

APSC Mains 2023 TS - 13 (GS Paper 3)
Duration – 3 Hrs

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(Please fill your details correctly)

Medium:

 English ☒

 Assamese ☐

INDEX NUMBER			INSTRUCTIONS
Q.NO.	Maximum Marks	Marks Obtained.	
1	10		Please read each of the following instruction carefully before attempting the questions: - There are TWENTY questions printed in ENGLISH. - All questions are compulsory. - The number of marks carried by a question/part is indicated against it. - The answers must not exceed 150 words for 10 marks and 250 words for 20 marks. - Content is more important than the number of words. - Answers must be written in the medium authorised in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorised one. - Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off
2	10		
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20	15		
TOTAL:	250		Signature of the Student: Yuvraj Gogoi



SPM IAS ACADEMY
SHAPING BRILLIANCE

Brief report of Performance Evaluation of student in the paper

	Poor	Average	Good	Very good	Excellent
Understanding the context and demand of the questions					
Relevancy of the content					
Structure and flow of the answer					
(a) Introduction					
(b) Body					
(c) Conclusion					
Subject knowledge					
Language of the answer					
Presentation					
(a) Underline to the keywords					
(b) Use of flowcharts or diagrams					
(c) Paragraph limits and overall					
Understanding of directives					
Factual correctness					
Overall performance					

Detail Feedback

Q1. The Horticulture sector, though has potential to transform agriculture landscape of country, is beset with several challenges. Examine. (10 marks/150 words)

Ans:—

The Horticulture sector refers to the cultivation of grapes on a commercial basis.

Horticulture sector as a potential to transform agriculture landscape

- ① Large production: Horticulture has large scope of production.
- ② Increase in the income of farmers.
- ③ increase in exports and market availability.
- ④ methods like irrigation, crop diversification can also be used to increase productivity.

Challenges in Horticulture sector:

- ① High input: Input cost is high as compared to other traditional crops.
- ② Weather & climate ~~varies~~ varies across India making it unable to practice horticulture all over India.
- ③ Food process industries (FPI) in India are at nascent stage. without proper refrigeration and storage facilities, large scale cultivation is not productive.

Thus, there are few challenges regarding Horticulture sector. Although with proper measures, these issues can be minimised.

Q2. The 'One Nation, One Ration Card' (ONORC) scheme is a huge step forward in empowering the poor and disadvantaged, yet it faces obstacles in terms of design and implementation. Discuss. (10 marks/150 words)

Ans:—

The One Nation, One Ration Card (ONORC) scheme is a flagship initiative by Govt. of India in providing food grains.

Benefits of ONORC scheme

- ① Food grains are made available anywhere accessible across India,
- ② with a proper ration-card, a person from any state can avail food grains from any Fair-Price shops across India.
- ③ helpful for migrant workers.
- ④ more inclusive in nature.

Obstacles in terms of design & implementation

- ① hard to implement this scheme due to many limitations such as social, geographical etc.
- ② cooperation of states with union is required for implementation.
- ③ regular update and proper maintenance of beneficiaries is also a difficult task.

Thus, ONDC scheme is a positive step towards social and financial inclusion.

Q3. Climate change is a threat to food and nutrition security of the world. Examine the impact of climate change on agriculture. Suggest ways to make agriculture sustainable and climate resilient. (10 marks/150 words)

Ans:—

climate change is the phenomenon of increasing global temperatures along with other climate extremities such as ocean acidification etc.

It has several impacts on the planet.

Impact of Climate change on Agriculture

① Desertification :

- $\frac{2}{3}$ rd India's geographical area faces drought at some points of the year.
- decreases the availability of cultivable area.

② rising sea ~~to~~ level also effects marine life and fishing industry.

③ water-intensive crops like rice cultivation has also becoming problematic.

ways to make agriculture sustainable & climate resilient

① Increase in cultivation of millet → as it requires less water & can survive in harsh conditions.

② promoting crop rotation & crop diversification.

③ using water more judiciously → promoting micro-irrigation (it can save water upto 40%).

Thus, agriculture should be sustainable and climate resilient as a step towards SDG-13 → climate Action.

Q4. The food processing industry has emerged as a high-growth and high-profit sector due to its immense potential for value addition. In this context, discuss 'Production Linked Incentive Scheme for Food Processing Industry. (PLISFPI)'. (150 words/10 marks)

Ans:-

Food Processing Industry (FPI) refers to value-addition and processing of raw agricultural products to edible items.

Benefits of FPI

- ① better price for farmers for their produce.
- ② longer shelf-life of products.
- ③ increases export - capability.
- ④ reduces agricultural wastage.
- ⑤ formation of backward & forward linkage with agriculture.

