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99.5

## MAINS MOCK TEST, 2022

Ishan Sinha

### GS III PAPER

Date: 20<sup>th</sup> August 2022

Time: 9 AM to 12 PM

Total Marks: 250 marks

Time duration: 3 hours

#### GS III Paper Instructions.

- There are 20 questions printed in ENGLISH.
- All questions are compulsory.
- The number of marks carried by a question/part is printed against it.
- The medium of the answers will be English.
- Answers to questions no. 1 to 10 should be in 150 words, whereas answers to questions no. 11 to 20 should be in 250 words.
- Keep the word limit indicated in the questions in mind.
- Any page or portion of the page left blank, must be struck off clearly.
- You are directed to scan/ take photos of your answer booklet and send the same to [aptiplus.mains2022.openmock@gmail.com](mailto:aptiplus.mains2022.openmock@gmail.com) ONLY IN PDF FORMAT.
- Name the pdf format in the format (aspirant's full name)\_(paper).pdf. For example, if your full name is Aman Kumar and the paper is on GS III then the file's name will be amankumar\_GSIII.pdf.
- The deadline for submitting the answer sheets is 20th August 12:30 PM



## MAINS MOCK TEST, 2022

1. What are AI chips and how are they different from traditional chips? (10 Marks, 150 words)

Artificial Intelligence (AI) chips are built with specific architecture and have integrated AI to support rapid and constant learning mechanisms. They are like traditional chips, but with AI integrated into them.

*Begin intro by mentioning some features in brief*

### Differences with traditional chips

- i) Computing power of AI chips is higher than traditional chips due to the integration of AI systems. *(eg) → AI*
- ii) Active learning is present in AI chips as they have the ability to store information about incorrect methods and data as well. *accelerated commands*
- iii) Natural Language Processing: AI chips are *ideal for algorithms* this over traditional chips due to the active learning of AI chips.

*Always try to give tabular format for differences*

<u>Traditional</u>	<u>Artificial chip</u>
1) _____	1) _____
2) _____	2) _____



**MAINS MOCK TEST, 2022**

along with differences add applications

1) Latency : Latency of AI chips is lesser than that of traditional chips due to the higher computing powers.

2) Uses : Uses of AI chips differ from traditional ones. AI chips are used in smart machines and devices, drones and robots, while traditional ones are used in computers

3) Mode of operation : While traditional chips consider only one command at a time, AI chips can process several commands at once

The rise in the need for smart homes and cities and the surge in investments in AI startups are expected to drive the growth of the global AI chip market. *Agriculture, Banking, Robotics, AI and crop monitoring*

Differences → AI	Tradition
<ul style="list-style-type: none"> <li>- processor core + several AI optimised cores -</li> <li>- low latency</li> </ul>	<ul style="list-style-type: none"> <li>- containing processor cores + memory</li> <li>- not ideal for AI Appl<sup>n</sup></li> </ul>

3 1/2





### MAINS MOCK TEST, 2022

2. Widening Current Account Deficit (CAD) indicated that the value of imports is exceeding the value of exports. Justify (10 Marks, 150 words)

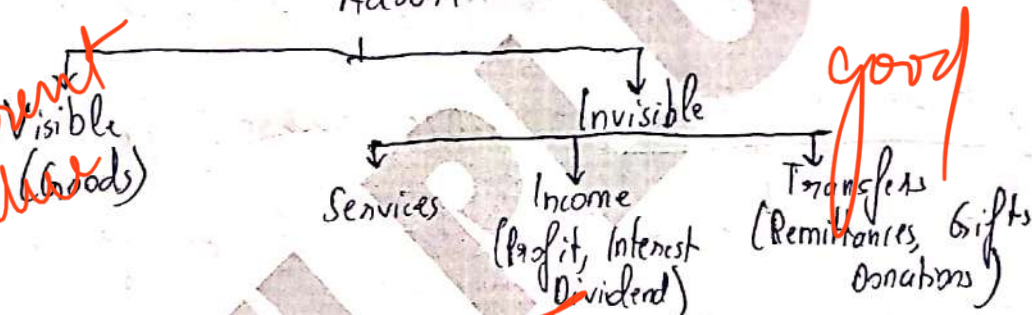
*not always detrimental*

Current account deficit is a measurement of a country's trade where the value of goods and services it imports exceeds the value of the products it exports.

*Criss  
into*

*define through facts / current value*

Current Account



*good*

Widening current account deficit shows that the value of imports is exceeding that of exports.

*Avoid*

i) Visible (Goods) : India has a deficit in the balance of goods trade due to imports of petroleum and coal.

*superfluous*

ii) Invisible

*same sentences*

a) Services : India generally has a net positive in the trade of services, however, especially software and

*external debt may be used to finance lucrative investments.*



### MAINS MOCK TEST, 2022

business process outsourcing (BPO)

*good points*  
b) Income (Profit, Interest, Dividend): India suffers from net negative primary income due to the need for debt servicing, interest and dividend payments on government borrowings.

c) Transfers (Remittances, gifts, donations): Due to the rising levels of remittances by ~~the diaspora~~, the transfers are in a net positive.

Due to the net negative of the trade in goods and income, the current account deficit is widening as the ~~the~~ transfers and trade of services are not sufficient to reduce it.

4

*give eg of developed countries - USA*

*often run deficit while emerging economies often run current a/c surplus.*



## MAINS MOCK TEST, 2022

3. The launch of e-RUPI could potentially highlight the gaps in digital payments infrastructure that will be necessary for the success of the future digital currency. Examine. (10 Marks, 150 words)

good intro

e-RUPI is a cashless and contactless method for digital payment. It is an e-voucher, which the users will be able to redeem without needing a card or banking app at a designated service provider. *neither cryptocurrency nor CBDC*

Also include

- Problems in digital payments
- Digital divide (70% adoption in urban areas, 30% in rural)
  - Lack of financial literacy
  - Issue of financial inclusion
  - Lack of awareness
  - Results in leakage of government benefits.
- inform on sms or QR code*

### Advantages of e-RUPI

- Banking access is not required for the beneficiaries of this scheme. *need to elaborate the*
- Owning a smartphone ~~is not nec~~ or having internet connectivity is not required to avail of the e-RUPI as it is a voucher-based system. *problems*

2nd part

Need to be mentioned

→ challenges to fiat currency  
→ inter-bank settlement



## MAINS MOCK TEST, 2022

- iii) It will expedite the targeted, transparent and leakage-free delivery to the final beneficiary.
- iv) It also promotes the government's initiative of a less-cost economy, which would foster savings in printing currency.
- v) It is easy, safe and secure as it keeps the details of the beneficiary completely confidential.
- vi) Small enterprises will benefit as they could gain directly from government programs, by elimination of intermediaries.
- vii) Being user-friendly, this technology will be helpful to illiterate individuals.

