

## **UNIT-2 — GEOGRAPHY**

### **INDIA — RESOURCES AND THEIR DEVELOPMENT**

- Chapter 1 : Resources and Development
- Chapter 2 : Forest and Wildlife Resources
- Chapter 3 : Water Resources
- Chapter 4 : Agriculture

# 1 RESOURCES AND DEVELOPMENT

## CONCEPT

- **Resource** : Natural endowments in the form of land, water, vegetation and minerals are called natural resources. Resources are materials which can be transformed in such a way that they become more valuable and useful for fulfilling human needs.
- **Types of Resources** : Resources are classified into various categories such as natural and human-made, renewable and non-renewable, individual, community, national and international resources.
- **Natural and Human-Made or Man-Made Resources** : Natural resources include land, soil, water, vegetation, wildlife, minerals and power resources. Resources created by humans are called human-made resources like engineering, technology, machines, buildings, monuments, paintings and social institutions.
- **Biotic and Abiotic Resources** : Resources obtained from the biosphere like forests, wildlife, fisheries, livestock, human beings, etc., which have life, are called biotic resources. Resources which are obtained from non-living things are called abiotic resources. Iron, copper, gold and lead are abiotic resources.
- **Human Resources** : These resources are made up of the human beings living in the world. They are the most important resource of a nation.
- **Renewable and Non-Renewable Resources** : Some resources have the ability to renew themselves in a given period of time. Plants and animals have the ability to regenerate. Minerals are non-renewable resources. They cannot be remade. Some of the important renewable resources are water, forests, solar, wind and tidal energy.
- **Resource Development** : Some natural resources cannot be used directly. While using the natural resources, we must keep in mind the nature, type and the size of the resources. Ocean water, solar energy, wind energy and climate are inexhaustible resources. Iron, tin, copper, gold and silver are exhaustible but reusable resources. We must reuse and recycle the resources.
- **Resource Planning** : This is a technique or skill of proper utilisation of resources. Resource planning consists of three stages —
  - Preparation of inventory of resources** — This stage includes surveying, mapping and measurement of characteristics and properties of resources.
  - Evaluation in terms of availability for development** — This stage includes the examination of resources from the point of view of technology, economy and need.
  - Planning of exploitation of resources** — This stage is related with systematic planning which emphasises on the use and reuse of the resources. Resource planning helps to reduce wastage and keeps the environment pollution free.
  - Conservation of resources** — The management of resources by the humans is known as conservation. It is the judicious and planned use of the natural resources.
- **Land resources** — India has a variety of relief features like mountains, plateaus and plains. 43% of the country is covered by plains and they provide cultivable land for growing crops. 30% of the country is covered by mountains and they provide natural resources like forests

and wildlife. 27% of the country is covered by plateaus which contain mineral resources, forests and some arable land.

- Total area of India is 3.28 million square kilometres. 44% of the total land area of India is the net sown area. 22% is covered by forests, 4% is cultivable waste, 11% is fallow land, 4% are permanent pastures, 14% land is not available for cultivation and 1% is covered by miscellaneous tree crops.
- The land use pattern in India is determined by both physical factors such as topography, climate, soil types as well as human factors such as population density, technological capability, and culture and traditions etc.
- The degradation of natural vegetation is caused by overgrazing by animals, deforestation, careless management of forests and degradation of land. At present, about 130 million hectares of degraded land exists in India.
- **Soil** : The uppermost layer of the earth's crust, which is loose, fragmented and useful for plants is called soil.
- **Soil Formation** : The factors that contribute to the formation and fertility of the soil are parent rocks, climate, plant, animal and local topography. The soils are made out of rocks. The rocks disintegrate and decompose under the processes of weathering and erosion.
- **Soil Types** : The soils of India are classified into the following types —  
1 Alluvial Soil 2 Black Soil 3 Red Soil 4 Laterite Soil 5 Mountain Soil 6 Desert Soil.
- **Alluvial Soil** : It is of two types — *khadar* and *bangar*. It is found mainly in the Northern Plains and Coastal Strips of the Eastern Coast.
- **Black Soil** : It is derived from the Deccan Traps. It occurs in areas like Maharashtra, Western Madhya Pradesh and Gujarat. It is known for the cultivation of cotton.
- **Red Soil** : It is formed in areas of igneous and metamorphic rocks. It is found in parts of Tamil Nadu, Karnataka, Andhra Pradesh, Orissa and Jharkhand.
- **Laterite Soil** : It is the intensively leached soil of the monsoon climate. It is found in the hills of the Deccan, Karnataka, Kerala, Orissa and parts of Assam and Meghalaya.
- **Mountain Soil** : It is characterised by the deposition of organic materials derived from the vegetative cover. It is found in Meghalaya, Arunachal Pradesh, Eastern ranges, Uttarakhand, Himachal Pradesh and Jammu and Kashmir.
- **Desert Soil** : It is found in the arid areas of Rajasthan, Punjab and Haryana.
- **Soil Erosion** : The removal of soil from one place to another by some natural agent is called soil erosion. Conservation of lands and plantation of trees are the methods adopted to reduce soil erosion.

