



## GENERAL STUDIES

Name of Candidate

Test Code

Schedule

Registration No.

Place

Time

Module

Classroom

Distance Learning

Classroom & Distance Learning

### EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

### INSTRUCTIONS:

1. Do furnish the appropriate details in the answer sheet (viz. Name, ID Number and Test Code)  
The Candidate should fill the index table, especially for him/her.
2. In the left margin, she/he should write only question number and in the right margin, nothing should be written.
3. The page number should be coded by the candidate himself and the range of page number related to the answer of the question should be used to complete the index table.
4. All Parts of the questions should be written at one place.
5. No Supplementary sheet shall be provided by the management. So the candidate is advised to accommodate required information within the space provided.
6. The candidate need not write anything in his/her answer that derogates the dignity of an individual or an organization.
7. The candidate should respect the instructions, given by the invigilator.
8. The Examinee has to submit the answer sheet to the invigilator after completion of examination.
9. However, he/she is allowed to take away the question paper.

### INDEX TABLE

Q.No.	Page No.	Maximum Marks	Marks Obtained
1.			
2.			
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6.			
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9.			

Total Marks Obtained

Remarks:

Signature of Examiner

Q.1.

Ans-

(d)

National waterways are navigable parts of rivers, (water present in most part of the year); canals, etc. which are used for transportation.

Major waterways of India are as follows:-

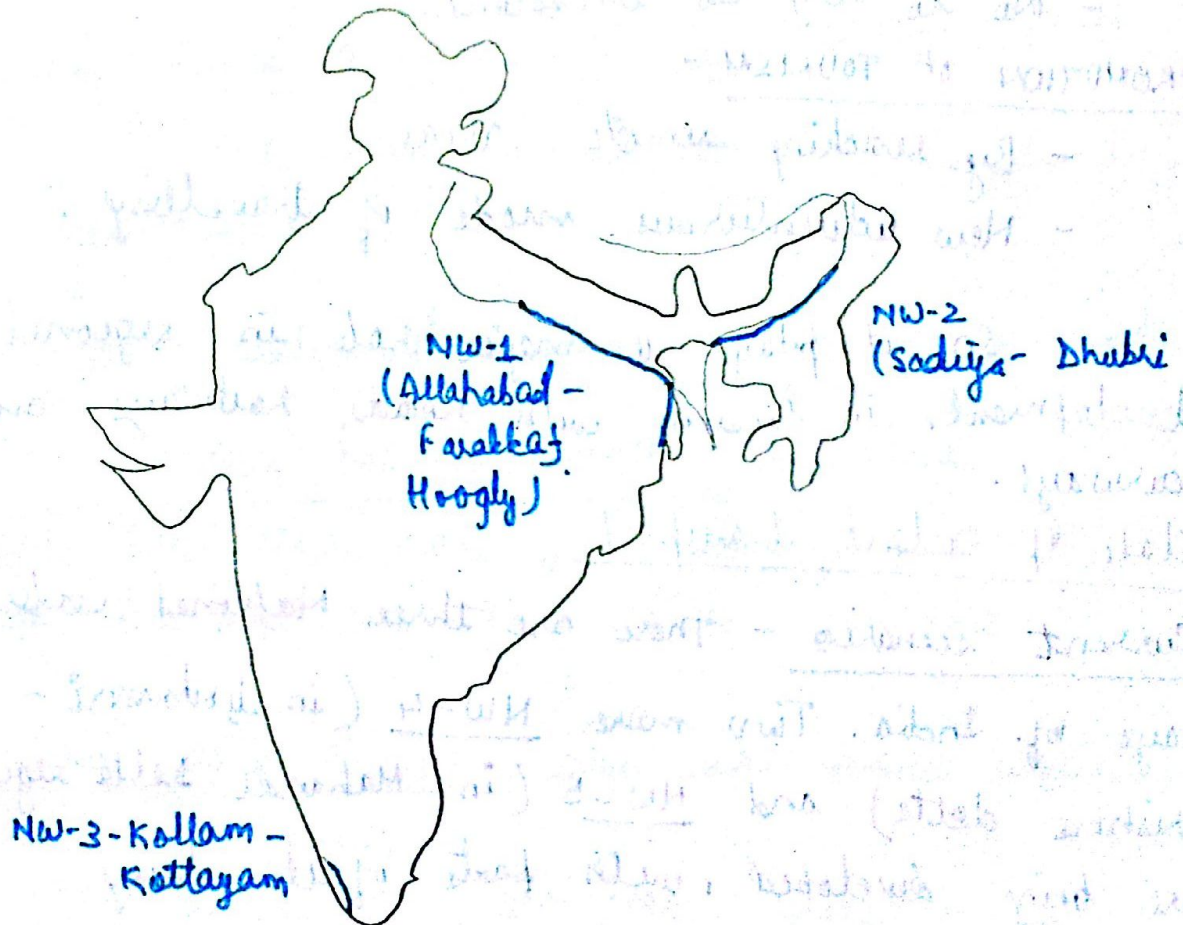


Fig: Major waterways of India.

