. which are highly technology intensive.

valid intro part. ↓
discuss with examples



try to link your points with the different areas of Agri, AI, industry, life sciences for broad view.

Challenges

1. lack of Funding and incubation support

Relevant Argument



But lack of explanatory structure

try to focus on elaborating your points.

② lack of necessary infrastructure
eg) labs, electricity coverage, internet penetration in hinterlands.

③ long gestation periods
Arid such → dis inhibits participation and engagement with deep technology.

④ Unassured Returns
further disincentivises Research

⑤ lack of Research orientation and ecosystem
⇒ Rote learning orientations since schools.

⑥ Patent Regime - not encouraging.

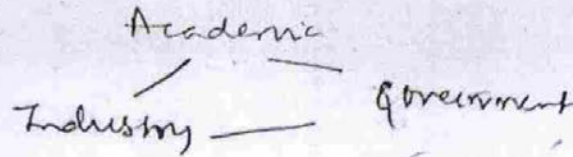
Steps to address challenges

valid points

① Investing in Research ecosystem
eg) Aatmanirbhar Innovation Mission.

② Incentivising Research ⇒ Incubation support incentives
eg) Startup India Performance linked incentive scheme.

3) A functional Triad



} Try to use the sentences to clear your view.

4) Global cooperation

eg renewable international groups for investments, technology transfers.

} At first provide information to your point then give example to support this.

Try to avoid repeating points already discussed in 2) point.

5) Supporting long term Research startups by financial support, handholding etc.

We need to incentivise Deep Tech startups as they could be potential game changers for the economic growth and newly emerging problems.

} Try to summarize with use of deep tech in Socio-Economic development - Atmanirbhar mission - In achievement of Sustainable development goals & Healthcare, Edu. Secors etc.

Students should not write anything inside the box

Introduction	0.5
Body	2.5
Conclusion	0.5
Presentation	0.5
Marks:	(4)

Suggestions:

- Better Articulation should be focused otherwise content is good.

18. What is xenotransplantation? Does it have the potential to become the future of Organ transplantation?

(15 marks, 250 words)

This could be better
↓
it also includes
tissues, cells,
fluids for
transplantation,
implantation
or infusion into
human body.

Xenotransplantation refers to
transplantation of one species' organs
into another specie.

eg) Transplanting of Pig heart in a
human recently in united States.

Potential and significance of
xenotransplantation

Relevant
Arguments

- ① will reduce the scarcity of organ donation.
- ② will result in increased life expectancy and fewer deaths due to organ failures.
- ③ Boosts research and development around human anatomy.

however, this is a too optimistic scenario

Challenges to Xenotransplantation

① The science around it is yet not developed fully

Try to use headings

valid 2 points given

② Risk of diseases (zoonotic) spreading from animals to humans.
⇒ Mutations in pathogens.

↓ medical challenges - Risk of diseases

③ Animals have a different organ structure and life cycle

- Economic challenges

eg) Pigs organ cells die out quickly than humans.

- legal challenges. etc.

⇒ threat still prevails on organ failures.

Then write your content accordingly.

④ Immuno Rejection threats are potent in xenotransplantation.

⑤ Ethical Angle - to this practise - does not give it a favourable environment

Relevant Point
↓
write briefly in one or two lines.

eg) Social cultural beliefs of people regarding accepting organs and using animals for human life.

However, there still might be a chance to develop xenotransplantation as our future.

Genetic
↓
It is still in progress under some specified cases.

Continued Research and Experiments

Bringing about Genetic Reassessments in Animals via cloning etc. to suit human needs.

Try to provide way forward - use of gene editing method legal backing should be provided Medical Advancements etc.

Steps like encouraging people for voluntary organ donation meanwhile Research continues could be a potent step as well as looking into the Regulatory challenges. = for future scope of xenotransplantation

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Try to use heading & Subheadings - focus on introduction part.
Body	3	
Conclusion	0.5	
Presentation	0	
Marks:	(4)	

19. What are the different types of Intellectual Property Rights (IPR)? Discuss the significance of a strong IPR regime in India.

(15 marks, 250 words)

Intellectual Property Rights (IPR)

refers to the exclusive use rights given to the creator of any new

Research, Content, Invention etc - such that they can decide on the use of their creation

Try to use commas and, or etc

This would be better
↓
mention diff. fields (Artistic, literary, music, designing) etc

- also you can quote data as information from WTO, WIPO etc.