PLI scheme for FPI

- ① Production Linked Incentive (PLI) for food-processing industries will promote agricultural diversity & production.
- ② It will boost in ~~the environment of~~ employment generation.
- ③ Subsidiary sectors will also get promoted.
- ④ skill development among rural youths can also be promoted.

Thus, PLI scheme for FPI is a good step for making agriculture more diversified and inclusive.

Q5. Solar power sector is not only leading the mitigation efforts against climate change, but the innovations in solar power can also accelerate adaptation of agriculture to a new reality of changed climate. Discuss. (10 marks/150 words)

Ans

India is ranked at 4th spot in terms of solar power generation with installed capacity of over 175 GW.

solar power as an effort against climate change:

① Reduced pollution:

- solar panel and generation process generates almost no pollution.

② utilises the solar energy → which is renewable in nature.

③ it can be installed at any location, thus making it more accessible.

Solare power as a adaption of agriculture to a new reality of changed climate

① solare power can be utilised for irrigation purposes for increasing production.

② To promote farm-mechanisation as only 52% of India's agricultural land uses mechanisation, compared to 85% in US.

③ also can be used in modern agricultural methods like — aquaponics etc.

Thus, solare power holds many significance to curb the effects of climate change,

Q6. Biotechnology is often seen as a revolutionary intervention, but the applications of biotechnology have had mixed socio-economic implications. Examine. (10 marks 150 words)

Ans:—

Biotechnology is a revolutionary step of mankind due to its wide range of applications in fields like — medical, pharma, agriculture etc.

Contribution of Biotechnology

- ① promoting intensive agriculture.
eg. Bt-cotton, Bt-Brinjal.
- ② new vaccines for various diseases & pathogens.
eg. COVID-vaccines.
- ③ new seeds and unique methods of plantation.

Socio-economic implications of application of Biotechnology

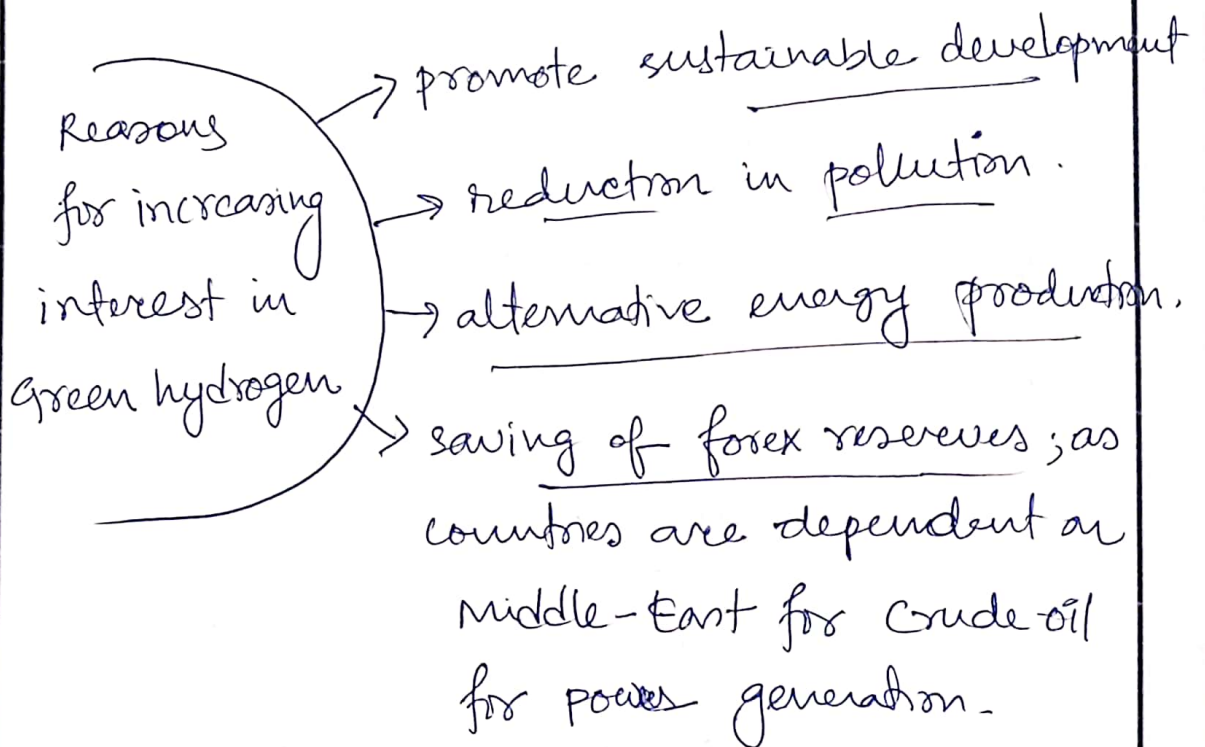
- ① mixing of genes in agricultural seeds.
eg. in Bt - Brinjal; genes of other
organisms have inserted.
- ② Gene-editing technologies like CRISPR-
Cas9 has severe socio-economic
implications.
- ③ may create more economic division
between developed and less-developed
economies.