Role played by waterways in regional development:

① ECONOMIC ROLE

- Carrying raw material and finished products
- Commotion of labour and work force
- Cheap means in the long run.
- Employment generation.
- Associated industrial development.

② SOCIAL ROLE - More people to people contact.

- Integration
- Reduction of regional imbalances.

③ POLITICAL ROLE -

- Freedom of movement is assisted.
- More exposure to people of different regions.

④ ENVIRONMENTAL ROLE -

- Environment friendly means.
- No to very-less emissions.

⑤ PROMOTION OF TOURISM -

- By reaching remote areas.
- New adventurous mode of travelling.

So, it plays a major role in regional development, in tandem with roads, railways and airways.

State of inland transport

Current scenario - There are three National waterways of India. Two more NW-4 (in Godavari - Krishna delta) and NW-5 (in Mahandi Delta region) are being developed, with parts of it being currently operational. There are also several canals (eg. Buckingham, Yamuna) which are also used for inland transportation.

Huge potential

There are huge gaps in utilisation of inland transport capacity in India, with many perennial and non-perennial river systems and canals in many parts. They have not been utilised fully because of certain challenges:

- ① Huge initial cost in buying boats and other safety equipment.
- ② Non-perennial nature of some rivers.
- ③ Siltation in courses, etc.
- ④ Pollution.
- ⑤ Floods

Steps taken by Government:

- ① National River Basin Authority (NRBA), is working towards removal of some of the barriers in this respect.
- ② Integrated watershed management programme and Command Area Development Program aims at keeping the rivers away from drying and make inland transport via them more sustainable.
- ③ National Water Mission, also talks about water recharge in rivers.
- ④ Flood Control Programme also makes navigation safe.
- ⑤ New navigation related projects are being launched by the Government.
- ⑥ Canal linking and inter-linking of rivers will also have a profound positive impact on inland transportation.

With many advantages of waterways over other means of transportation, and considering India's huge potential, there is a need to fully utilise this area, to assist in our development.

Q. 1.

Ans - (a)

DMIC project is Delhi-Mumbai Industrial Corridor Project. Under this project, being implemented by the government of India, transportation links (Western-Freight Corridor) and National Highways (8 and others) will be developed further, so that industries can be setup along them. Various facilities will be provided for assisting industrial growth along this 'corridor', like infrastructure loans, quicker clearance etc., in addition to taking advantage of Delhi, Mumbai and other major cities (Vadodra, Ahmedabad, etc.). Assistance by Japan is also being provided.

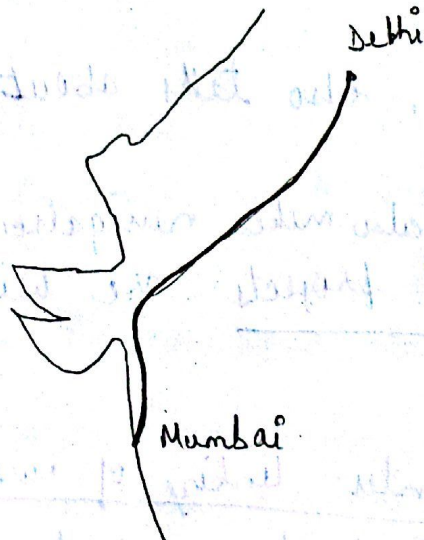


FIG: Showing Delhi - Mumbai Industrial Corridor.

## Key challenges:-

- ① slow rate of infrastructure development.
- ② Administrative challenges - red-tapism, land acquisition, etc.
- ③ Top-sided growth - It might lead to growth being concentrated in existing industrial centres.
- ④ The existing challenges of the regions it crosses - Rajasthan, Gujarat will also remain.
- ⑤ Availability of skilled manpower for industrial growth.
- ⑥ Raw material availability.
- ⑦ Extreme climatic factors in some areas (in Rajasthan)

## Potential of DMIC

- ① Employment generation
- ② Export potential will enhance.
- ③ Better income and standard of living to people.
- ④ Dedicated freights will ensure raw material supply.
- ⑤ Links with roads (National Highways) will also assist manufacturing centre growth.
- ⑥ Mumbai is also connected to the world via sea lanes, leading to further development.
- ⑦ Spare parts and other equipment can help in development of other related manufacturing sectors.

⑨ Low freight rates will make it more economical.

Thus, the DMIC project has huge potential in helping India achieve its target of enhancing contribution of Manufacturing sector to 25% within the next decade, given the challenges are taken care of.

Q.1.  
Ans -  
(c)

Environment Impact assessment (EIA) started in India in 1980s with assessment of major river valley projects. Later it got expanded, and now it covers all the major industrial activities and infrastructural development projects.