## I. SUMMATIVE ASSESSMENT

### A. NCERT TEXTBOOK QUESTIONS

#### Questions in the Exercise

Q.1. Choose the right answer from the four alternatives given below :

(i) Which of the following types of resource is iron-ore?

(a) Renewable

(b) Biotic

(c) Flow

(d) Non-renewable

Ans. (d) Non-renewable

(ii) Under which of the following types of resource can tidal energy be put?

- (a) Replenishable (b) Human-made (c) Abiotic (d) Non-recyclable

Ans. (a) Replenishable

(iii) Which one of the following is the main cause of land degradation in Punjab?

- (a) Intensive cultivation (b) Deforestation (c) Over-irrigation (d) Overgrazing

Ans. (c) Over-irrigation

(iv) Which of the following types of soil is found in the river deltas of the Eastern Coast?

- (a) Black soil (b) Laterite soil (c) Red soil (d) Alluvial soil

Ans. (d) Alluvial soil

(v) In which one of the following states is terrace cultivation practised?

- (a) Punjab (b) Plains of Uttar Pradesh  
(c) Haryana (d) Uttarakhand

Ans. (d) Uttarakhand

**Q.2. Answer the following questions briefly.**

(i) Which soil is ideal for growing cotton?

Ans. Black soil is ideal for growing cotton and so it is also known as black cotton soil.

(ii) Name three states having black soil.

Ans. Maharashtra, Gujarat and Madhya Pradesh are three states having black soil.

**Q.3. What are biotic and abiotic resources, Give some examples.**

OR

**Classify resources on the basis of origin. Explain them in brief along with examples.**

Ans. On the basis of origin, resources can be classified into biotic and abiotic resources.

Biotic resources are substances obtained from living beings. They include flora, i.e., vegetation, fauna, i.e., birds, fishes, domestic and wild life as well as human beings. Everything within the biosphere, which has some utility for man, is a biotic resource.

Abiotic resources are composed of non-living substances. They include air, water, land or soil, rocks and minerals in the earth's crust. They occur as solid, liquid or gaseous materials on the earth and its atmosphere.

**Q.4. Explain the land use pattern of India and why has land under forest not increased much since 1960–61. What is the impact of the decrease of land under permanent pastures?**

Ans. The total geographical area of India is 3.28 million sq. km. Land use data are available for only 93 per cent of the total area because land use reporting for most of the north-eastern states except Assam have not been fully done and the areas of Jammu and Kashmir under occupation of our neighbouring countries could not be surveyed. The present land use pattern shows :

- (i) Forests – 22.57 percent much below the desired 33 percent as outlined in the National Forest Policy of 1952.  
(ii) Land not available for cultivation  
(a) Barren and wasteland – 6.29 percent  
(b) Land put to non-agricultural uses, e.g., buildings, roads, factories, etc. 7.92 percent of total area

- (iii) Other uncultivated land (excluding fallow land)
  - (a) Permanent pastures and grazing land has decreased to 3.45 percent.
  - (b) Area under miscellaneous tree crops, groves (not included in net sown area) 1.10 percent
  - (c) Culturable wasteland (left uncultivated for more than five agricultural years) 4.41 percent
- (iv) Fallow lands.
  - (a) Current fallows (left without cultivation for one or less than one agricultural year) 7.03 percent
  - (b) Other than current fallow 3.82 percent
- (v) Net Sown Area 43.41 percent but the pattern varies greatly from state to state.
 