Biotechnology is a significant leap
towards development but there are
negative implications as well.

Q7. Green hydrogen can be the engine of a sustainable economy, but it would require crossing financial and technological barriers. Discuss the reasons for increasing interest in green hydrogen and challenges in its adoption as the fuel of the future. (150 words/10 marks)

Ans:—

Green hydrogen is a breakthrough development for a sustainable economy as it provides clean energy. It is produced from water by applying heat through a process called catalysis.



challenges in its Adoption as the fuel of future:

- ① more research & development is required for its commercial use.
- ② high initial capital cost for setup.
- ③ its longevity is not determined.
- ④ For power generation, the usage dependence on coal can't be eliminated overnight → as India has many reserves of coal.

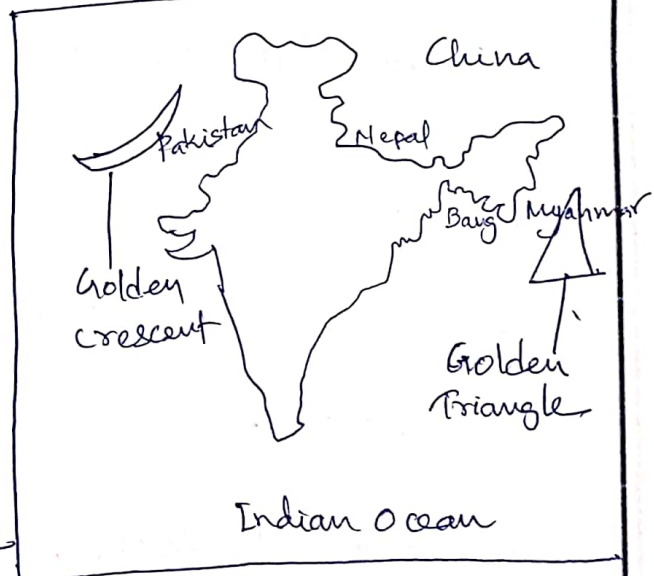
Thus, proper research and utilisation of Green hydrogen is required to attain SDG-7 → Affordable & clean energy.

Q8. Persistence of various cross-border threats and absence of robust intra-regional trade with neighbouring countries have forced India to employ a unilateral approach to border management. Highlight various cross-border threats faced by the country and explain how they can be managed in an effective manner. (10 Marks/150 words)

Ans

India is surrounded by many hostile neighbours such as Pakistan & China and it also has maritime boundary of 7516.6 km.

Cross-border threats
faced by India;



① Terrorism:

- through both state and non-state actors,
- from countries like Pakistan.

② FICN (Fake Indian Currency Notes)

with an objective of dismantling Indian economy,

② Flow of Drugs and Narcotic substances from Golden Crescent (Pak, Iran, Afghanistan), and Golden Triangle (Myanmar, Thailand)

ways to manage cross-border threats

① Developmental initiatives

- Kaladan multimodal Project.
- BCIM Corridor (Bangladesh, China, India, Myanmar)
- IMT (India-Myanmar-Thailand) project.

② Act East Policy.

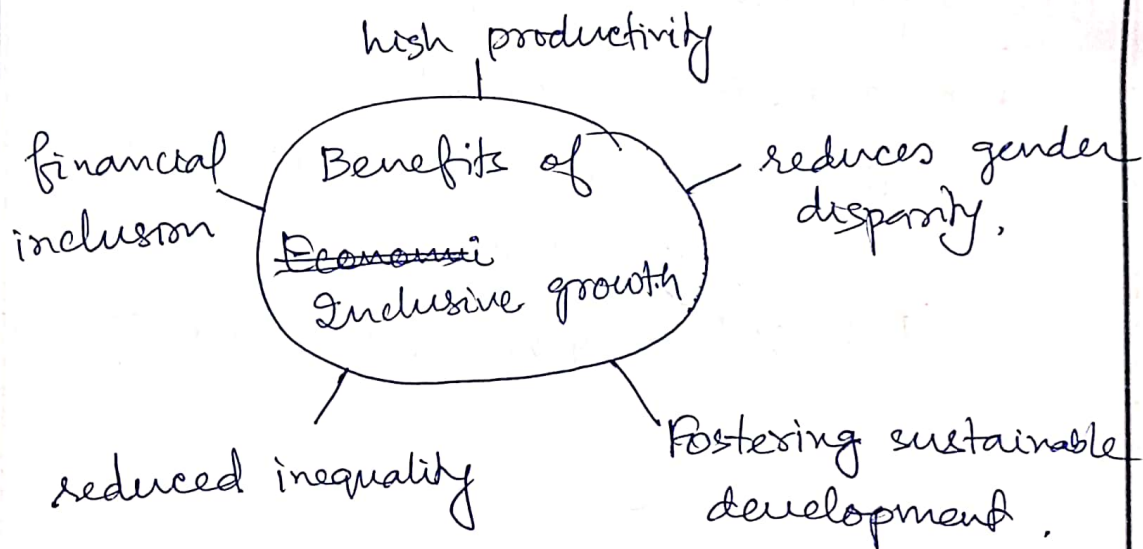
③ Regional cooperation through organization like SAARC, BIMSTEC.