It involves, assessing, evaluating the environmental impact, that can be potentially caused by the project. It is conducted by Ministry of Environment and Forest. (MOEF).

### State of Reports

Recently, with threats of climate change hovering around and visible impacts of some of the projects, on environment, the awareness of people, media, etc. has enhanced. The role of EIA process is thus being questioned.

There have been many shortcomings being noted in such reports:

- ① Though given out for all projects, it has hardly rejected (recommended) any proposal in the past 2-3 decades.
- ② Such reports are merely becoming a formality with minor recommendations being given.



Holistic assessment or impact on society as a whole is inadequately addressed.

Many companies have been even accused of bribing officials conducting EIA.

Scientific base is not that robust.

Long-term challenges are ignored.

Economic ends are sought as a priority.

Also, in genuine cases, there have been cases of undue delay.

However considering their significance following steps may be helpful in improving the process:-

Separate Body - This is actively being considered by the government.

Clear guidelines -

Recruitment of experts and NGO members.

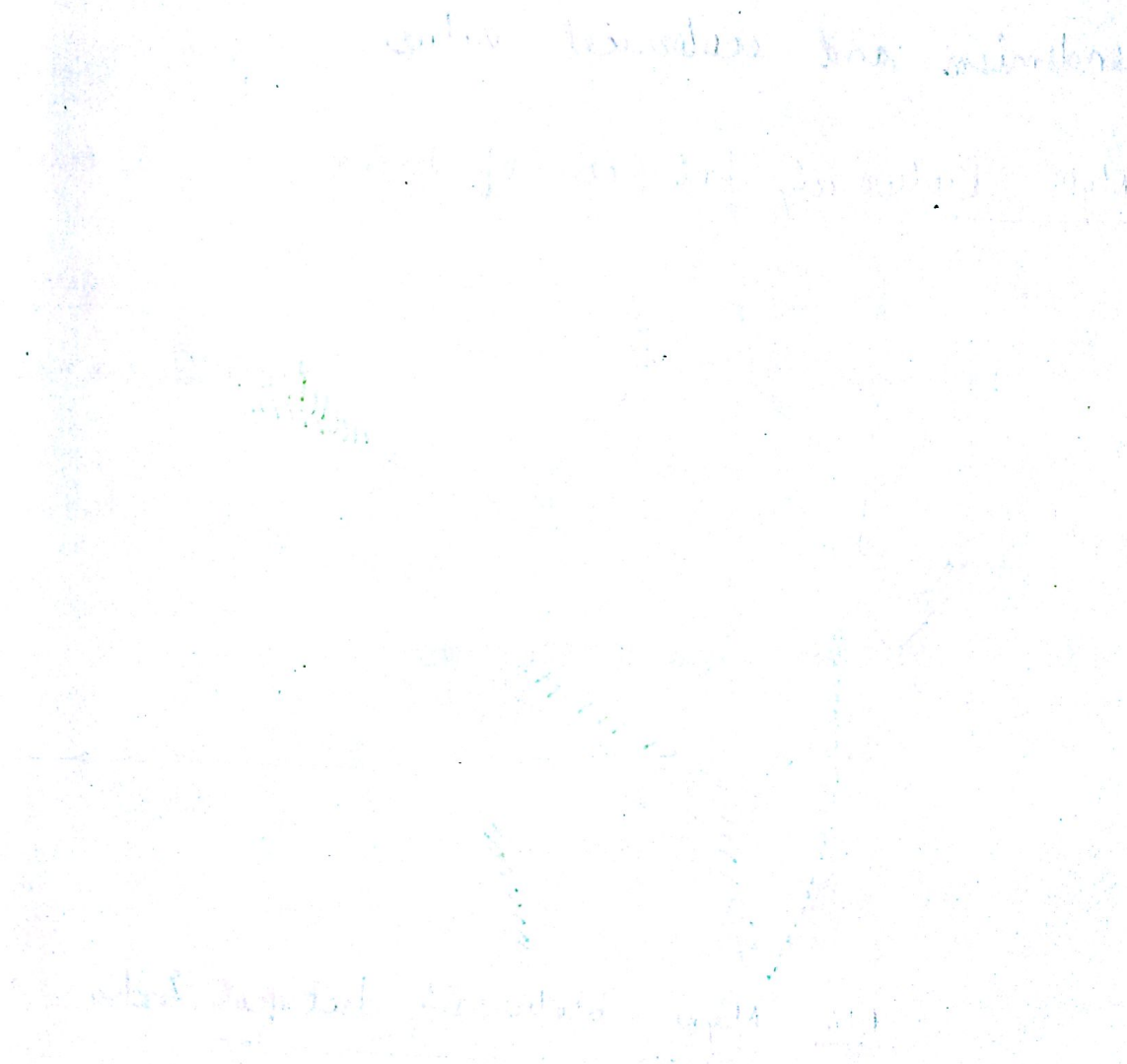
Better laws to allow tooth to such reports.