The land under forest has not increased since 1960–61 because in the post-independence era demand for more land to expand agriculture, mainly after Green Revolution, developmental works and infrastructural facilities, led to clearance of forests areas. Industrialisation and urbanisation also decreased the forest area. Afforestation due to the concern of ecological balance led to marginal expansion from 18.11 per cent in 1960–61 to 22.57 percent in 2002–03 but it is much below the desired 33 percent of geographical area as outlined in the National Forest Policy.

The decrease of land under permanent pastures have grave impact. If grazing or pasture lands decrease, rearing of animals and livestock becomes difficult as there is less grazing land to feed the animals. This affects progress in livestock rearing and brings down production of the animal husbandry sector. It also decreases alternative sources of income for the farmers.

**Q.5. Suggest measures of soil conservation in hilly and mountainous areas.**

**Ans.** In hilly and mountainous areas the following measures can control soil erosion and help in soil conservation.

Contour ploughing or ploughing along the contour lines of a highland can decelerate the flow of water down the slopes.

Terrace cultivation or cutting of steps around the slopes to provide land for agriculture also checks downhill flow of water and controls soil erosion, e.g., as in Western and Central Himalayan region.

Afforestation or planting of trees in the hilly regions can help in soil conservation.

**Q.6. How have technical and economic development led to more consumption of resources?**

**Ans.** Technical and economic development involves more utilisation and exploitation of resources for the purpose of present development. According to Gandhiji, the greedy and selfish individuals and exploitative nature of modern technology are the root cause for resource depletion at global level. The history of colonisation reveals that it was primarily the higher level of technological development of the colonising countries that helped them to exploit resources of other regions and establish their supremacy over the colonies.

Economic development takes place through more and proper utilisation of available resources for the purpose of advancement of present generation. Technical development makes the resources accessible and usable and aids in further exploitation as well as creation of new resources. As a whole, more and more of the natural endowments are put to use.



**Q.5. Which of the following resource is non-recyclable?**

- (a) Coal                      (b) Iron-ore                      (c) Copper                      (d) Gold

**Ans.** (a)

**Q.6. On the basis of ownership, plantations can be better considered as which of the following types of resources?**

- (a) Individual resource                      (b) Community owned resource  
(c) National resource                      (d) International resource

**Ans.** (a)

**Q.7. The oceanic resources beyond 200 km of the Exclusive Economic Zone can be termed as which of the following types of resource ?**

- (a) Individual resources                      (b) Community owned resources  
(c) National resources                      (d) International resources

**Ans.** (d)

**Q.8. What is the main reason behind global ecological crises such as global warming and environmental pollution ?**

- (a) Depletion of resources                      (b) Accumulation of resources in a few hands  
(c) Indiscriminate exploitation of resources                      (d) Use of resources

**Ans.** (c)

**Q.9. What is necessary for sustained quality of life and global peace?**

- (a) Stopping use of resources                      (b) Saving resources for future  
(c) Exploitation of resources                      (d) Equitable distribution of resources

**Ans.** (d)

**Q.10. From which Five Year Plan has India made concerted efforts for achieving the goals of resource planning ?**

- (a) First Five Year Plan                      (b) Fifth Five Year Plan  
(c) Annual Plans                      (d) Tenth Five Year Plan

**Ans.** (a)

**Q.11. Which of the following is the root cause for resource depletion at global level, according to Gandhiji?**

- (a) Conservation of resources  
(b) Use of resources  
(c) Greedy and selfish individuals and exploitative nature of modern technology.  
(d) Backward technology.