Different types of IPRs

① Copyrights - around creative and original works in literature, movies, music, painting etc. ⇒ for lifetime

eg Copyright on Books.

or depends on the cases

② Patents - IPR on a new invention gives about a particular period. ie 20 years for its exclusive use by original creator.

eg Patents on vaccines.

It is exclusive right of inventor to decide when, where and how to use his/her invention.

Relevant Arguments
↓
will discuss with examples

③ Geographical Indications - or special products from a particular geographical area.

eg GI on Basmati Rice.

④ Trademarks - Brands and their marks which give them unique recognition

eg logos of Brands like Nike, macdonald. (m)

⑤ Industrial designs - or unique creative product designs.

eg iPhone body design

⑥ Trade secrets - Business formulas etc.

eg coca cola recipe.

Try to mention about TRIPS

Regime of India & then provide significance of this for India as per demand

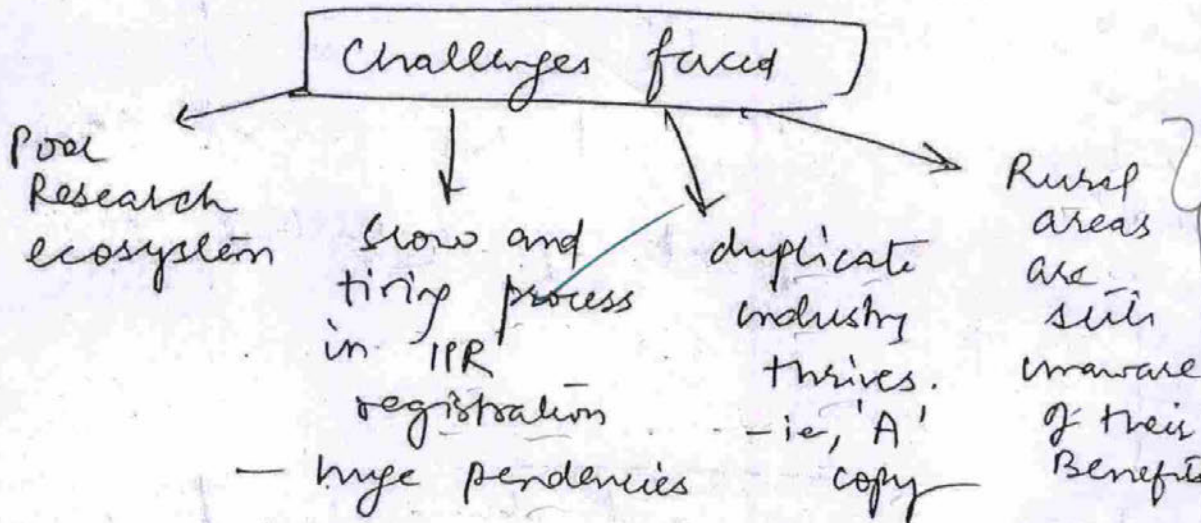
Significance for India

① Boost to self sufficiency, Research and Development ⇒ a thrust to Atmanirbhar Bharat.

② will help India gain an international recognition.

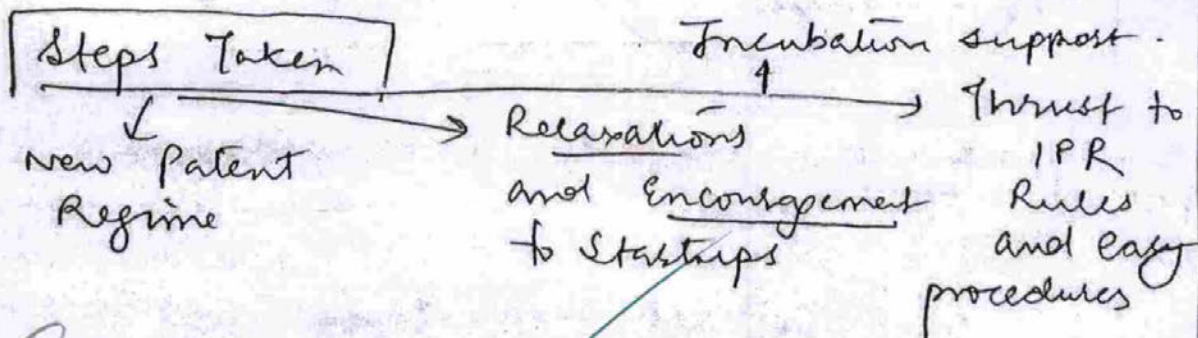
(3) A good Research technology can help plug the digital, scientific, economic divide between developed and developing
 (eg) Vaccine Research.

valid point



valid points given

But Better Synchronised Structure could be provided to your content



concluded govt

Steps like "petty Patents", creating awareness, Building research ecosystem (like Atal Innovation Mission) can help realise the potential of IPR in India.