Stricter norms of environmental pollution to be screened for.

Promotion of green growth as a mandate.

Better rules to punish the companies flouting recommendations.

These steps with a holistic angle of protection of environment and society will help in making EIA process better:



1. Project Approval
2. EIA Study
3. Environmental Impact Assessment
4. Social Impact Assessment
5. EIA Report
6. Decision Making
7. Implementation

d. 4.

Ans. (b)

Biodiversity hotspots are geographical regions with very high floral - faunal diversity, endemism and ecological value.

Major Biodiversity hotspots of India

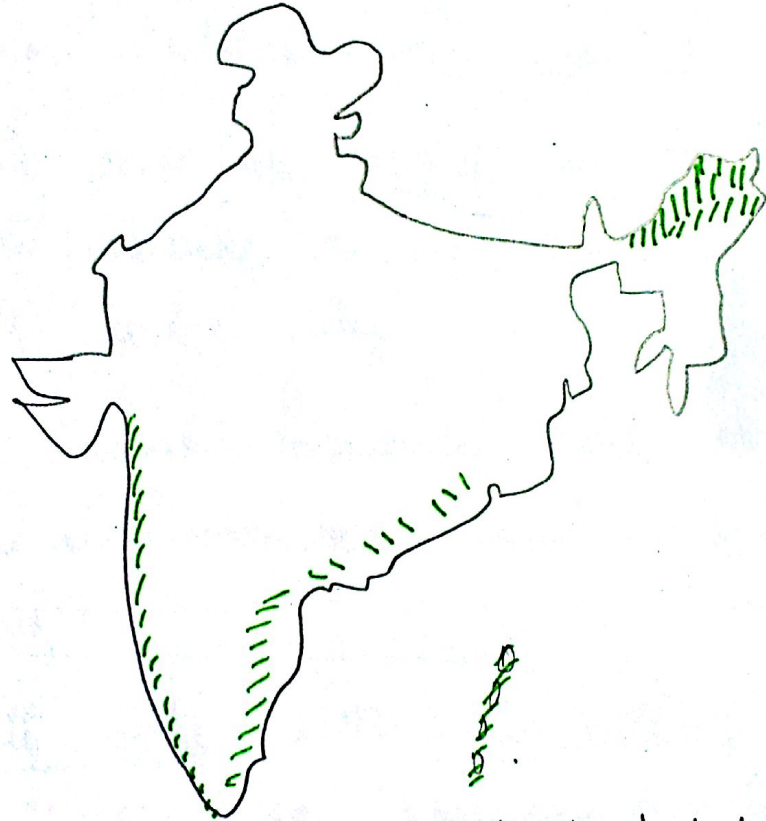


Fig: Major biodiversity hotspots: India

- ① Western Ghats - With heavy rainfalls, and high elevation, there are many endemic species, like Hornbills, Lion-tailed Macaques, etc.
- ② Eastern Himalayas - The location and rainfall pattern make it a biodiversity hotspot.

③ Eastern Ghats - Includes areas of average elevation but good forest cover and associated faunal diversity.

④ Island archipelago - Andaman and Nicobar islands have a number of important biological species.

Significance - They have a great role to play in maintaining ecological balance on earth.

Ans- (c)

Efforts to establish green governance:

- ① National Mission of Action Plan on Climate Change (NAMCC), launched in 2008, with 8 sub-missions covering various environmental aspects.
- ② Replacement of existing judicial body with National Green Tribunal to hear cases of environmental concern.
- ③ Revised Coastal Zone Regulations to protect coastal ecology.
- ④ International negotiations on adaptation and mitigation efforts.
- ⑤ Considering ban on plastic packets of further
- ⑥ Ban on plastic use by several states
- ⑦ E-waste management guidelines.
- ⑧ Shift from paper-work to e-governance
- ⑨ Focus on renewable energy
- ⑩ Investment in Research and Development in this area.

Ans -  
(d)

Rural tourism is a type of tourism in which tourists are made to experience the culture of rural areas. It includes staying at a rural dwellings, their food, etc.

### Potential for inclusive development

- ① growth spreading to remote and backward areas also.
- ② Rural economy will diversify.
- ③ Skill development of rural youth
- ④ Income generation, even in foreign currency by rural people.
- ⑤ More industries / services will get attracted to these areas.
- ⑥ Infrastructure development.

### Sustainable Development

- ① Eco-friendly, as rural way of living is followed, and not luxurious one.  
Ex - In a village near Panchmarhi (M.P.), tourists are enjoying rural tourism, by using basic amenities (solar lantern, etc.)
- ② Wastage of resources is minimised, as they mostly live in rural households.
- ③ Since it helps rural India, government will remain supportive and thus development being sustainable.