**Ans.** (c)

**Q.12. What was the main contribution of the Brundtland Commission Report, 1987?**

- (a) Sustainable development as means for resource conservation  
(b) Advocated resource conservation for the first time  
(c) Presented Gandhian philosophy  
(d) All the above

**Ans.** (a)

**Q.13. Which of the following regions in India possesses rich reserves of minerals and fossil fuels?**

- (a) Plains (b) Mountains (c) Plateaus (d) Deserts

**Ans. (c)**

**Q.14. What is area sown more than once in an agriculture year plus net sown area known as?**

- (a) Permanent pastures (b) Fallow lands  
(c) Net sown area (d) Gross cropped area

**Ans. (d)**

**Q.15. What is land used for grazing cattle and livestock known as?**

- (a) Forests (b) Barren land (c) Pasture land (d) Fallow land

**Ans. (c)**

**Q.16. What percentage of India's geographical area is under forest?**

- (a) 23 per cent (b) 33 per cent (c) 54 per cent (d) 30 per cent

**Ans. (a)**

**Q.17. Which one of the following is the main cause of land degradation in states like Jharkhand, Chhattisgarh, Madhya Pradesh and Orissa?**

- (a) Deforestation due to mining (b) Overgrazing  
(c) Over-irrigation (d) Industrial waste

**Ans. (a)**

**Q.18. What is plantation of trees on a large scale to check soil erosion termed as?**

- (a) Afforestation (b) Plantation agriculture  
(c) Terrace cultivation (d) Shelter belts

**Ans. (a)**

**Q.19. What is arrangement of soil in different layers or horizons known as?**

- (a) Soil Composition (b) Soil Erosion (c) Soil Profile (d) Soil Texture

**Ans. (c)**

**Q.20. Black soil is also known by which of the following names?**

- (a) Bangar (b) Khadar (c) Regur (d) Laterite

**Ans. (c)**

**Q.21. Which of the following is the parent rock for black soil?**

- (a) Granite (b) Kankar (c) Basalt (d) Sand

**Ans. (c)**

### PREVIOUS YEARS' QUESTIONS

**Q.1. Which among the following is a type of resources classified on the basis of exhaustibility?**

[2010 (T-1)]

- (a) Biotic and abiotic (b) Renewable and non-renewable  
(c) National and individual (d) Potential and reserves

**Ans. (b)**

**Q.2. Which one of the following soil is ideal for growing cotton?**

[2010, 2011 (T-1)]

- (a) Regur Soil (b) Laterite Soil  
(c) Desert Soil (d) Mountainous Soil

Ans. (a)

**Q.3. How much desired area is required for forest in our country? [2010 (T-1)]**

- (a) 16% (b) 20%  
(c) 23.2% (d) 33%

Ans. (d)

**Q.4. In which of the following states is overgrazing responsible for land degradation?**

[2010, 2011 (T-1)]

- (a) Jharkhand and Orissa (b) Madhya Pradesh and Rajasthan  
(c) Punjab and Haryana (d) Kerala and Tamil Nadu

Ans. (b)

**Q.5. Which of the following method will not help in soil conservation? [2010, 2011 (T-1)]**

- (a) Contour ploughing (b) Strip cropping  
(c) Creating shelter belts (d) Ploughing up and down the slopes

Ans. (d)

**Q.6. Resources which are surveyed and their quantity and quality have been determined for utilisation are known as : [2010, 2011 (T-1)]**

- (a) Potential resources (b) Developed resources  
(c) Stock (d) Reserves

Ans. (d)

**Q.7. 'Laterite' has been derived from the Greek word 'later' which means: [2010, 2011 (T-1)]**

- (a) Mountain (b) Brick (c) Rock (d) Stone

Ans. (b)

**Q.8. When running water cuts through clayey soils and makes deep channels, they lead to : [2010 (T-1)]**

- (a) Gully erosion (b) Sheet erosion  
(c) Deforestation (d) Afforestation

Ans. (a)

**Q.9. How can the resources be classified on the basis of their origin? [2010, 2011 (T-1)]**

- (a) Biotic and Abiotic (b) Renewable and Non-renewable  
(c) Individual and Community (d) Potential and Reserves

Ans. (a)