Students should not write anything inside the box

Introduction	0.5
Body	4
Conclusion	1
Presentation	0.5
Marks:	5.5

Suggestions:

- try to focus on word limit, write your content in specified amount of words.

20. Discuss the opportunities and challenges faced by the semiconductor industry in India. In what ways can the "India Semiconductor Mission" help in achieving Atmanirbhar Bharat?

(15 marks, 250 words)

generic
↓ provide
many of
Semiconductors
Their uses in
diff. sectors
and India's
stance in
Semiconductor
Industry

Semiconductors are Materials which form the heart and soul of new age gadgets and are crucial for the development of Industrial Revolution 4.0

Opportunities and Challenges

Opportunities around Semiconductor Industry :-

- ① uses in almost all the technologies -
↳ automobiles, electronics, Artificial Intelligence, Computer chips etc.
- ② could help in becoming an exporter
⇒ focus; Reduces import Bills, leveraging present opportunity - in the wake of Semiconductor shortage.

try to underline the headings

valid points

① can help achieve Atmanirbhar Bharat agenda:-

① Thrust to Research and development ecosystem.

use Alpha-numeric figs

② will gain self sufficiency - a strategic element for today's world

1-
2-
3-

③ can develop Industry, supply chains and boost to employment etc.

Relevant information provided

④ It has a potential to significantly boost our GDP and reduce trade deficit.

NITI Aayog has predicted a 100 Bn market for semiconductors by 2025.

Challenges

① Lack of fabrication capacity.

② water gushing Industry (India already is under water)

③ Need a steady Infrastructure stress

⇒ Continued Energy Supply

17% people and 4% freshwater

④ Capital intensive sector

Need Investments regularly.

Try to explain in bit of detailed view of your points.

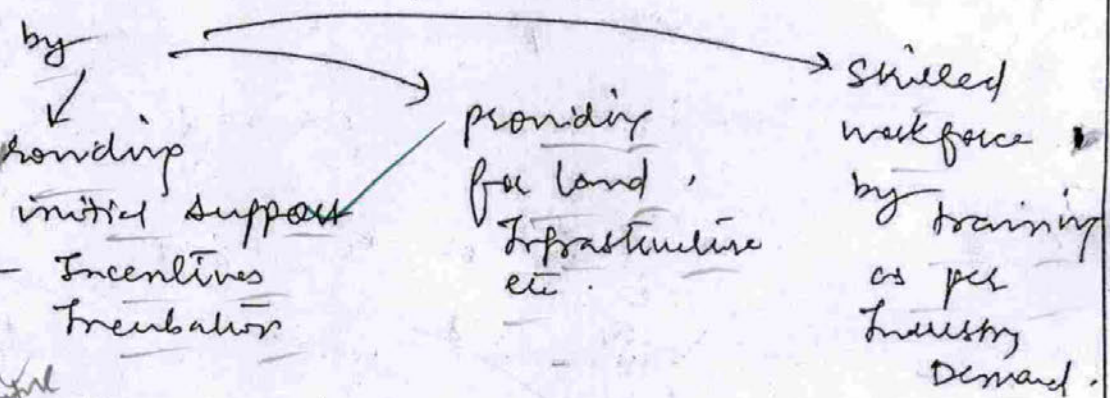
valid points

- (5) lack of skilled workforce in India.
- (6) lack of private participation
 ⇒ due to high gestation and initial costs.

Try to touch broad dimension

- IPR Promotion
- Collaboration with international market players
- Reduction of supports
- Better infrastructure & fiscal support etc.

India's Semiconductor Mission could help achieve the potential of semiconductors.



valid conclusion

Way Ahead lies in leveraging international groupings like Quad, I2V2, BRICS etc for collaborations, technology transfers and investment. along with providing incubation support and steady infrastructure for this sunrise sector ⇒ to achieve Atmanirbharata

Students should not write anything inside the box

Introduction	0.5	Suggestions: - Second Demand is not well discussed Try to improve structure according to Demand.
Body	2.5	
Conclusion	1	
Presentation	0	
Marks:	(4)	