Ans- (f)

Islands of India include :-

① Lakshadweep islands.

② Andaman and Nicobar archipelago

IMPLICATIONS :

① Economic

- Huge raw materials reserves - timber, etc.
- Agriculture - Plantation agriculture.
- Aquaculture potential.
- Ports - income by international shipments.

② Cultural

- Great tribal / ethnic diversity.
- Tribes include Shompens, Onges, etc.
- Unique language, traditions, different from mainland.

③ Ecological

- Great floral and faunal diversity.
- Coral islands enhancing marine biodiversity.

④ Strategic

- Check Chinese 'String of Pearls' strategy.
- Defense bases.
- Naval strength - added to.
- Link with south - East Asian countries.

Conclusion -

Here, islands of India have a huge, holistic advantage to India's development.

Ans-  
9)

Environmental concerns have played a role in reshaping India's relations with its neighbours as well as other countries.

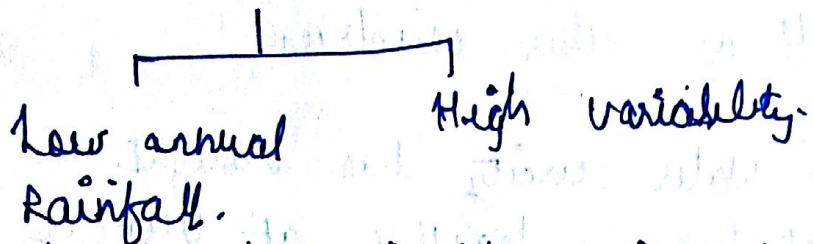
- ① China - Water scarcity has brought in conflicts and negotiations; together at UNFCCC talks.
- ② Nepal - Together, working on Himalayan ecology, considering water treaties, etc. Has both advantages and disadvantages to India.
- ③ Bhutan - Focus on renewable energy, further strengthening India's-Bhutan ties (Hydro-electricity supply).
- ④ Bangladesh - River water disputes being discussed and resolved, to maintain good relations. Coastal area submergence common to both - hence working together.
- ⑤ Myanmar - Primarily, water sharing concerns, with climate change impacts of drought and floods.
- ⑥ Sri Lanka - Being a vulnerable country to submergence, India assuring of its support.
- ⑦ Pakistan - Floods (one of the impacts of climate change) affected agriculture in Pakistan, India rendered help. But fears of water scarcity leading to tensions.

Conclusion - Even at international level, BRIC, BASIC as groups have become more prominent on global scene, advocating strong actions on climate change.



Ans- (b)

Dryland agriculture is one which is practiced in areas of :



Areas: Parts of Rajasthan, Gujarat, Dardkanya, Rain-shadow areas.  
Potential for future of Indian Agriculture.

- ① Vast area - about 90 million Ha ; if brought into cultivation, will lead to high productivity.
- ② Specialised crops - crops like Ragi, Jowar, Bajra, called coarse grains will generate nutritional value.
- ③ New means of irrigation - with growth of sprinkler, micro-irrigation, agriculturists' contribution to GDP will increase.
- ④ Soil and water management - with crops present, soil erosion and moisture loss prevented.
- ⑤ Better investment capacity of farmers - income increase will help them buy equipment (Agricultural)
- ⑥ Growth in R+D - has led to drought resistant crops.
- ⑦ Allied sector growth - like livestock can also be done.

Hence, Government is taking various measures to develop dryland agriculture for ensuring inclusive development.

Ans.  
(k)

Urban forestry means development and conservation of forest land in urban areas.

AIM - Better environmental conditions in polluted, congested urban centres.

PRINCIPLE - Develop forest area keeping in mind specific urban conditions and needs.

APPROACH - Involve community and specialists/experts  
- Crops suiting urban aesthetics and climate to be chosen.

Scientific Methods: Suggestions :-

- ① Tree selection - should be such, that grow at a rapid rate and does not need much care.
- ② Water recharge capacity - It should be such, that can help seep more water, needed especially in concrete and floors.
- ③ Green lush trees - which can enhance aesthetics and climate of the centre.
- ④ Capable to grow at higher temperatures - because of urban heat islands due to concrete constructions.
- ⑤ Rain water harvesting - can be clubbed with growth of such forests.
- ⑥ Area selection - should include areas near hospitals, educational institutions, residential area near markets, industries.

Thus, they can help in providing better living environment to rapidly growing urban population.

Ans. (i)

e-waste is short for electronic-waste, which includes electronic equipment rendered waste due to dysfunctional state of the equipment or obsolescence.

Scenario - growing at a fast pace with growing penetration of media and better income levels. Also, fast growth of IT equipment.