**Q.10. Which one of the following is not an Abiotic Resource? [2010, 2011 (T-1)]**

- (a) Metals (b) Rocks  
(c) Machines (d) Horses

Ans. (d)

**Q.11. Which one of the following is a Biotic Resource? [2010 (T-1)]**

- (a) Land (b) Water (c) Human beings (d) Rocks

**Ans. (c)**

**Q.12. Which one of the following is not the community owned resource? [2010 (T-1)]**

- (a) Grazing grounds (b) Burial grounds  
(c) Village ponds (d) Privately owned house

**Ans. (d)**

**Q.13. There is enough for everybody's need and not for any body's greed," who among the following has given the above statement? [2010, 2011 (T-1)]**

- (a) Vinoba Bhave (b) Mahatma Gandhi  
(c) Jawaharlal Nehru (d) Atal Behari Vajpayee

**Ans. (b)**

**Q.14. Which one of the following states mostly has laterite soil? [2010, 2011 (T-1)]**

- (a) Uttar Pradesh (b) Bihar  
(c) Rajasthan (d) Meghalaya

**Ans. (d)**

**Q.15. Which one of the following is an example of biotic resources? [2010, 2011 (T-1)]**

- (a) Rock (b) Iron ore  
(c) Gold (d) Animal

**Ans. (d)**

**Q.16. What is the percentage share of plains in the total land area ? [2010 (T-1)]**

- (a) 43% (b) 27% (c) 33% (d) 27%

**Ans. (a)**

**Q.17. The mountain share in the total land area is : [2010 (T-1)]**

- (a) 30% (b) 27% (c) 43% (d) 40%

**Ans. (a)**

**Q.18. Which one of the following is not a 'Biotic Resource'? [2010 (T-1)]**

- (a) Flora and Fauna (b) Rocks (c) Fisheries (d) Livestock

**Ans. (b)**

**Q.19. Which one of the following is the main cause of land degradation in Punjab? [2010 (T-1)]**

- (a) Intensive Cultivation (b) Overgrazing  
(c) Deforestation (d) Over-irrigation

**Ans. (d)**

**Q.20. Which one of the following is not a renewable resource? [2010, 2011 (T-1)]**

- (a) Solar energy (b) Wind energy (c) Forests (d) Fossil fuels

**Ans. (d)**

**Q.21. Which cold desert is relatively isolated from the rest of country? [2010 (T-1)]**

- (a) Leh (b) Kargil (c) Ladakh (d) Dras

**Ans. (c)**

**Q.22. Soil formed by intense leaching is : [2010, 2011 (T-1)]**

- (a) alluvial soil (b) red soil (c) laterite soil (d) desert soil

**Ans. (c)**

**Q.23. Which one of the following is the main cause of land degradation in Punjab? [2010 (T-1)]**

- (a) Extensive cultivation (b) Deforestation  
(c) Overgrazing (d) Over-irrigation

**Ans. (d)**

**Q.24. Under which of the following types of resource can tidal energy be put? [2010 (T-1)]**

- (a) Human made (b) Biotic (c) Non-recyclable (d) None of these

**Ans. (d)**

**Q.25. In which of the following states is black soil found? [2011 (T-1)]**

- (a) Jammu and Kashmir (b) Bihar  
(c) Rajasthan (d) Jharkhand

**Ans. (c)**

**Q.26. Resources which are found in a region but have not been utilised are called [2011 (T-1)]**

- (a) developed resources (b) stock  
(c) international resources (d) potential resources

**Ans. (d)**

**Q.27. Which of the following is a type of resources on the basis of origin? [2011 (T-1)]**

- (a) Biotic and abiotic (b) Renewable and non-renewable  
(c) Individual and community (d) Potential and reserves

**Ans. (a)**

**Q.28. Which one of the following crops is grown in the black soil? [2011 (T-1)]**

- (a) Rice (b) Wheat (c) Cotton (d) Tea

**Ans. (c)**

**Q.29. Gully erosion is common in the [2011 (T-1)]**

- (a) Chambal basin (b) Ganga basin (c) Rajasthan (d) Hilly region

**Ans. (a)**

### **C. SHORT ANSWER TYPE QUESTIONS (3 MARKS)**

**Q.1. Distinguish between potential resource and stock with the help of examples.**

**Ans.** Resources which are found in a region, but have not been utilised are termed as potential resource. They are either not easily accessible or not properly developed for present use but have the potential to fulfil our needs whenever we require them with development of

technology and infrastructure. For example, the states of Rajasthan and Gujarat have enormous potential for development of wind and solar energy, but they have not been significantly developed yet. Similarly, the hot springs of Himalayan region have potential for development of geothermal energy but their development is lacking. Mineral deposits lie buried in mountains and oceans but their exploitation is lacking.