Following proper steps, India can ~~substantially~~ substantially reduce cross-border threats.

Q9. When inclusive growth is the goal, the approach cannot be anything other than education, skilling and job creation. Critically examine the success of various post-liberalization policies of the government in this regard. (10 marks/150 words)

Ans:-

Inclusive growth refers to the inclusion of all segments of society in the ~~progress~~ progress towards economic development.



Success of post-liberalization policies of govt in regard of inclusive growth

① Increase in GDP: many private organizations have flourished increasing the growth rate.

② MGNREGA (National Rural Employment Generation Scheme): It started in 2004 providing 100 days of promised work for people below poverty line.
- promoted inclusive growth.

② National Food Security Act, 2013:

- provision for providing food grains at minimal costs for people below poverty line.
- helpful in events like → crop failure, COVID-pandemic etc.

Thus, there are various policies of govt towards inclusive growth.

Q10. Female workforce participation rate (FWPR) remains low in India despite economic development and rising education levels of women and girls. Discuss the reasons behind low Female workforce participation rate in India. Suggest measures for improvement. (10 marks/150 marks)

Ans

Female workforce Participation Rate (FWPR)
is very low (about 20%) despite many
developments.

Reasons behind low Female WPR

- ① Patriarchal mindset → restricts women
to go outside in search for job.
- ② working places are not ^{much} suitable for
women.
- ③ rising cases of atrocities and assault
against women.

measures for improvement :

- ① Govt. initiatives like "Beti Bachao, Beti Padhao" for sending girl child to school,
- ② "Sukanya Samridhi Yojana" for financial inclusion of girl child.
- ③ POSH Act → "Prevention of Sexual offences against Women".
- ④ Promotion of reservation of seats for Govt. jobs.

Thus, through govt initiatives and people's participation, FWPR can be brought to a satisfactory level and to attain SDG-5 → Gender equality.

Q11. Fiscal policy of India always has two objectives, namely improving the growth performance of the economy and ensuring social justice to the people. Elaborate. (15 marks/250 words)

Ans. —

Fiscal policy refers to the arrangements and ideas to be followed for vertical devolution of grants.

Fiscal policy of India has 2 objectives

- Improving the growth of economy
- ensuring social justice to the people.

Fiscal policy in improving the growth performance of the economy

① Being a developing economy, improving the growth performance is a must objective.

- ② It helps in generation of employment and opportunities.
- ③ ~~base~~ helps to flourish the tertiary sectors to flourish.
- ④ Increases exports and diversifies the economy.

Fiscal policy in ensuring social justice to the people

- ① As marginalised & vulnerable people's upliftment ← is India's major objective, so ensuring social justice is a necessity.

② Economic growth without social justice
leads to widening gaps in income.

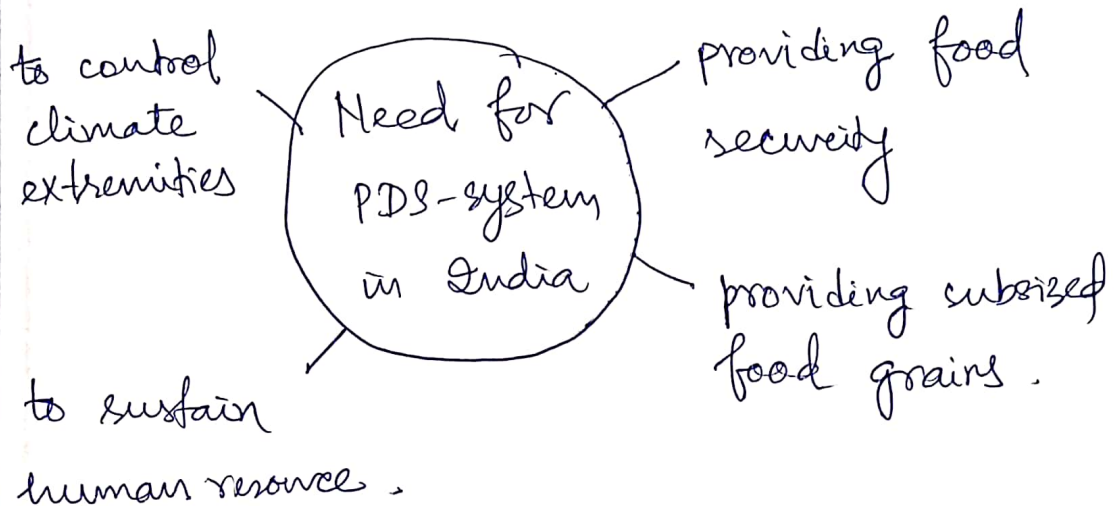
③ Schemes like Jan-Dhan Yojana,
PM-Fasal Bima Yojana etc. aims to
financial inclusion of the Indian
people → to ensure social justice.