Efforts by India

- ① Awareness - about the issue and harmful effects being done by NCDs, government, etc.
- ② Regulations - to allow and monitor exchange of e-waste by companies.
- ③ Corporate Social Responsibility - companies are making this a part of their CSR activities.
- ④ International consortiums - India is active on various forums, on e-waste.
- ⑤ Replacement norms - making it compulsory for certain products to be exchanged by companies.
- ⑥ Reg-picking - they are also being sensitised and empowered to get them exchanged at manufacturing centres.

E-waste is a growing concern and more effective measures need to be taken.

Ans-  
(j)

Dead water zones are areas in a water body which are incapable of supporting life due to various reasons.

Causes -

- ① Water pollution.
- ② Oil spillage.
- ③ Eutrophication.
- ④ High biological oxygen demand.
- ⑤ Heavy sewage load.
- ⑥ Industrial effluents.

Strategy to prevent its formation - At various levels:

- ① Awareness - among peoples, so that can monitor and assist.
- ② Legislative - Stricter law, punishments to polluting agencies. Specific law regarding this.
- ③ Administrative - Better implementation of laws and giving punishments.
- ④ EIA - in a comprehensive way.
- ⑤ Protected areas - to be declared around water bodies (vulnerable).
- ⑥ Restricted tourism.
- ⑦ Norms against effluent flow.
- ⑧ Research and development.

Ans. (i)

Green chemistry is a dynamic concept with two interpretations :-

- ① Developing chemicals for industrial and other uses, which are more eco-friendly.
- ② Using chemistry to develop chemicals which can help in removing harmful substances from environment.

Role in sustainable environment creation

- ① Better disposal of pollutants.
- ② Lesser emissions.
- ③ More biodegradability.
- ④ Higher capacity to reconcile with nature.
- ⑤ Provide better manufacturing processes.
- ⑥ Treat effluents in a better way.

Green Chemistry thus offers a great avenue for sustainable environment and development.

The three major methods of irrigation in India are:-

- ① CANALS - Mainly in the Northern plains, due to high river density. Also in Krishna - Godavari delta region, Brahmaputra plains etc.
- ② WELLS - mainly in - central India, water seepage is more.
- ③ TANKS - In areas where digging well is not possible and seepage is low (Deccan Plateau).

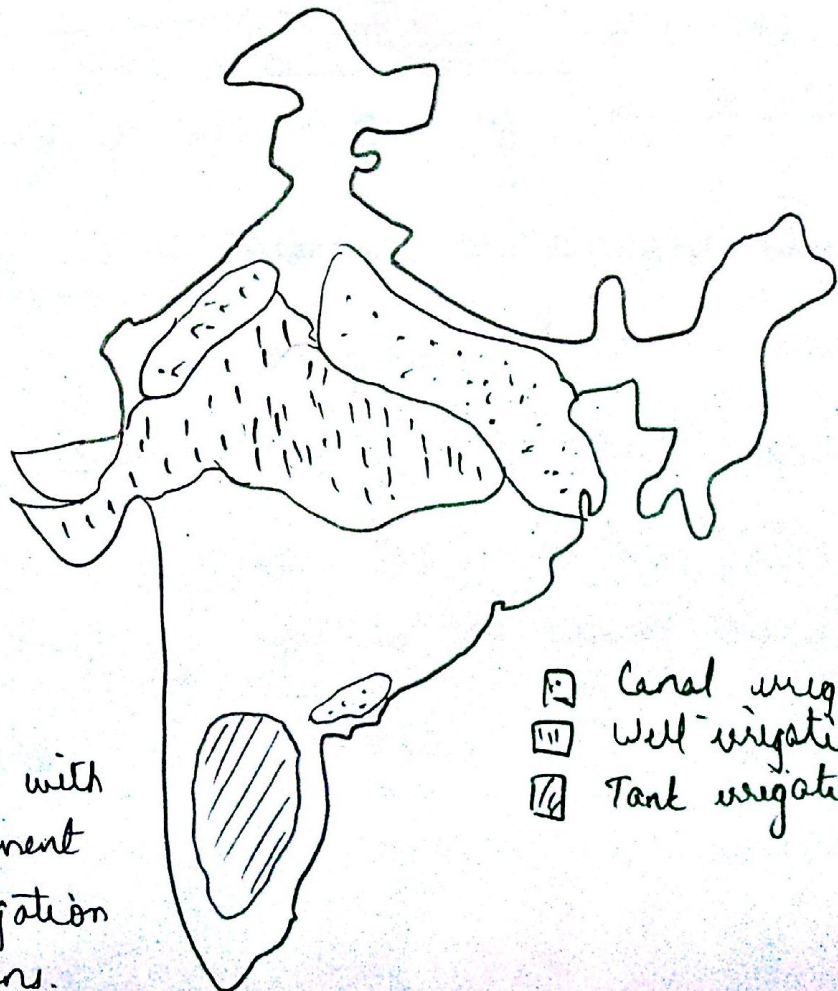


FIG: Areas with prominent irrigation means.