Stocks, on the other hand, are materials in the environment which have the capacity to satisfy human needs but human beings do not have the appropriate technology to access these. For example, water is a compound of two inflammable gases, hydrogen and oxygen, which can be used as a rich source of energy. But the required technical knowhow to use these abundant gases for this purpose is not available at present. Similarly, by development of desalinisation project we can make ocean water usable for drinking purpose. But we do not have the proper expertise and funds to use them, but our future generations may be able to do so with advancement of science and technology.

**Q.2. What does the term ‘sustainable economic development’ mean? How can we eradicate irrational consumption and over-utilisation of resources?**

**Ans.** Sustainable economic development means ‘development should take place without damaging the environment’ and development in the present should not compromise with the needs of the future generations.

We can eradicate irrational consumption and over-utilisation of resources through conservation of resources. Irrational consumption and over-exploitation of resources lead to many socio-economic and environmental problems. To overcome these problems and to preserve resources for our future generation as well, proper management and conservation of resources is essential.

**Q.3. List the problems caused due to indiscriminate use of resources by human beings.**

**Ans.** Indiscriminate use of resources by human beings has led to economic, social and ecological problems. The major problems that have arisen due to over-exploitation, irrational consumption and indiscriminate use of resources are :

- (i) Depletion of resources for satisfying the greed of a few selfish individuals.
- (ii) Accumulation of resources in a few hands, which in turn, has led to social segregation into rich and poor. The society is divided into two segments, i.e., have and have-nots.
- (iii) Indiscriminate and uncontrolled exploitation of resources without consideration for the future have led to grave ecological problems like global warming, ozone layer depletion, environmental pollution and land degradation.

**Q.4. Why does the pattern of net sown area vary from one state to another?**

**Ans.** The pattern of net sown area varies greatly from one state to another. It is over 80 percent of the total area in Punjab and Haryana. Geographical conditions like climate and soil here, are favourable for cultivation. Further, due to agricultural advancement through Green Revolution, more areas have been brought under cultivation. On the other hand, less than 10 percent of the total area is net sown area in Manipur, Mizoram, Arunachal Pradesh and Andaman and Nicobar Islands. Topographical constraints, unfavourable climate as well as socio-economic reasons account for the low proportion of net sown areas in these states.

On account of the vast expanse of India, its relief, climate, soil and socio-economic set-up vary from region to region accounting for the variation in the pattern of net sown area from one state to another.

**Q.5. Analyse the four main factors which help in the formation of soil.**

**Ans.** Relief, nature of parent rock or bedrock, climate, vegetation and other forms of life, especially decomposers, and time are important factors in the formation of soil. Weathering of the parent rocks due to climatic factors like change of temperature, wind and frost action and rainfall and natural forces like action of running water, wind, glaciers etc., lead to disintegration of rocks. This leads to the formation of soil. The four most important factors of soil formation are thus :

- (i) Relief determines the nature of weathering and erosion.
- (ii) Climate determines the rate and factor of denudation of the rocks and influences weathering and erosion.
- (iii) Nature of the parent rock determines the colour, texture and mineral content of the soil.
- (iv) Time determines maturity of the soil, usually it takes millions of years to form soil upto few cms in depth.