The e-RUPI initiative <sup>offers</sup> several opportunities for success to the receivers. With the implementation of e-RUPI banking the unbanked, funding the unfunded becomes a reality.

Historically covered

Conclusion is needed

↳ ensure a leak-proof delivery of welfare services.



*Need to mention*

*date instead*

4. The frequency of purchase, rather than the share of expenditure, shapes inflation. Analyse the statement with the recent food inflation surge in India. (10 Marks, 150 words)

*of direct definition of inflation*

Inflation is the rising price levels of goods due to too much money chasing too few goods. It results in raising the cost of living among the population.

*add FAO stats*

Reasons for food inflation

i) Demand-supply mismatch : Rising demand of certain goods are not able to match up to the supply, causing higher levels of inflation *e.g. pulses.*

*avoid giving generic*

ii) Changing consumption patterns : Households are gradually moving towards healthier alternatives, resulting in demand for fruits and vegetables.

*mention*

iii) Availability : Easy availability of several goods if rapid purchase, in turn causing inflation in articles.

*the context*

*as well*

iv) Supply chain issues : Rising purchases results in rapidly

*avoid generic headings*

*include points -> COVID-19 impact*

*-> war in Ukraine*





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declining stocks, which is not able to <sup>replenish due</sup> match up to the supply chain issues like cold storage, transport issues etc.

→ export controls (eg) Indonesia palm oil

v) Rising income levels: Rising income levels of households results in rising demand and purchase, in turn causing inflation.

Supports

through data/facts

Other factors

- Climate hazards e.g. loss of wheat crop due to heat waves
- Market access issues for farmers
- Black-marketing and hoarding of goods
- Upward and downward linkages.

in which State specifically

Hence, it can be said that the frequency of purchase is what is responsible for inflation in India.

In conclusion way forward approach is needed

3

→ import tariffs better than quotas.

→ RBI to better target non-volatile segment

Also mention

systematic and coherent manner



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5. Discuss the recent reforms that have been undertaken in the National Security Architecture of India. (10 Marks, 150 words)

National Security is one of the primary responsibilities of the state. With rise of state sponsored terrorism, organized crime, asymmetric warfare, various changes have been made in the National Security Architecture.

Good into and too the point

Changes made

- i) Creation of post of Chief of Defence Staff who reports directly to the Prime Minister's Office
- ii) Increase in the number of deputy national security advisors, to allow the national security advisor secretariat to function better.
- iii) Reconstitution of the Strategic Policy Group, earlier headed by the Cabinet Secretary. It will now be led by the National Security Advisor
- iv) Formulation of a new Defence Acquisition Policy to ensure rapid acquisition of new equipment.

points are valid and well covered



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- v) Formation of a China-specific, ~~the~~ think tank called Centre for Contemporary China Studies, funded by the Ministry of External Affairs.
- vi) Reorganization of the army by forming Integrated Battle Groups, multiple Integrated Commands for rapid response.
- vii) Setting up of a Defence Planning Committee headed by the National Security Advisor to ensure efficiency in defence management system.

*fine conclusion but* The reforms in the Security Architecture of the country will help promote the ability of India to act as a Net security provider in the South Asia and the Indian Ocean Region.

*to improve mention General Hooda's recommendations*

4



## MAINS MOCK TEST, 2022

6. Describe the issues associated with online gaming and also provide a way forward. (10 Marks, 150 words)

Good that you mentioned

The rising market share of online gaming (growing at nearly 11% since 2020) has led to numerous concerns associated with this \$60 billion market.

use 2 increase in the

Concerns

Avoid generic headings

i) Lack of regulation: Online gaming exists in a grey area and there is no comprehensive legislation for its engagement

ii) Addiction of gaming: Online gaming is extremely addictive and several youngsters get spend hours playing games, leading to relative isolation and social anxiety. online games has

iii) Mental health: Constant online gaming leads to anxiety, which leads to suicides brought some challenges

iv) Security issues: Online gaming platforms are used for money laundering purposes, affecting the national security of the country.



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*Agant from this cyber security concerns forward*

v) Cyber attacks : Gaming sites can be vulnerable to cyber-attacks, which can lead to the theft of sensitive personal and financial information

vi) Game of skill or chance : There are several online games which can be termed as gambling. These are not differentiated properly from games of chance, causing issues for the taxation

Way forward

*highlight keywords*

- Strengthening of KYC norms for online gaming platforms
- Implementing age-rating mechanisms
- Spreading awareness about evils of online gaming
- Constitution of a separate gaming authority at central level
- Promote self-regulation

*good points*

The online gaming market needs to be properly regulated to ensure both national and societal security in the near future. Steps need to be taken towards that.