Thus, Fiscal policy of India
has 2 goals of different objectives
which needs specific mechanisms
to address each issues.

Q12. In light of various issues being faced, discuss the need for a revamped and need-based PDS in India. (15 marks/250 words)

Ans:—

Public distribution system (PDS) is a food-grain distribution mechanism formulated by Govt of India for marginalised and people below poverty line.



Issues faced by PDS in India

① Ghost beneficiaries: Duplication of names and discrepancies in stakeholders list.

- ② Storage issues .
- ③ High expenditure from the Govt. exchequer .
- ④ high procurement of food grains .

Need for a revamped and need-based
PDS in India

- ① To reduce mal-practices in the supply and distribution side ,
- ② To reduce corruption .
- ③ To eliminate the issue of ghost-beneficiaries .
- ④ To reduce expenditure of the Govt. .

⑤ To supply PDS-food grains only to those stakeholders who actually need it,

⑥ Formulation of a better mechanism which can replace/modify the PDS system.

Thus, there is a need of a revamped & need-based PDS for greater inclusion and speedy delivery of food-grains.

Q13. Food subsidy bill is becoming an "unmanageably large" expenditure for the government. In this context, analyse the need for revisiting the National Food Security Act (NFSA), 2013. (15 marks/250 words)

Ans

Essential commodities like Food grains are being subsidized to the marginalised sections through National Food Security Act (NFSA), 2013.

Recently, the debate of rising food subsidy bill is taking up which is leading to large expenditure of the central govt.

Need for revisiting the NFSA

- ① To reduce expenditure.
- ② To find a need-based approach.

③ Strict implementation of anti-corruption measures.

④ Increasing debt of states combined with high food subsidy bill can devastate the economy.

ways to improve NFSA, 2013

① To provide subsidized food-grains to the needy segments.

② Reforms in the NFSA for better grievance redressal.

③ Skill ~~base~~ and capacity building approach can be undertaken.

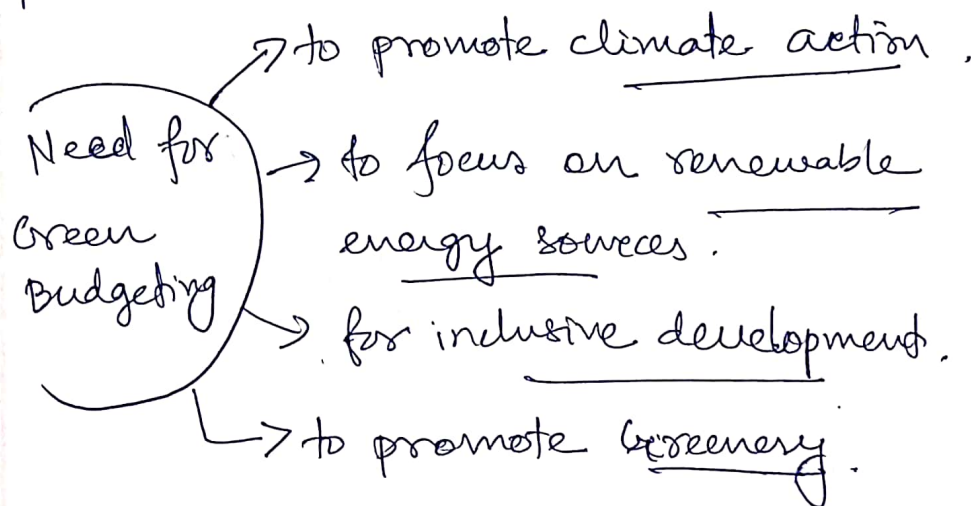
Thus, for an sustainable economy of Union & states, there is a need to address ~~to~~ the issue of regulating the Food Subsidy Bill.