### PREVIOUS YEARS' QUESTIONS

**Q.1. Distinguish between renewable and non-renewable resources [2010, 2011 (T-1)]**

Ans.	Renewable resources	Non Renewable resources
	(i) The resources which get renewed by physical, chemical or mechanical processes are known as Renewable resources	(i) These resources occur over a very long geological time. They gradually get exhausted with use.
	(ii) These resources are generally available throughout the world.	(ii) These resources are generally unevenly distributed on the earth
	(iii) Water, solar energy, wind energy, tidal forests.	(iii) Minerals, coal, petroleum

**Q.2. Distinguish between Khadar and Bangar. Name any two states where alluvial soils are found. [2010, 2011 (T-1)]**

Ans.	KHADAR SOILS	BANGAR SOILS
	(i) On the basis of age these are new alluvial soils.	(i) On the basis of age these are old alluvial soils.
	(ii) These soils are fine and fertile.	(ii) These soils are coarse less fertile than Khadar soils.
	(iii) They are found in the lower reaches of river valleys.	(iii) They are found in the upper reaches of river valleys.

Uttar Pradesh and Bihar have alluvial soils.

**Q.3. What is resource planning? Give three phases of resource planning. [2010, 2011 (T-1)]**

**Ans.** Resource planning is proper and judicious planning of resources. Three processes are involved. Resources are put to use according to availability and needs for development of the Economy. The three processes are :-

- (a) Identification and inventory of resources across various regions of the country. It involves surveying, mapping, qualitative and quantitative estimation and measurement of the resources.

- (b) Evolving a planning structure, endowed with appropriate technological skill and institutional set up for implementing resource development plans.
- (c) Synchronising the resource development with overall national development plans.

**Q.4. Differentiate between stock resources and reserves. [2010, 2011 (T-1)]**

Stock Resources	Reserves
(i) The things present in the nature which have the potential to satisfy the human needs but due to non-availability of appropriate technology these cannot be used for the time being, are called stock.	(i) These are the subset of stock which can be put to use with the help of existing technology but they are still unused
(ii) For example water– it has oxygen and hydrogen, these can be used in energy sector but we cannot use them as much.	(ii) They can be used for future generation or requirement.

**Q.5. Explain what is meant by national resources and individual resources? [2010 (T-1)]**

**Ans. National Resources :-** Technically all resource belong to the nation. The country has legal powers to acquire even private property for public good. All the minerals, water, forest, wildlife, land without the political boundary and oceanic area up to 12 Nautical miles from the coast are National Resources.

**Individual Resources :-** The resources that are owned by individuals - like farming own farms, residential plots, plantation, and all household goods, etc.

**Q.6. Explain the resources on the basis of origin and exhaustibility. [2010, 2011 (T-1)]**

**Ans. Resources on the basis of origin :-**

- (a) **Biotic :-** Those resources which are available in biosphere and have life such as human beings flora and fauna etc.
- (b) **Abiotic :-** All those things which are non-living are called abiotic resources. For example, rocks, soils and minerals

**Resources on the Basis of Exhaustibility :-**

- (a) **Renewable resources :-** The resource which can be renewed are Renewable resources. For Example water, forest wind etc
- (b) **Non-renewable resources :-** These resources occur over a very long time and get exhausted minerals and fossil fuels are examples of these resources.

**Q.7. What is soil erosion? Write two human activities that lead to soil erosion. [2010 (T-1)]**

**Ans.** The denudation of the soil cover and subsequent washing down is described as soil erosion.

**Two human factors leading to soil erosion are :**

- (a) **Deforestation :-** Due to heavy deforestation, soil erosion is increasing.
- (b) **Overgrazing :-** In many regions people still practise grazing of cattle, goats and sheep. Gradually this leads to soil erosion.

**Q.8. Explain any three steps that can be taken to solve the problem of land degradation? [2010, 2011 (T-1)]**

**Ans. (a) Contour ploughing :** Ploughing along the contour lines can decelebrate the flow of water down the slopes.

- (b) **Terrace cultivation** : Steps can be cut out on the slopes, making terraces. Terrace cultivation restricts erosion.
- (c) **Strip cropping** : Large fields can be divided into strips. Strips of grass are left to grow between the crops. This breaks up the force of the wind reducing its effect.

**Q.9. Explain the role of human in resource development. [2010, 2011 (T-1)]**

**Ans.** Human is at the centre of resource development. