

GS SCORE

An Institute for Civil Services

IAS TOPPER'S

TEST COPY

SIDDHARTH ATTRI

AIR - 882

(CSE 2022)

GENERAL STUDIES

 **8448496262**  **iascore.in**

ONLINE

GS SCORE

TEST - 07

90 1/2

GENERAL STUDIES - PAPER III

Time Allowed: 3 hrs.

Max. Marks: 250

Q.	Marks	Instructions to Candidate
1.	4 1/2	<ul style="list-style-type: none"> • There are 20 questions. • All questions are compulsory • The number of marks carried by a question is indicated against it. • Answer the Question No. 1 to 10 not more than 150 words, whereas Question No. 11 to 20 should be answered in not more than 250 words. • Answers must be written within the space provided. <p>Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.</p>
2.	4	
3.	3 1/2	
4.	4	
5.	4	
6.	3	
7.	2 1/2	
8.	4	
9.	2 1/2	
10.	3	
11.	4	
12.	5	
13.	1 1/2	
14.	6	
15.	6	
16.	6 1/2	
17.	7	
18.	5	
19.	4	
20.	5 1/2	

1. Invigilator Signature _____
2. Invigilator Signature _____

Name SIDDHARTH ATTRI
Roll No. _____
Mobile No. _____
Date _____
Signature _____

REMARKS

GS SCORE
ADIX TEST SERIES

--	--

SECTION - A

Q1. Recently, the Union Government announced new hydrocarbon exploration and pricing policy. Examine the merits and demerits of this policy. (10 Marks)

Less than 10% of India's Hydrocarbon potential is explored & less than 1% is developed. HELP aims to change this.

Key features & their merits:-

- Revenue sharing - Will ensure steady income for government.
- Open acreage - Explorers won't have to wait for new round of bidding as they can propose to develop neighbouring blocks.
- Share royalty payment to explorers (10%) for deepwater exploration. Earlier it was 5%.
- Open exploration Data - Earlier this used to be monopoly of GIL.
- Open license - No separate license required for each hydrocarbon.

Remarks

Demerits

- Revenue sharing model may be unattractive for investor. Genuine shortfall in profits will make this unfavorable.

- Open acreage will favour big players with existing blocks. It may also lead to land acquisition problems.

This issues need to iron out to make

HELP more effective.

(12)

Remarks

Q2. A range of issues relating to procurement, storage and distribution of food grains is not only deeply flawed in its reading of the situation on food security, but also short on facts. Discuss in the light of Shanta Kumar Committee recommendations. (10 Marks)

SDG (Reducing Hunger) is

looking hard to achieve due to several shortcomings -

Shortcomings in procurement, storage & distribution :-

- Procurement prices are not remunerative for farmers.

- Cold chains are non existing causing 30% of grain to rot away or eaten by pests.

Distribution suffers from

- Leakages
- Hoarding
- Ghost beneficiaries

Apart from these issues the factual database is deeply flawed :-

- Vulnerability mapping not done.

10

1
2

2

Remarks

→ Nutritional component is missing.

→ Local Dietary habits are not mapped.

Shantalekshmi committee has

recognized this issue. It stresses on the

need to involve nutritional aspect.

Community participations needs to be

encouraged in PDS (Cooperatives).

Locally sourced produce in conformity

eating habits needs to be encouraged.

This will save costs & also address

the problem of hunger.

Remarks

Q3. Critically examine the emergence of AI-powered cyber weapons as the weapons of next cold war. (10 Marks)

1
3
2

The famous film Terminator gave us a glimpse in AI powered warfare. It involves sentient weapon systems which perform several algorithms to identify their targets.

1

Role of AI in cyber weapons in Next cold war :-

- Constant cyber espionage by AI to retrieve military secrets.
- Deployment of malware at will without authentication of humans.
- Online propaganda by constant monitoring of human behaviour.
- Automatic launching of strategic missiles
- Taking over commands & control of infrastructure

1
1
2

Remarks

The problem with an AI powered cyber infrastructure is about who to hold accountable. once it goes out of control.