*4/2*



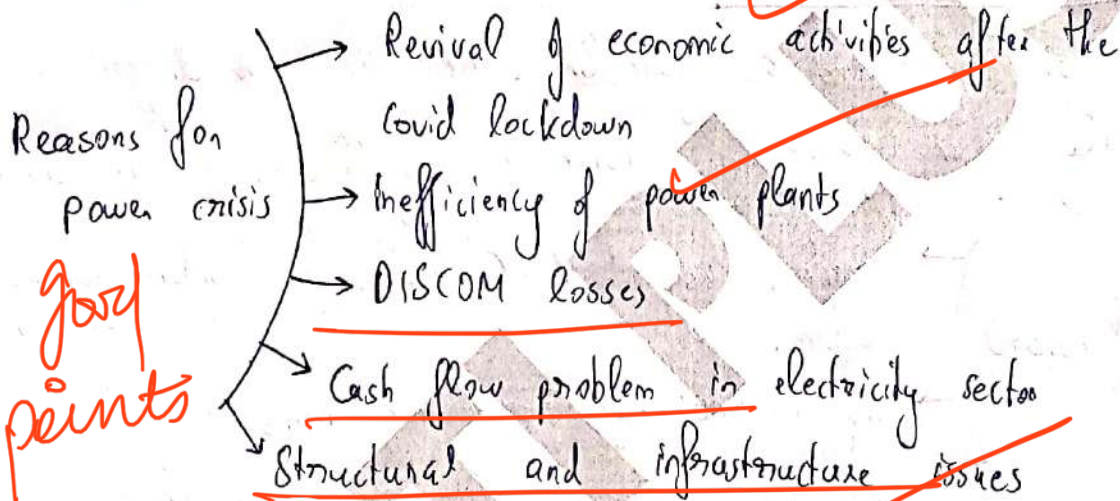
*Conclude by highlighting positive aim like generate revenue excess to industries*



## MAINS MOCK TEST, 2022

7. In light of the recent power shortage in India, how to shock-proof India's power sector? (10 Marks, 150 words)

India recently suffered from a power crisis when daily peak power shortage reached nearly 9000 MW. This resulted in long hours of outage for many households.



Good points

Solutions

i) Short-term

- Diversion of coal from captive mining sites temporarily
- Upgrade infrastructure of power sector.
- Privatisation of mines and increase effectiveness of power plants.



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ii) Long-term

a) ~~Planning and policy reforms~~ to ensure flexible resilience from the current one of managing scarcity.

b) ~~Ensure DISCOMS undertake smart assessment and management of demand~~

c) ~~Strategic energy transition towards renewable energy and phase out of coal-based power plants.~~

d) Focus on upgrading infrastructure implementing smart grids to ensure minimal loss of energy.

e) ~~Coordination to ensure deployment of clean coal technologies, thus focussing on clean electricity.~~

Given the country's development aspirations, India's power demand is set to rise substantially and become more variable. Hence, we need to act now for the long-term resilience of India's power sector.

highlight main words for improving the structure

Power cap of Rs. 12/unit on electricity trade on exchanges

broad approach required

4



## MAINS MOCK TEST, 2022

Discuss the types of wetlands and also the threats to wetlands. (10 Marks, 150 words)

To improve  
introduce  
learn  
lessons

Wetlands are areas where water is the primary factor controlling the environment and associated plant and animal life. They serve as transition areas between aquatic ecosystems and terrestrial and *mention e.g.*

- Types of wetlands
- Coastal Wetlands (e.g. mangrove swamps)
  - Shallow lakes and ponds
  - Marshes (can be tidal and non-tidal)
  - Swamps
  - Bogs and estuaries

elaborate  
in  
brief  
about  
each of

### Threats to wetlands

i) Urbanization : Wetlands near urban centres are gradually declining under developmental pressure (e.g. Lakes in Chennai went from 100 to 30 within a decade.) *should*

ii) Agriculture : Vast stretches of wetlands have been converted into paddy fields. Exploitation of water for *highlight separately*





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agriculture is also an issue

iii) Pollution : Although wetlands can act as natural water filters they cannot clean up heavy metals like mercury

try to support points by

iv) Climate change : Increased temperatures, shifts in precipitation brought, floods etc. also affect wetlands.

including

v) Alien species : Indian wetlands are threatened by ~~ex~~ species like water hyacinth and salvinia. They clog waterways and compete with native vegetation

Case study swamps ↓

vi) Salinization : Over withdrawal of groundwater has led to salinization of wetlands

has led to sinking wetlands

vii) Dredging : Dredging of streams lowers the water table and dries up adjacent wetlands.

surrounding wetlands

To counter unplanned urbanization and rising population, management of wetlands has to be an integral approach in terms of planning, execution and monitoring.

East Calcutta wetlands

3

mention govt initiatives in conclusion for better points



## MAINS MOCK TEST, 2022

9. Stop and Start approach to fuel price is neither beneficial for consumers nor investors.  
Comment. (10 Marks, 150 words)

India officially has a deregulated pricing policy for fuel prices, but in recent years, this practice has been put on hold for certain periods. This is called a stop-and-start approach to price changes. *Apt intro*

Concerns (on investors)

- i) Frequent deviations from the official policy renders it vulnerable to global crude oil pressures.
- ii) Adversely affects interest from global investors in the Indian oil and gas sector. *points are valid*
- iii) Does not affect the economic recovery in India in the post-pandemic phase. *but do*
- iv) often results in high retail inflation by affecting the supply chain. *justification given eg such as*

*relevance not selling to retailers due to low*



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Concerns for consumers

- i) Results in sudden raising of fuel prices which affects their savings. *highlight keywords also*
- ii) Results in dampening of consumer demand in the economy. *try to*
- iii) Rising prices of goods affects living conditions of the middle class and the poor. *mention way forward*

*support arguments through*

The stop and start approach to fuel pricing needs to be changed to ensure both investors and consumers can remain safe from frequent price rise. *such as*



→ developing alternative fund  
statutory banking  
over price concern etc

*conclusion*



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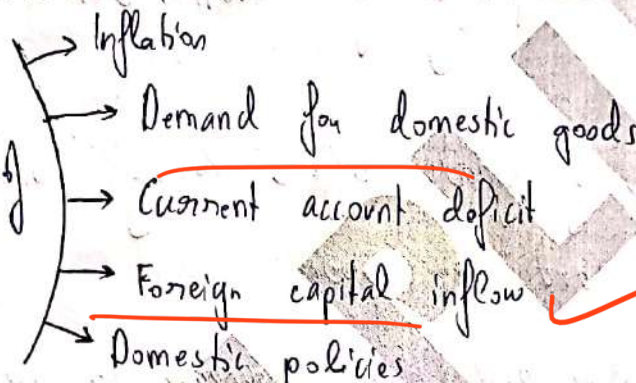
10. What determines the value of the rupee? What factors cause the rupee to lose value against the dollar? (10 Marks, 150 words)

*try to mention value of rupee in dollar context whenever writing answer for improvement intro*

*mention few of them*

The value of the rupee against other currencies can appreciate or depreciate based on several factors. The appreciation of the rupee implies that it has gained in value, and vice versa.