- ☐ Canal irrigation
- ☐ Well irrigation
- ☐ Tank irrigation.

Government initiatives :

Major programs -

Accelerated Irrigation Benefit Program (AIBP)

to complete pending projects -

Integrated Watershed Management Program

Development of canals.

Subsidy for wells in rural areas.

Afforestation .

Research for new efficient means - like

micro-irrigation -

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Ans.  
(c)

## Prospects of Alternative means of energy in

India:

- ① Tidal energy - Its development has started, and with a long coastline (~7000 km), its potential is huge.  
Ex. - Kankrej (Gujarat); Vadhvanam (Tamil Nadu).
- ② Wave energy - Again, due to a long coastal area; its very significant in energy mix.
- ③ Biomass energy - Rural areas are especially significant in this respect (more agricultural waste and livestock).
- ④ Wind - Growth is picking up. Largest wind farm in Gujarat - Lamba. Also, Indore, Kanyakumari.
- ⑤ Solar - Thrust by National Solar Mission to produce about 20,000 MW by next decade.
- ⑥ Ocean Thermal - Research is on and technology is still in nascent phase. Immense potential.
- ⑦ Nuclear - Many operational, but dependence on other countries for Uranium. Thorium based technology will be of great significance since India holds world's 30% of Thorium reserves.



Thus, India has immense potential for development of a variety of alternate sources of energy, thus generating a better energy mix, with less import dependence.

Ans-  
(d)

In addition to various other challenges, Indian agriculture faces environmental challenges as well, which include :-

- ① Salinisation of soil.
- ② Low water retention capacity of soils.
- ③ Climate change.
- ④ Increasing variability of rainfall.
- ⑤ Declining water table.
- ⑥ Genetically modified crops.
- ⑦ Mono-cropping.
- ⑧ Decreasing biodiversity.
- ⑨ Acid rains.
- ⑩ Air pollution.
- ⑪ Soil erosion.
- ⑫ Contaminated water.

Issues -

- ① Diversity of problems.
- ② Regional variation of agricultural problems (environmental).
- ③ Heavy dependence on agriculture for employment.
- ④ Urbanisation.
- ⑤ Industrialisation.

Implications

- ① Economic - less income, less raw material for industries, food security, famines.

- ② STRATEGIC - growing dependence of other countries for food resources.
- ③ Social - scarcity of agricultural yield will lead to social tensions; suicides by farmers.
- ④ Agromineral - low productivity and capacity of soil.
- ⑤ Political - can lead to clashes and instability.

These need to be tackled in order to ensure the 'right to food' for all.

Ans -  
(9)

Mountain passes are low elevation areas within mountain ranges, which allow passage in otherwise difficult terrain.

### Passes in India

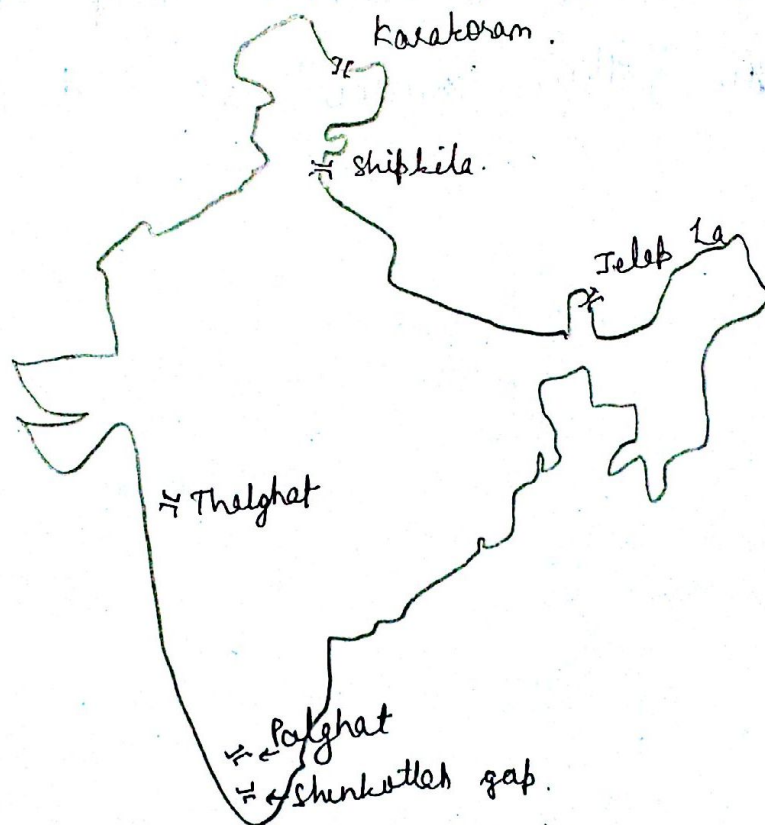


Fig. Some passes of India

### Economic significance

- ① For Cross-border trade - eg. - Karakoram Pass, Niti La, Mana La, Zaskar La, etc.
- ② Growth of Markets - eg. in Jammu and Kashmir.
- ③ Employment generation.
- ④ Transport of Raw material.

Development of difficult-terrain areas.

Link important cities - eg. Thalghat

between Mumbai and Pune.

Monsoon winds pass - good for agriculture

eg. Palghat allow rainfall in parts of  
Tamil Nadu, thus agricultural development.

Q.5

Ans- (h)

Dieselisation - Means focus on diesel driven motor by the private vehicle owners.

Reasons -

- ① Less cost as compared to petrol.
- ② Development of good auto-engines.
- ③ High mileage.

Implications -

- ① Heavy pollution.
- ② Disincentive to promote green vehicles.

(a) Project AICOP TAX - It is a project being conducted by the Ministry of Environment and forests. It includes taxonomical classification of various existing and newly identified organisms.

Significance - It will help in better dissemination of knowledge and research in biological sciences.

(b) Census of Marine life was recently conducted as an international collaboration.

Significance -

- ① Identification of Marine - biological hotspots.
- ② Enhance conservation efforts.
- ③ Discovery of new species.

- ④ Evolution of life - studies -
- ⑤ Identification of vulnerable areas.
- ⑥ Declaration of protected zones.

(d) Draft National Water Policy was recently released. Currently National water Policy of 2002 is under operation. Key features:

- ① Water identified as - economic resource.
- ② Development of multipurpose projects. (dams)
- ③ Pollution control.
- ④ Water - harvesting - importance.
- ⑤ A new informatives centre.
- ⑥ Irrigation
- ⑦ New legislation to resolve inter - state water disputes.

(e) When an exotic species is introduced in an ecosystem, it affects native system in following ways:

- ① Resource competition (water, energy)
- ② Toxic / Predative effects.
- ③ Affecting symbiotic species.
- ④ Polluting food resources / water bodies.
- ⑤ Competition for space.

(c) Artificial leaf has recently been developed by researchers. It carries out photosynthesis just like plants do. It is done by an artificial system.

Energy crisis - The artificial leaf has the capacity to harness solar energy and potential to solve energy crisis.



Q.6.

Ans.

(a)

ECBC is a set of guidelines to be followed while constructing new buildings, to so that minimum damage is caused to environment and it is energy efficient.

(g)

BIOME - It is the second largest ecosystem possible after biosphere. It includes an area with similarity of living and non-living things.

Example - Desert biome, Tundra biome.

(f)

Ecological footprint is a measure of the impact, various human activities (economic activity, burning fossil fuels, construction, etc) has on the ecology - the living organisms and their abiotic resources.

(e) Ecotone - It is a transition area between two ecosystems. Characteristics:

- ① More diversity.
- ② More vulnerability.
- ③ Limited expanse.
- ④ Characteristics of both ecosystems.

Example - Area of transition between Desert and Savannah.

(c) Aichi Targets - were set at Nagoya Protocol meet on Conservation of biological diversity. Main points:

- ① Access
- ② Benefit sharing.
- ③ Enhanced conservation measures.
- ④ Targets in terms of percentage.

(d) SEED Initiative:

- ① Development of good quality seeds.
- ② No use of genetic modification.
- ③ Maintenance of seed bank.
- ④ Providing seeds to farmers at affordable rates.

(b) CAMPA is a Compensatory Afforestation scheme by the government of India, being implemented by Ministry of Environment and Forests. In this, when forest land is diverted for any other use, afforestation is done elsewhere as a way of 'compensating' for the environmental damage.

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Q. 3.

Ans. b,

Major recommendations of Gadgil committee on Western Ghats :

- ① Stricter implementation of environmental norms.
- ② Declaration as ecologically sensitive area.
- ③ Declare world / natural heritage site.
- ④ Regulate mining activities.
- ⑤ Dedicated organisation to tackle environmental issue in the region.
- ⑥ Sustainable development.

D.3.

Ans - (a)

Durban conference, win of European diplomacy - can be exemplified by following examples:-

- ① Taking AOSIS on their side.
- ② No concrete mechanisms for finance.
- ③ No commitments about emissions.
- ④ No legally binding target decided.
- ⑤ Got other countries to give voluntary targets.
- ⑥ No final word on technology transfer.

Ans-(d) Issues at COP 11 of CBD in 2012

- ① Strong commitments to be made for conservation
- ② Access to biodiversity for various uses will remain debatable.
- ③ Benefit sharing with ~~be~~ by the use of biological material, will not be given full support by developed countries.
- ④ Diverse interests of countries.
- ⑤ Climate change - further aggravating the biodiversity loss and need for a quick consensus.