Q14. An effective approach to green budgeting is underpinned by strong strategic framework, tools for evidence generation and an enabling budgetary governance framework. Discuss. (15 marks/250 words)

Ans

Green Budgeting refers to the formulation of Budget along with taking into account the environmental destruction in the process.



Challenges to Green Budgeting

① Lack of awareness:

- there is less awareness among the developed & developing economies for

the need of green budgeting.

② lack of community participation & capacity building.

③ Slow progress of renewable energy generation.

④ many European countries ^{are} still dependent on coal-fired power plants for energy generation.

Measures to be followed for promoting Green budgeting :

① ~~No the~~ Saying no to the environmental destruction and pollution.

- ② promoting renewable resources of energy.
- ③ promoting awareness campaign.
- ④ leading the way of environmental protection.
- ⑤ Promoting Production-linked Incentive (PLI) ~~and~~ in
- ⑥ initiatives like Green Bond should be promoted.

Thus, through proper and holistic approaches, Green Budgeting can be promoted.

Q15. State finances in India present a worrying picture, with debt sustainability being a major concern. Discuss in context of the recent RBI report on state finances. (15 marks/250 words)

Ans:—

State has the responsibility of maintaining the finances related to the collection of revenue and expenditures.

In the recent reports of RBI, many states such as Punjab, Chhattisgarh, Andhra Pradesh have been severely inflicted with rising Debt to GDP ratio.

Issues with debt sustainability

- ① ~~People~~ Fiscal strength of a state goes down with rising debt.
- ② a large amount of state finances are used in payment of interest.

③ capital expenditure — for building assets and infrastructure drastically reduces.

④ makes the state vulnerable to global monetary or other shocks.
eg. COVID-CRISIS.

ways to get-out of the unsustainable
debt

- ① Reduction in expenditure on subsidies.
- ② capital expenditure should be promoted.
- ③ Focus on capacity building and skill development.

Measures adopted by Govt of India:

① FRBM (Fiscal Responsibility and Budget Management) Act, 2003 →

provides the optimum limit of Fiscal deficit and debt to GDP ratio.

② RBI also releases advisories and guidelines about necessary measures to be undertaken.

Thus, necessary steps should be taken by the respective state governments to properly address the issue of high Debt.

Q16. Discuss the role of geospatial technologies in developing effective approaches for disaster risk reduction and disaster management. (15 marks/250 words)

Ans. —

Due to rising ~~ris~~ cases of disaster and climatic events, many emerging technologies are coming up.

Geospatial technologies refers to the use of geological variations before the advent of any climatic extremities.

Role of Geospatial technologies in developing approach for Disaster Risk Reduction and Disaster management.

① As it is an emerging technology,

so there are many scopes for improvement.

② Geospatial technologies are also beneficial ^{attending} for natural disasters like earthquake, tsunami etc.

③ For better disaster management, increase in expenditure for geospatial technologies can be done.

India's approach for Disaster risk reduction (DRR) and Disaster management

① Formulation of Disaster management Act, 2005.

② ~~Policy~~ Development of policies in sync

with — Paris Agreement.

UN Framework for Convention of Climate change (UNFCCC).

Sendai Framework (2015-2030).

③ Expenditure on Research and Development (R&D) on emerging technologies & innovations,

According to Sendai Framework,

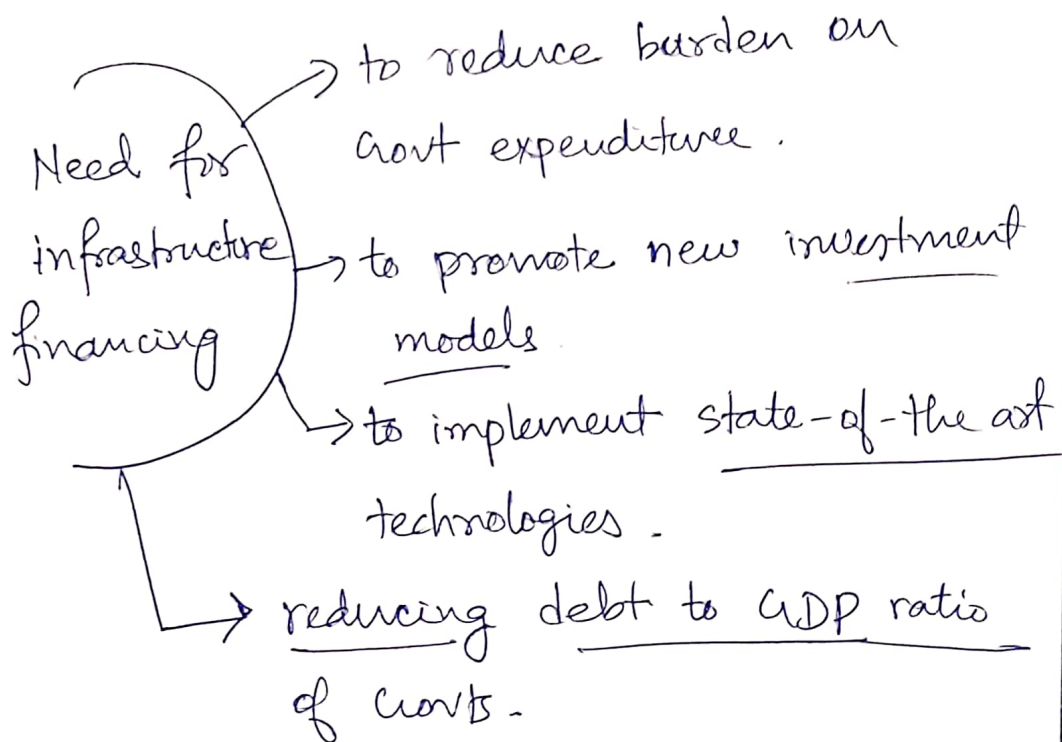
every \$1 spent on Disaster-risk reduction, there is a saving of \$17