① — Thus mutually agreed miti measures to limit the growth of a sentient AI need to be adopted by major powers

Q1. B

d

f

I.

— C

U

E

v

i

— ^

—

Remarks

Remarks

Q4. Briefly introduce various intelligence agencies in India and their major functions.

(10 Marks)

Intelligence agencies perform defensive functions & offensive functions (espionage).

Intelligence agencies of India:-

- Research & Analysis Wing (RAW) -

Created after 1964 ~~not~~ mainly to spy on China nuclear tests. Today it is the premier agency for gathering external intelligence & conducting espionage. It is under Home Ministry.

- CBI (Central Bureau of Investigation) -

Created under Delhi Special Police Establishment Act. It conducts internal investigations ranging from frauds, organized crime etc.

- National Investigation Agency (NIA).

Created after Mumbai terror attacks

Remarks

acts as a nodal point for all the intelligence from all agencies & military.

(2) - Intelligence Bureau (IB) - Deals with internal threats like terror attacks, Insurgency. Under Home Ministry.

All these are highly competent agency, however coordinations needs to be enhanced -

Remarks

Q5. Discuss major amendments in the Prevention of Money-laundering Act, 2002, through Finance Act, 2018, to make it more effective. (10 Marks)

Recently India has been hit by several large scale scams and serious economic offences. Terror funding has also been identified as a major threat as a result. Prevention of Money Laundering Act, 2002 has undergone amendments :-

- Definition of 'Money Laundering' expanded to include serious economic offences
- Freezing of accounts of all the related parties is provided for.
- Search & seize powers given to Enforcement Directorate.

4

11

What was 2002 why change?

1/2

Remarks

Do you think change will be effective

- Special bench may be created to deal with such cases.
- Mutual legal assistance with countries especially ~~money la~~ sub trans.
- Taking over properties of those who have fled the country.

Trained manpower & a strong intelligence network is key to enforce these amendments.

Remarks

Rema

Q6. The concept of urban development of infrastructure in India cannot be separated from rural infrastructure development. Explain in the light of AMRUT, Smart Cities, and RURBAN concept of rural development. (10 Marks)

Rural areas are heavily dependent on urban nodes. Therefore they too should be made part of urban development.

Reasons :-

- To prevent large scale migration to urban areas.
- Agriculture sector suffers.
- To host manufacturing industry which relocate out of urban areas.
- To host suburbanisation.

Shyam Prasad Mukherjee Rustarisation programme aims to provide urban amenities to rural areas, which.

(3)
How it will reduce urban issues.

Remarks

How urban and rural integrate
what: problem when → only urban development

is essential to address the above mentioned issues.

It is essential that urban development programmes like AMRUT & Smart City are integrated with rural development projects to provide a holistic regional development.

Remarks

- Q7. While highlighting the significance of celebrating Earth Day, discuss the major components in the theme of Earth Day 2018. (10 Marks)

Earth Day is a UN led initiative meant to recognise the need to preserve mother Earth and reduce various stresses that mankind subjects it to.

Key components.

- Saving Energy by promoting energy neutral buildings & clean energy solutions.
- Prevent proliferation of plastics due to its low biodegradability.
- Reduce effluents
 - Air - pollution
 - Water - Industrial effluents
 - Land - Garbage, Leachate.
- Promoting culture of Reuse & Recycle.

Remarks

- Equitable distribution of resources.
- Community participation in programmes
eg Afforestation drives.

Earth Day is not a mere symbolic gesture but ~~we~~ its tenets need to be followed in letter and spirit.

2013 }
How
Annual
incomplete
Beat the
plastic

Remarks

Q8. As part of its commitment under the Montreal Protocol, India has launched the second phase of its programme that aims to eliminate the use of hydro-chloro-fluoro-carbons (HCFCs). Examine the challenges involved in eliminating HCFCs from India and suggest some remedies. (10 Marks)

HCFCs were alternatives to CFCs which were supposed to be eliminated under Montreal Protocol. However under the Kigali Agreement HCFCs too are to be eliminated owing to their high global warming potential. For India to needs to eliminate by 2040.

Challenges:

- Widespread use in A/Cs & refrigerators. which is not easily replaceable
- Large production base. Producers lobby will obviously oppose this.

Remarks

9

11

12

1

Technical

?

?

India's

Capabili

for R&D

==

cheap

After

needs

- (A)
- Alternatives to HCFC are expensive & will hinder efforts to provide cheap cooling solutions mainly in rural areas.

Solutions

- (B)
- Demand compensation under Green Climatic Fund.
 - Government led R&D in low cost cooling solutions.
 - Climate smart buildings to reduce cooling requirements.

India needs ingenious solutions to integrate its energy commitments with developmental needs.

Remarks

Q9. What do you understand by germline editing? Discuss the ethical, social and regulatory issues that human germline editing raises. Also, highlight how it is being regulated in India and countries across the world. (10 Marks)

Germline editing involves

making genetic changes to a fertilized ovum in order to alter its trait.

Crispr-CAS-9 is the technique most widely used.

Originally it was meant to cure genetic defects however it has raised several ethical concerns lately like:

- Designer Babies with specific colour may be created which lead to racial entrenchment of discrimination
- Only rich will be able to afford it
- Cloning can be done to create a donor human whose sole purpose will be to donate organs to others

Remarks

ethical → only explained
 social
 regulatory

- Super humans may be created by
militaries.

May lead to mutations.

Government across the world

including India have tried to
limit it to research & medical

purpose only. Still suitable policies

also evolved. ^{Humans} Cloning is strictly

banned.

give
specific
examples

UK, USA
2,
15

Remarks

Q10. Highlight the prevalence of drug abuse in India? Discuss the various measures taken by government to curb the drug addiction in country. (10 Marks)

Drug abuse seriously cripples productive workforce of the country.

Prevalence.

- Cross border inflow from Golden Triangle & Golden Crescent.

Afghanistan
Opium.
Pakistan
Poppy Husk.



Myanmar
Poppy
Heroin
Thailand
Opium.

- One person per family in border districts of Punjab suffers from Drug Abuse.

- Drug Tourism in Goa where chemicals like LSD, cocaine are proliferated by Russian smugglers.

- Her Marijuana industry in Parvati Valley in Himachal Pradesh.

Remarks

Prevalence should be highlighted more.

Government Measures

- Border Protection Grid ~~and~~ with Bangladesh and Fencing of border with Pakistan.

↳ Rehabilitation centres.

- Intensified patrolling by BSF.

- Narcotics & Psychotropic Substances Act.

Community participations is required to make this fight more effective.

Remarks

SECTION - B

Q11. There is an urgent need for India to get infrastructure financing, however, the current investment model of PPPs is poorly designed and needs restructuring. Discuss the issues plaguing the success of PPPs with respect to stalled projects, risk management, governance & institutional capacity. (15 Marks)

PPP model involves private and government as partners. Several types of PPP exist like BOT - Build operate Transfer. BOOT - Build own operate Transfer.

The main problem is that the private player cannot depend on government for clearances & land acquisition. Both need to deal with it together.

Key Issues:

* Raising finances - Private player needs to do this on its own often leading to 'Twin' Balance sheet Problems'

In BOT & BOOT financing can be done on tolling basis but this

Remarks

causes impediments in seamless connectivity & also overcollection of toll as seen in case of DND expressway.

* Risk management - It is mostly borne by the corporate which is often causes litigations. The Punjab section of NH-44 was long stuck due to this.

* Renegotiation - Long gestation projects are often prone to rising costs require refinancing and renegotiation. in absence of which projects become unviable.

Recently Kelkar Committee gave recommendations to overhaul PPP regime

Remarks

Key recommendations

- A tribunal to deal with litigation.
- An institute ^{/Agency} for oversicing PPP regime & suggesting changes
- Provisions for contract renegotiation.
- PPP should not be used for small projects.

These should be implemented to make PPP attractive.