*Determinants of value*



*good*

Factors causing rupee to lose value

i) Policies of the US Federal Reserve which leads to reduction of liquidity and withdrawal of dollars lead to loss of value against the rupee.

ii) The Global economic slowdown - has led to a fall in the Indian rupee against the dollar, causing losses to businesses.

*reason? war ← Russia 2020 Ukraine*



## MAINS MOCK TEST, 2022

iii) Trade deficits : India faces consistent trade deficits which results in decline of value for the rupee **stats?**

*good justification*  
iv) Inflation in goods has been on the higher side in India whereas that is not the case in the US. This has also led to decline of rupee values

*points*  
v) Foreign capital outflows due to selling of shares by the foreign institutional investors has led to strengthening of the dollar. **mention tools**

vi) High crude oil prices has led to rising current account deficit and decline of foreign exchange reserves, **for measures**

The rupee-dollar exchange rate is a critical factor that defines the prices of imports and exports in the global market. In spite of the decline of value the rupee is relatively stronger as compared to other global currencies. **to be taken**

**Conclusion**

is good

4



## MAINS MOCK TEST, 2022

11. Discuss the key components of the Disaster Management Plan of the Ministry of Panchayati Raj. What is the significance of the involvement of Panchayati Raj Institutions in Disaster Management? (15 Marks, 250 words)

India is highly vulnerable to disasters in varying degrees. Nearly 5700 km of the coastlines are vulnerable to cyclones, 40% of the land is vulnerable to droughts. Earthquakes, landslides etc are prominent. To tackle this, the Ministry of Panchayati Raj formulated a Disaster Management Plan.

### Components

- first give brief about the plan*
- i) It describes the institutional arrangement for disaster management, ~~it~~ in compliance with the NOMA guidelines.
  - ii) It provides for hazard, vulnerability and Capacity analysis in the pre-disaster period.
  - iii) It provides Disaster specific preventive and Mitigation Measures.
  - iv) Community based disaster Management Plans of Villages and Panchayats have been incorporated into the plan.



## MAINS MOCK TEST, 2022

v) Disaster risk management has been sought to be integrated across development and climate change action plans.

### Role of Panchayats

i) Community participation : Panchayats being involved in disaster management ensures the community itself is involved in pre and post disaster responses.

ii) Innovative mechanisms : Local populations generally have innovative steps to tackle disasters e.g. studying of behaviour of animals for disaster warnings. These can be integrated into disaster management techniques.

iii) Rapid warning and response : Panchayats being at the grassroots can respond to disasters more rapidly.

iv) Effective coordination : Panchayats can coordinate more effectively with NGOs for rapid recovery and reconstruction.



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Good content  
 competency  
 but  
 Try to  
 adhere  
 within  
 word  
 limit

v) Local needs of a particular area are better known by panchayats; hence region-specific responses can be undertaken

vi) Utilization of funds would be more effective, after the disaster mitigation and response funds earmarked by the 15<sup>th</sup> Finance Commission

vii) Panchayats would be more effective in spreading awareness among the people.

- Issues**
- Unavailability of funds
  - Incomplete autonomy
  - Ambiguous jurisdictions of panchayats
- } not needed specifically.

The panchayats are the institutions which define people's participation in disaster management. Steps like financial devolution, ensuring social justice etc. need to be taken to ensure they are more effective.

→ improve by mentioning SDG and Paris climate change accord

5 1/2





**MAINS MOCK TEST, 2022**

12. While most insurgent groups in North-East India have given up violence and are engaged in peace talks with the government, several issues could create hurdles in the future. Discuss. (15 Marks, 250 words)

*begin intro by giving references of causes of NE region*

Insurgency in the North-East goes back to the times of independence. It has continued in certain areas like Nagaland till today, while in other areas they have subsided.

- Groups giving up violence in
- NSCN - Imphal
  - Mizo National Front (surrendered in 1986)
  - Bodoland insurgents (surrendered in 2019)
- Use map*

**Challenges to progress**

i) Nature of demand : Many groups like NSCN-IM are demanding their own flag and constitution, which raises difficulties of negotiation.

ii) Sovereignty of other states : Several groups like the Kuki

*1st part has to be addressed*

*reason for decline in violence (not defined)*



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National Front have raised demands for land which are spread across multiple states.

you have addressed most of the

iii) Inter-group conflicts : While some groups are engaged in peace talks, others there are sections within these groups which refuse to negotiate. Eg. Breaking of NSCN-IM into NSCN-IM

iv) Security concerns : Many insurgent groups are engaged in rent extraction, smuggling of arms and drugs.

relevant points as per

v) Ethnic concerns : Accommodating the vast ethnicities and tribes of the North-East is a challenge which is causing hurdles to peace negotiation.

vi) Framework agreement : The framework peace agreement in areas of Nagaland has also harmed further

questions during

vii) Continuing violence : Negotiations cannot be taken in an



**MAINS MOCK TEST, 2022**

atmosphere of violence. Due to continuing violence in ~~areas~~ <sup>states</sup> like Nagaland and parts of Assam and Manipur, hurdles have come up in diplomacy.

**Way forward**

use headings → Enhancing Connectivity (eg) IMT

quote eg ↓

- i) Focus on a two-pronged approach of development as well as attractive schemes of surrender.
- ii) Ensuring that surrendered rebels can come into the negotiation process to create a greater acceptance.
- iii) Focus on phased withdrawal of AFSPA from certain areas to ensure people begin trusting the government.

missing in the answer

In the long run, the government can eliminate the insurgency in the North-East only by winning hearts and minds (WHAM) of the people.

Conclusion is futuristic

5



### MAINS MOCK TEST, 2022

13. Digital rights aim to protect people's rights, support democracy and ensure a fair and safe online environment. Critically analyze. (15 Marks, 250 words)

The rising demand for data in the 21st century has led to a greater need for digital rights and privacy laws. Several countries and organizations like the European Union have come up with such rights.