on times of disaster. So, disaster risk-reduction & disaster management should also emphasise on preparedness along with mitigation.

Q17. What are the challenges of infrastructure financing in India? Do you think the current investment models are effective in addressing those? Critically comment.
(15 marks/250 words)

Ans: -

Infrastructure financing refers to the spending of resources in infrastructure in an optimum way possible.



challenges of infrastructure financing in India:

① As the country was primarily based

on Govt expenditure for infrastructure financing, so development is less,

② New infrastructure financing
methods like Public-Private Partnership
(PPP) is limited to few pockets, eg
airports, railway etc.

③ Public resentment against disinvestment
and strategic disinvestment/privatisation.

④ Indian ~~for~~ contractors and workers
might feel excluded on foreign
financing projects.

Current Investment models are :-

① Build-Own-Transfer (BOT)

② Build-Own-Operate-Transfer (BOOT), etc.

Effectiveness of current investment models in addressing infrastructure financing issue?

① PPP model has many promise regarding → limited govt expenditure
→ state-of-art technology.
→ speedy completion.

② many investment models also have new and innovative methods for infrastructure financing.

Thus, there is a constant need of modification of investment models for addressing the issue of infrastructure financing.

Q18. The impact of floods on life and property can be most effectively reduced by hazard mapping. Comment. (15 marks/250 words)

Ans. —

Floods is a recurring phenomenon on many parts of India & Assam.

-According to a report of Rashtriya

Barh Aayog →

10.2% of India is flood-prone and 39.5% of Assam is flood prone.

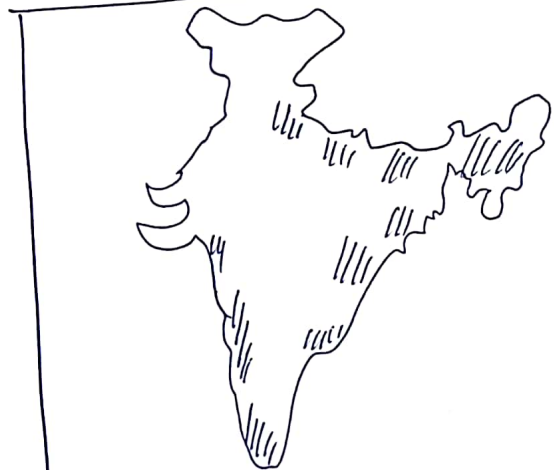


Fig: Flood-prone areas of India

Hazard mapping refers to the making of plot for vulnerable zones and proper identification of those.

Hazard mapping in reducing the impact of Flood on life & property

- ① Proper hazard mapping reduces the chances of loss of lives and property in a disaster.
- ② Hazard mapping generates awareness among people. ~~and~~
- ③ Community participation and capacity building can be done through Hazard mapping.
- ④ Hazard mapping instructions can be broadcasted through air or by TV.

in the disaster prone areas ,

India's initiative on Hazard mapping :