Remarks

Q12. There is an overdrive by the government and India Inc. to link 12-digit Aadhaar with verification process of various schemes and realize Digital India dream faster. However, increased incidents of cyber frauds and data-theft highlight lack of preparedness. Analyze. Also, suggest solutions to handle these issues. (15 Marks)

The purpose of Aadhaar being

linked to schemes is to :-

- Prevent leakages by reducing human interface.
- Direct Benefit Transfer.
- Prevention from ghost beneficiary.

Recently Airtel was accused of opening Airtel Payment Bank account of its subscribers whose LPA subsidy get divided. This naturally raises concerns of whether we are in control of our lives when it comes to Aadhaar.

Possible frauds :-

- Aadhaar card can be stolen or duplicated & can be used to avail

Remarks

Re

⑤
Overdrive and Digital India Dream
Dream India and cyber frauds
in India

schemes or open bank account. It leaves behind a Digital trail without the person knowing.

- State surveillance through corporates
- Aadhaar Data banks can be attacked by hackers leading to violation of right to privacy.

- Duplication of fingerprints can be done easily.

- Digital Illiteracy of Indian users leaves them severely vulnerable wrt terms and conditions which organisations present before using Aadhaar ID. as mere protection of one's Aadhaar.

Government has recognised this & proposed a 16 digit Virtual ID.

Remarks

Moscow government says that
Aadhaar works on the principle of
verification only. i.e. a Yes or No.

It does not involve collecting any other
data.

Blockchain can be incorporated
to improve its security.

Remarks

Q13. The World Bank has observed that India is emerging as a frontrunner in the fight against climate change. It has noted that India is gradually replacing coal energy with solar power as a source of energy. Elaborate. (15 Marks)

According to World bank.

India will produce 40% of its energy from renewables by 2030 & is well on its way to achieve SDG7 (Clean energy)

Recent measures underscoring this:-

- International Solar Alliance to boost $\left\{ \begin{array}{l} \text{R\&D} \\ \text{Investment in Solar sector} \\ \text{Cooperation} \end{array} \right.$

- Proliferation of Solar Farms especially in Tamil Nadu & Rajasthan.

- Roof top solar panels until now were only 1GW. These are increasingly being encouraged through provisions like:-

Remarks

2½

- Net Metering.

- Open access.

- Creation of microgrids.

- Street lighting.

- Solar power in Agriculture. Swajal Yojana.

Impact of this on Coal power.

(3)

Coal obviously will remain mainstay of Base Load Power in medium to short term. However, the growth of coal fired plants has decreased in the last one decade. At the same time the latest energy policy aims to improve efficiency. Δ Plant Load Factor of existing plant.

Remarks

Therefore for new solar power will complement coal power till the time. requisite transmission networks and storage technologies come up which will be essential to deploy solar power on a large scale.

Remarks

Q14. Ending poverty and stabilizing climate change will be two unprecedented global achievements and two major steps toward sustainable development. Critically discuss the impact of climate change on poverty. In regard to this, suggest some measures. (15 Marks)

SDG 1 (Ending poverty) and SDG 7

(Clean Energy) are two goals which

India is striving to achieve. Often, these two are at odds with each other.

As developing country poverty & reductions definitely takes precedence over anything else. This involves providing cheap energy.

But as an emerging global power, we have commitments towards saving the planet too. Hence International Solar Alliance, National Solar Mission, etc.

Remarks

The capital cost of such technologies are extremely high and it takes time till we reach Grid Parity. Moreover they are not suited for Base Load as yet.

In India with 2500 villages yet to be electrified stand alone solar panels are ill suited. A top heavy grid connected approach is required of which thermal & nuclear power are a source.

How to reconcile the two:-

- Microgrids to create a secure large scale standalone infrastructure.
- Gobardhan Vojara to utilize locally available resources (low density slurry) to fire Biogas Plant.

Remarks

- Subsidize LPG. Already done under Pahal scheme.
- Subsidizing e-vehicles, especially e-rickshaws
- RoD is storage technologies eg 15RoD Li-ON battery.

In the long run clean energy is essential for reduction in poverty too as clean air leads to good health.

Remarks

Q15. An emissions-reduction approach to fight global warming is not enough. Alternative solutions involving climate engineering might have to be deployed sooner than we think. Critically examine the statement. Also, discuss climate engineering.

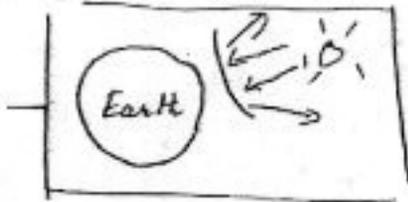
(15 Marks)

Emission reduction approach

involves mitigation measures to reduce the damage being done. ^{Whereas} Climate engineering involves changing the very nature of climatic impact.

It includes techniques like :-

- Solar Shading - Massive mirrors deployed in space to reduce insolation.



- Cloud Seeding - Use of silver Iodide to create a substrate on which clouds can form. to perform twin functions -> Causing rainfall. Providing shade.

Remarks

- Artificial Cloud brightening. - Chemicals sprayed in Stratosphere. to increase growth of Cirrus clouds to improve Albedo.

- Aerosols to increase albedo.

The aim of these techniques is to reduce Global warming.

However climate change is much more than that. Which can make climatic engineering a double edged weapon :-

- Disruption of normal weather events by causing untimely rains

- Cloud seeding is expensive & often does not cause rains.

Remarks

- Space mirrors are expensive to build & deploy.
- Chemicals like silver iodide are harmful if inhaled.
- Blocking insolation disrupts
 - Carbon cycle
 - Oxygen cycle.
 - Nitrogen cycle.

1 1/2

Thus such solutions should be deployed for localised events only. like controlling fog. or ~~has~~ preventions of draughts.

Remarks

Q16. What are Coastal Regulation Zones? Government has recently proposed changes in CRZ regulations through draft Coastal Regulation Zone (CRZ) Notification, 2018. Highlight the salient features of the same. What are the concerns toward new changes? (15 Marks)

CRZ are demarcated in order to regulate constructions of settlement & commercial activity on the coasts.

Various CRZs:

• CRZ 1 - ~~200~~⁵⁰ m from high tide line.

No new constructions are permitted here. No commercial activity can be undertaken apart from ^{minor} tourist activity.

• CRZ 2 - Between High Tide Line & Low Tide Line. Coastal fishing, sand mining may be undertaken with government permission.

Remarks

- CRZ 3 - Constructions already done by coastal communities by HTL.
- CRZ 4 - Offshore Littoral waters.

The recently released guidelines have divested the centre of its responsibility and made states responsible for enforcement of these rules.

Key Challenges :-

- States lack the manpower & technical knowhow to enforce these regulations
- Bringing CRZ-1 closer to HTL will make constructions more hazard as it was earlier 200m
- No provisions for any appeal to NbT

3

Remarks

if these are violated.

1/2 - Allow for infrastructure projects like coastal roads.

- States can decide on wise-use which might lead to their exploitation.

CRZ rules need to be made comprehensive based on above facts.

Remarks

Q17. Highlight the challenges being faced by biotechnology sector in India. Also, discuss how the National Biotechnology Development Strategy (2015-2020) which aims to establish India as a world-class bio-manufacturing hub. (15 Marks)

(7)

Biotechnology involves use of biotic resources to develop health solutions, agricultural solutions etc.

Challenges faced in India :-

- Biotic wealth not mapped & catalogued.
- Environmental degradations like that in North East is destroying an unexplored Biotic wealth.
- Allopathy gains precedence over Biotechnology related solutions.
- Lack of Industry - R&D connect which ~~make~~ is essential to scale up the industry.

(3)

Remarks

- Biotech solutions like medicines are often found to fail quality checks due to adulterations & unhygienic techniques.

The National Biotechnology Development Strategy ~~and~~ along with Biopharma Missions aim to address these problems :-

- Creating Biotech clusters to help pool resources
- Pharma PSUs to invest in R&D.
- Mapping of Biotic resources to create digital database.
- Government funded R&D programmes

Remarks

- Aligning AYUSH with Biotechnology.

- Creating a national accreditation & quality control authority to Biotechnology products.

① - Creating Biotechnology hub in North East.

Biotechnology is a niche sector where India has tremendous potential.

Remarks

Q18. Leveraging Japanese expertise in robotic manufacturing and channeling local software talent would allow India to come to terms with a fast-changing global economic scenario, where automation will rule the roost. Analyze. (15 Marks)

The world is at the cusp of Industrial revolution 4.0 which involves Artificial Intelligence & automation. India needs to rise to the occasion.

Strengths of Japan and their benefits to India :-

India as the software powerhouse can greatly leverage it and complement it with Japanese robotic hardware :-

- Raising Manufacturing productivity :-
By ~~the~~ improving production lines and reducing human role in repeat tasks.

Remarks

- In Agriculture - Japan has an edge in precision farming. Japan uses drones to monitor the fields. These can be fed with Indian software.
- Moving up the value chain - By outsourcing repetitive tasks to robotics Indian talent can be deployed in R&D.

Challenges :-

- Automation will challenge a huge chunk of unskilled workforce.
- Make in India's very purpose is to create jobs in manufacturing. Large scale automation will defeat it.
- India's manufacturing relies on cheap labour. Automation will indeed

Remarks

bring down cost but due to massive layoffs, India will also lose a huge chunk of domestic market.

① Thus carefully studied, phased introduction of Automation is essential

Remarks

Q19. What do you understand by precision farming? It is said that future revolution in agriculture is going to come from precision farming and micro-irrigation can be the stepping stone towards achieving the goal of making Indian farming sustainable, profitable and productive. Discuss. (15 Marks)

Precision farming involves using scientific assessed quantities of inputs which improves productivity & reduces costs.

Key features.

- Soil monitoring, to map nutrient availability & using the right quantity & proportion of fertilizers.
- Irrigation - using microirrigation to improve drop to irrigation eg. drip & sprinkle irrigation.
- Mulching to reduce erosion.
- Threshers which carefully separate crop & residue.

Remarks

SensAgri Programme of ICAR is an initiative in this sector.

Indian agriculture suffers from:-

- Climatic vagaries.

- Disproportionate fertilizer use.

- Low water use efficiency.

- Lack of scalability.

Economic Survey 2018 pointed

out that unirrigated lands are 30% more likely to suffer from drought. Thus addressing this issue

is the first step towards adoption of precision farming because :-

- Local structures which are low cost

can provide micro irrigation - e) check dams.

Remarks

- Bamboo sticks are being used in Meghalaya for drip irrigation.
- Warabandi system can be used for equitable sharing.
- Watershed management by creation of microchannels.

Thus low cost & low capital investment makes it first step towards adoption of Precision farming.

Remarks

Q20. Food subsidy has increased six-fold over the past 10 years. In light of this, discuss the challenges in the effective implementation of Targeted Public Distribution System (TPDS) and alternatives to reform the existing machinery. (15 Marks)

15/20

With rampant Malnutrition

& starving, achieving SDG 2 (Eradication of hunger) remains a difficult task for India.

Inspite proliferation of subsidy regime, ground results remain far from satisfactory.

12

Targeted PDS involves:-

- Identification of beneficiaries through ration cards & aadhaar card.
- Direct Benefit transfer.

Challenges :-

* Illiteracy makes ration card or aadhaar enrollment difficult. Using

Remarks

Digital banking solutions also becomes difficult.

- * low Banking penetration in rural areas.
- * The quantity given by fair price shops itself may be unverifiable.
- * Pos devices face electricity and connectivity issues.
- * Targetted PDS does not address Nutritional component

Alternatives:

- Delivering food packets directly through Anganwadis
- Employing on-foot Banking correspondents
- Indian Post Payment Bank to carry

Active benefits:

- Biometrically Authenticated PDS uptake (BAPU).

Remarks

- Chhatisgarh & Tamil Nadu Model
where cooperatives run fair price
shops & movement/delinquency of
prices is monitored by G.P.S.

India thus requires a holistic
approach to this entrenched problem

Remarks