*Intro should never be in negative tone*

#### Role of digital rights

i) Data privacy: Digital rights ensure that the privacy of individuals is respected while collecting data on people are using online platforms.

*highlight keywords*

*try to mention some facts*

ii) Transparency and accountability: Data collection is done in a transparent manner, with the individual fully aware who is accountable for data collection.

*for mention*

iii) Confidentiality: Digital rights ensure that sensitive data cannot be shared with other organizations without the consent of others.

*value points*

*what are digital rights?*



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similar to 1<sup>st</sup> point

↓  
mention

i) Data security : Digital rights promote a safe legal and technical environment where the data of individuals are not liable to cyber-attacks.

in same point

Try to

avoid writing

v) People centric : Digital rights seek to ensure that the people remain in control of their own data, while also ensuring such data can be used for governance.

to avoid repetition

generic

points

vi) Data equality : Digital rights also ensure that the access to the internet and digital forums are equal to all citizens and not discriminatory e.g. net Neutrality

Issues with digital rights

give

specific

i) Awareness : Awareness of digital rights is poor among the people, which affects the acceptance of the same.

demands

only

ii) Digital divide : The digital divide affects digital rights of individuals as well e.g. TRAI states that internet penetration is 70% in urban areas, and 30% for rural.

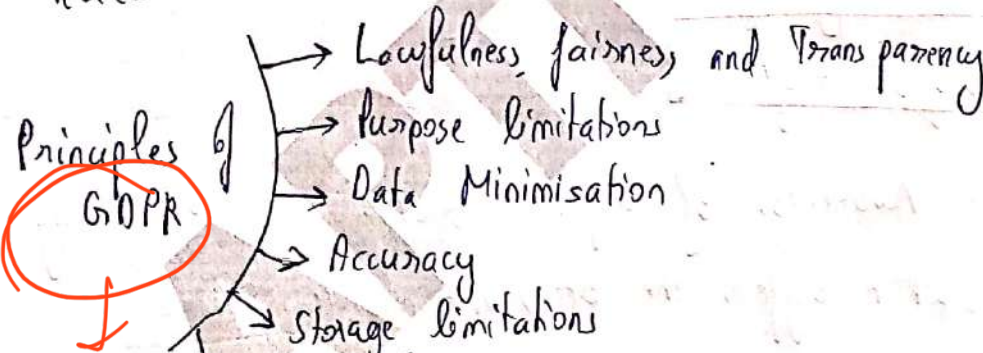
good



**MAINS MOCK TEST, 2022**

- iii) Cyber security : Frequent phishing attacks, ransomware attacks and hacking affect the digital rights of people.
- iv) Digital literacy : The understanding of digital media, social media, functioning of the internet etc. is poor among the people, which affects digital rights.
- v) Lack of legislation : Very few countries have proper out legislation to properly define digital rights. The European Union has come out with General Data Protection Rules

*valid points and good governance issues*



at least mention once about the full form. then it is necessary for each country to come out with legislations to properly define digital rights. India is working towards it with the draft Data Protection Bill.

*case abstraction*

5 1/2

*final conclusion*



## MAINS MOCK TEST, 2022

14. Discuss the benefits of Genome editing for healthcare. Enumerate concerns associated with the use of Genome editing. (15 Marks, 250 words)

*Intro  
is  
crisp  
and  
too  
the  
point*

Genome editing is a process by which the DNA sequences of organisms are altered in a way to provide new and desired characteristics. It has several benefits and concerns associated with it.

*for  
such  
question  
diagram  
flow  
chart*

### Benefits in healthcare

i) Tackling diseases: Patients as babies can be made immune to a particular disease by modifying a particular sequence of DNA in their cells.

*opportunity challenges*

*targeted medicines*

*safety*

*ethical concerns necessary*

ii) Food fortification: Genome editing can provide healthier and alternatives to certain food products e.g. golden rice variety created by ICAR.

*Disease*

*resistance crops*

*regulatory*

*challenge*

iii) Food security: New crops can be made resistant to several pests and diseases e.g. potato blight was removed.

*New industrial products*



**MAINS MOCK TEST, 2022**

from certain varieties of potato.

ii) Animal husbandry : Animals like poultry can be made more productive and more resilient to diseases, eliminating zoonotic diseases like bird flu. *logically frequent statements*

iii) Stem cell therapy : Genome editing is a critical aspect of stem cell therapy which is used for fighting cancer. *are mentioned*

iv) Precision medicine : Genome editing can be used to design medicines designed for a particular purpose and effective tackling of particular diseases.

Concerns associated → WHO's concerns could

i) Moral concerns in editing the genes of unborn foetus *also without* proper information of the future or the consent of the foetus *mentioned*

ii) Financial concerns as the technology is expensive and not easily available to everyone





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*well covered the issues* iii) Environmental concerns as effects of genome editing can be seen only after several generations, by which time it would become impossible to reverse it.

iv) Legal issues as the existence of Intellectual Property Rights affects the proper usage of genome editing technology.

v) Biological concerns as such editing may cause unintentional edits to the genome causing long-term health consequences

*mention about genome editing project*

- Way forward
- Global plan for cooperation
  - Invest in research in genome editing
  - Focus on data sharing

6

Genome editing is a futuristic technology. However, care must be taken to ensure this technology is not used for immoral purposes and instead for good.

*good conclusion*



## MAINS MOCK TEST, 2022

15. What are the advantages of Lithium-ion batteries? List down some of the challenges to the development of Lithium-ion battery manufacturing in India. (15 Marks, 250 words)

Lithium ion batteries are types of rechargeable batteries which uses the reversible mechanism of lithium ions to store energy. It has several advantages over other types of batteries.

fine intro

instead mention components and

highly specific features

anode, cathode and

electrolyte

### Advantages of Lithium ion batteries

i) High energy density: Lithium ion batteries are highly energy dense, which enables them to store high amounts of charge and power even larger computers and gadgets.

good points

Instead of other forms of batteries where constant regular charging is required, one regular charge is sufficient for Lithium batteries.

iii) Low self-discharge: Compared to Nickel-based batteries where self-discharge is high, lithium batteries can hold their charges for longer periods of time.



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use flowchart  
 diag. for  
 such  
 answers.

i) Low maintenance : It is cheaper and cost-effective to maintain lithium batteries as compared to other ones.

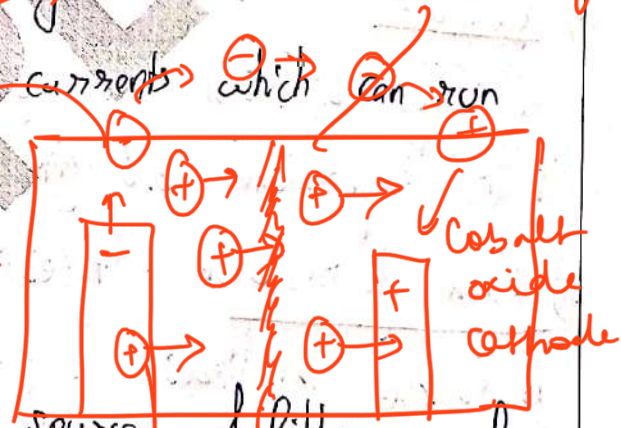
ii) Lighter : Lithium batteries are compact and yet much lighter than batteries of other elements as lithium itself is the lightest metal known.

iii) Speciality cells : Certain forms of lithium batteries can be designed to ensure higher currents which can run advanced appliances.

Challenges in India

i) Sources : India lacks domestic sources of lithium and is highly import dependent on areas like Argentina, Bolivia and Chile.

ii) Cost : Lithium battery manufacturing requires higher capital costs and investment, which affects the process.





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iii) Safety protocols : Manufacturing Lithium batteries requires large amounts of explosive substances, ~~like~~ which needs proper safety protocols.

iv) Environmental concerns : Process of manufacturing creates toxic waste which needs to be disposed.

v) Climate : The hot and humid climate of the country is also a major issue as Lithium is highly reactive at high temperatures and in contact with water.

vi) Lack of research : Research in Lithium-ion technology is lacking in India.

The need for the future is to focus on finding domestic sources of lithium, focus on private sector involvement in ~~Lithium~~ battery manufacturing and diversifying sources from the Lithium triangle.

incentive for recycling

recycling

development of circular economy



**MAINS MOCK TEST, 2022**

*Introduction is fine but to improve mention the specifics of BDA 2021*

16. What is Biodiversity? Discuss the concerns with Biological Diversity (Amendment) Bill 2021 and give your suggestions. (15 Marks, 250 words)

*reduce compliance burden encourage conductivity etc.*

Biodiversity is the variety and variability of life on the Earth. It is a measure of variation at the genetic, species and ecosystem level. In India, maintenance of Biodiversity is done through the Biological Diversity Act, 2002

Key points of Biodiversity Amendment Bill, 2021

- Relaxes certain rules in Bio. Res. Act.
- Simplification of research process
- Boosting Indian system of medicine
- Decriminalisation of certain provisions
- Exempting AYUSH practitioners
- Allows foreign investment.

*points are valid*

**Concerns of the Bill**

i) Trade over conservation : The Bill attempts to facilitate trade as opposed to conservation, protection of biodiversity and knowledge of local communities.

*but by highlighting keywords*



MAINS MOCK TEST, 2022

- ii) Lack of consultation : The Bill has been introduced without seeking public comments as required under the pre-legislative consultation policy. Most of the relevant points are covered
- iii) Commercial utilization : Registered AYUSH practitioners can access any biological resource for commercial purposes. ↓
- iv) Only benefits for AYUSH industry, and not the other systems of medicine. ↓
- v) Bypassing prior approval : It exempts cultivated medicinal plants from the purview of the act. This provision could allow large companies to evade requirement for prior approval. ↓
- vi) Decriminalisation of certain provisions might lead to over-exploitation of resources. ↓
- vii) Sidelining of local bodies : The Act also sidelines Biodiversity Management Committees at the local level.

the arguments presented



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Suggestions

use headings → recognise indigenous comm

- i) Ensure greater public consultation for the Act → incorporate the public suggestions → Prevent bio-piracy
- ii) Integration of International treaties like the Nagoya Protocol needs to be done into the Act → document
- iii) Provisions for a people's Biodiversity Register should be included into the Act. → study under PBRs.
- iv) A mechanism for balancing trade with conservation is also necessary which needs to be incorporated into the Act
- v) Involvement of local bodies like BMCs and gram sabhas need to be incorporated into the Act.

6

Biological Diversity  
The Biodiversity Amendment Bill, 2021 has ~~its~~ been introduced with noble intentions, however it has certain drawbacks which need to be addressed to ensure sustainable growth and development.

Conclusion  
is  
optimistic



### MAINS MOCK TEST, 2022

17. Concerning National Policy on Biofuels, discuss the ethanol-blending in India and what is the environmental cost of ethanol blending? (15 Marks, 250 words)

try to

mention

the

current status

↓

As per

MoP

The National Policy on Biofuels was notified by the Ministry of Petroleum and Natural Gas. It was aimed at increasing the use of biofuels as vehicular fuel.

Apply written introduction

- 20% blending of ethanol in petrol
- Viability gap funding scheme
- Focus on advanced biofuels, biodiesel to be encouraged
- Thrust on research and development.

#### Ethanol Blending in India

##### Significance

i) Reduce dependency on Petroleum, as India imports 85% of its oil requirements. *i.e. - Import bill*

ii) Saving foreign exchange to the amount of \$4 billion annually.

as eg. for above mentioned point





**MAINS MOCK TEST, 2022**

iii) Less polluting fuel and offers equivalent efficiency at a lower cost.

iv) Provides incentives to farmers to earn extra income by growing produce that can be sold as feedstock

v) Enables us to save foodgrains from going to waste, especially the damaged foodgrains.

vi) Enables sugar mills to realise their debts by diverting sugarcane for ethanol in case of declining prices of sugar.

vii) Step towards India's goal of net-zero emissions by 2070.

**Environmental costs**

i) Water footprint :- Growing of water demanding crops for ethanol blending like sugarcane would result in decline of groundwater and salinization

ii) Food security :- Food grains meant for the impoverished

*you addressed the points in 2 elements only mention other costs such as health benefits*

*new management efficiency etc.*



**MAINS MOCK TEST, 2022**

are being diverted to distilleries at prices cheaper than what states pay for their PDS networks.

good points ↓

iii) Efficiency: Fossil fuels still produce higher amounts of energy e.g. 1 gallon of ethanol produces less energy compared to one gallon of gasoline.

ii) Emissions: Emission of carbon dioxide and water from burning of ethanol may result in changes in water cycle.

i) New vehicles: Ethanol fuel vehicles require updated engines which the production of which would cause emissions.

burning efficiency is maintained throughout the

Way forward

- Ethanol from wastes
- Incorporate water efficient practices for crops diverted for ethanol making
- Prioritize crop production under micro cultivation

Ethanol blending is an advisable mechanism to ensure lesser emissions at nearly equal efficiencies. However, more research needs to be done before complete implementation of the same.

6 1/2

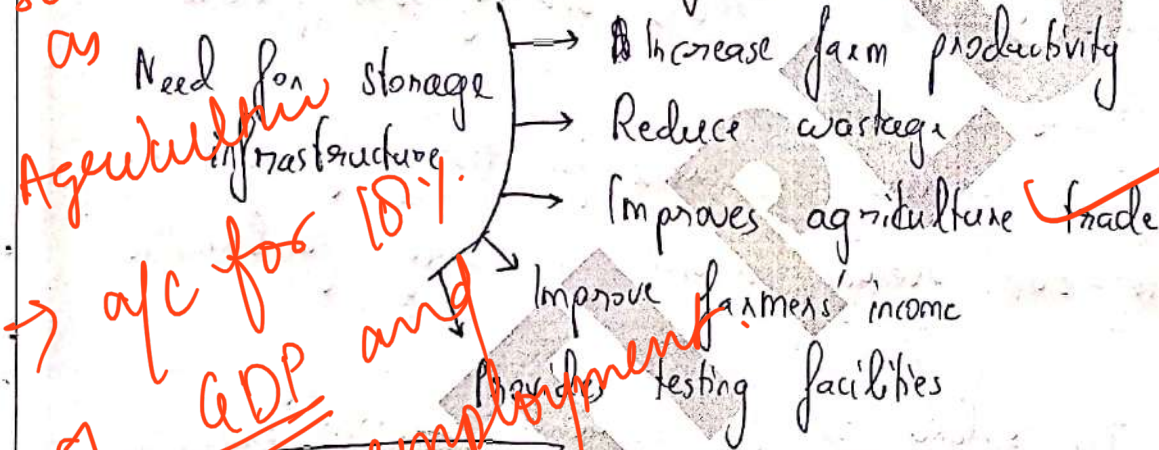


## MAINS MOCK TEST, 2022

18. Analyze the storage infrastructure in the farm sector. Also, discuss the measures taken by the government to address the existing impediments. (15 Marks, 250 words)

*Need to quote the facts such as*

Storage infrastructure in agriculture forms a part of essential backward and forward linkages for marketing. It is critical for ensuring food security as well as getting value for produce of farmers.



*→ a/c for GDP and employment*

**Problems of storage**

- i) Regional disparity : Imbalances in the availability of storage and a shortage in consuming states is seen. 64% of FCI godowns are located in large procurement states.
- ii) Inadequate infrastructure : A gap exists between storage



### MAINS MOCK TEST, 2022

supply and demand at 35 million Metric tonnes.

iii) Low private investment : Due to low returns on investment, this sector is less attractive to private companies.

iv) Lack of cold storage : India's current cold storage capacity is insufficient for fruits and vegetables produced in the country.

v) Accessibility : Connectivity is weak for storage facilities in the North-East, average distance for storage facilities is 50 km.

vi) Cost : The relative cost for storage and transportation in India is high compared to developed countries, which reduces the competitiveness of products.

vii) Fragmented institutions : Storage facilities are currently managed by FCI, NAFED, WARRA etc. resulting in lack of coordination between them.



## MAINS MOCK TEST, 2022

### Government measures

i) Inclusion of agri-warehousing under priority sector lending by RBI

ii) Tax incentive is given to private players for setting up of storage facilities.

iii) Private Entrepreneurship Guarantee scheme to incentivise private investment.

iv) Agriculture Infrastructure Fund to the tune of ₹1 lakh crore for post harvest infrastructure.

The Kisan Sampada Yojana and Mega Food Parks Scheme also seeks to promote agriculture infrastructure.

Agriculture infrastructure is a critical measure to ensure a \$5 trillion economy by 2030, and also double farmers' income by then. While the government has taken several steps, more needs to be done in that regard.

*Conclusion is futuristic*





## MAINS MOCK TEST, 2022

19. Identifying the key vulnerabilities in India's cyberspace, and discussing the framework which should be adopted in the envisaged new cyber security policy in India. (15 Marks, 250 words)

good that you quoted reports - could also mention that index is already 2nd largest online market worldwide

India has been extremely vulnerable to cyber-attacks in recent times. The Global Cybersecurity Index, has ranked India on the lower side for key cyber safety factors.

Gaps in Cyber security policy

i) Structural limitations: Inherent security gaps in internet system as new forms of threats are being generated e.g. phishing and ransomware attacks.

ii) Criticisms of the IT Act: Confidential data protection, aspects of commercialisation of data not addressed, while maximum compensation is fixed at ₹ 5 crores. (ep)

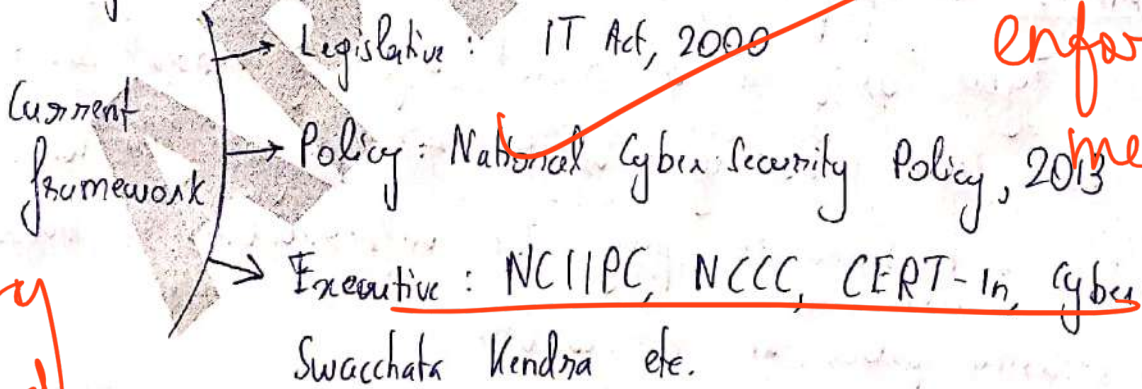
iii) Administrative gaps: Multiplicity of laws and organizations result in implementation gaps of the existing policies

iv) Capacity gap: Lack of trained security professionals who can adequately tackle cyber threats



**MAINS MOCK TEST, 2022**

- v) Lack of awareness : Due to the lack of digital literacy and digital divide, there is a lack of awareness for the need of cyber security. *→ Negligible here of*
- vi) Data privacy in India is still a concept with <sup>cyber</sup>no provisions for a law passed as of yet. *specialist*
- vii) State surveillance : Cyberspace in India is threatened by state surveillance, e.g. the Pegasus controversy. *Could also mention*
- viii) Gaps in global cooperation : While India has been vocal for the need of cyber security, we she has yet to sign *law of*





**MAINS MOCK TEST, 2022**

Way forward

- i) Capacity building: Centre of Excellence institutions of cyber security needs to be established. \* National cyber security policy 2013
- ii) Invest in cyber research and development.
- iii) Private sector engagement should be incentivised e.g. PPP model for cyber security.
- iv) Legal reforms like modification of the IT Act, 2008 and introducing dynamic systems to address new threats are needed. \* CERT-In
- v) Steps to ensure awareness also need to be promoted among the people. \* IUC

Cybersecurity is a critical aspect of national security, with some even considering it as the 4th platform for war. Hence, it is necessary to plug the vulnerabilities in Indian cyber security policy at the earliest.

Conclusion is unimproved

7





## MAINS MOCK TEST, 2022

20. What do you understand about the knowledge-based economy? What are the powers and components of a knowledge-based economy? Can India be considered a knowledge-based economy? (15 Marks, 250 words)

*Intro is crisp and to the point*

A knowledge based economy is an economic system in which goods and services are based primarily on knowledge-intensive activities that contribute to a rapid pace of advancement in technical and scientific innovation.

### Components of a knowledge Based economy

- i) Innovation and Research : There is a huge investment into future technologies like Robotics, Artificial Intelligence etc.
- ii) Information Technology : There is a great deal of digitalization encompassing all walks of life.
- iii) High labour skill set : Skill set of labour is very high and are usually involved in management and research than in actual delivery of service or manufacturing.
- iv) Automation : Since advanced economies face ageing population,

*your points are good and are well justified.*



## MAINS MOCK TEST, 2022

- tend to reduce reliance on human labour, automating the process.
- v) Emphasis on quality education: There is a linkage between government policies, industries and academia in pursuit of knowledge.
- vi) Active involvement of academia: Academics are involved not just in research, but are actively involved in improving the standard of living in society.
- Very good apt handwriting format*

### Knowledge economy in India

#### if Issues

- i) Technology: There is a lack of investment into technology, resulting in high capital-output ratio. E.g. Indian IT companies with ~~thrice~~ the employees as Google make only one-third of its income.
- ii) Investment in Research and Development: India's investment in R&D is ~~a low~~ 0.6% of GDP, which is low compared to global standards.



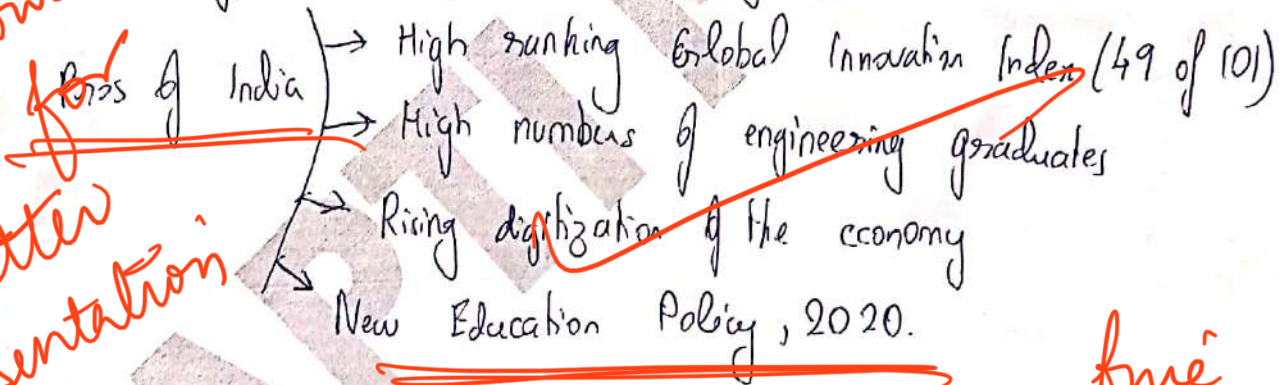
**MAINS MOCK TEST, 2022**

iii) Lack of industry-academic linkage results in <sup>the biggest number</sup> of unemployed citizens, with underemployment also an issue.

iv) Skill development of graduates is extremely low <sup>wide</sup> e.g.

TCS. <sup>point</sup> figures show that only 40% of all graduating engineers are employable. <sup>Coverage -</sup>

v) Low labour skillset of the Indian population goes against the needs of a knowledge based economy.



While India has a long path to cover before <sup>being</sup> considered as a knowledge-based economy, the government is taking steps to ensure the same for the future.

Language is simple and lucid. Keep it up.

6 1/2

Use suitable diagrams and flowchart for better presentation

most of

the points have

wide

Coverage -

fine

Conclusion