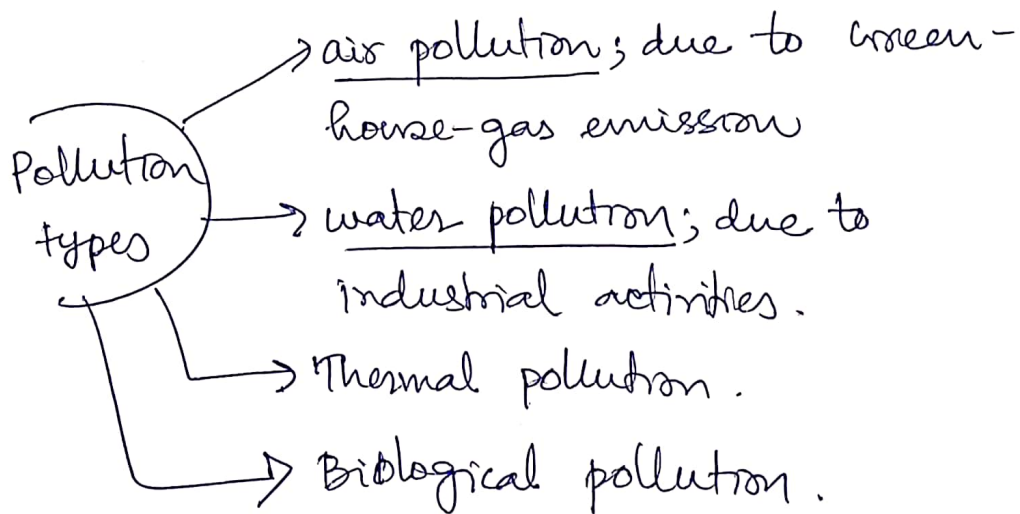
- ① Mapping of Flood and Cyclone related zone mapping ,
- ② NAQVIM → National Aquifer mapping for mapping Ground water levels ,
- ③ Proper census of livestock and their protection measures can also reduce the fatality rate ,

Thus, Hazard mapping is the saviour for any seismic or meteorological extremities and to achieve SDG 15 → Life on Land & SDG 11 → Responsible cities & communities

Q19. Identify and discuss various pollution control and mitigation technologies. (15 marks/250 words)

Ans:—

With the advent of industrial revolution, ~~and~~ automobile production along with many industrial production, the pollution level shoot up to many-fold compared to pre-industrial times.



Need for pollution control & mitigation technologies

① Reduce Global warming; Paris Agreement

2015 suggests to reduce pollution to reduce global temp. to 1.5°C compared to pre-industrial times.

② protection of flora & fauna :

- Several reports suggests that the world is going through 6th Mass Extinction primarily due to anthropogenic activities.

Pollution Control and mitigation technologies

① Institutional measures :

1.1. UNFCCC (UN Framework for Convention on Climate change).

1.2. UN-FAO (Food & Agriculture Organization)

1.3. UNEP (UN Environment Program),
etc.

② legislative measures:

②.1. Formation of National Green Tribunal (NGT) in India.

2.2. Acts like — Environment Protection Act (1972)
Forest Conservation Act (1980).

③ Other measures:

3.1. Phasing out BS-III vehicles.

3.2. Jumping from BS-IV to BS-VI emission standards.

3.3. Introduction of CNG (Compressed Natural gas) engine, etc.

Thus, through ~~both~~ govt, international and citizens initiatives, pollution can be minimised and to achieve the

SDG-12 → Responsible production & consumption.

Q20. The evolving dynamic of geopolitics necessitates the indigenization of technology. Comment. Also, examine the recent developments in the field of indigenous defense technologies in India (15 marks/250 words)

Ans: →

India has been primarily an importing country in terms of defense technology and weapons. However, from couple of decades, India has been investing on research & development of indigenous technologies.

The evolving dynamic of geopolitics necessitating the ~~the~~ indigenization of technology

① Russia was the leading supplier of arms & ammunition to India.

- But due to USA's strict implementation

of CAATSA (Countering American Adversaries Through Sanctions Act), India has been diversifying its imports from other countries such as USA, France, Israel etc.

② After formation of alliance of I2U2 (India-Israel-USA-UAE) and Abraham Accords, India is showing interests in Israeli defence items.

③ Although, Russia is the primary exporter of India's defense needs.
eg. S-400 missile system of Russia
↑
brought by India.

Recent developments in the field of indigenous defense technologies in India :

① LCH - Prachand :

- India developed its own "Light Combat Helicopter" named Prachand.
- can fly at an altitude of 5000 metres.

② Agni - Prime missile :

- surface to air missile.
- Range = 5000 kms

③ Other defense missiles such as Agni, Vasun, etc.

④ Indigenous submarines like Vagir, etc.

⑤ Cyber defense technologies has been developed.

eg. Teccc (Indian Cyber-Crime coordination Centre).

CERT-In (Computer Emergency Response Team - India), etc.

Thus, India is becoming self-reliant on defense sectors. Atmanirbhar Bharat, Start-up India etc. has been the primarily guiding force behind the indigenization of defense equipments.

—————>—————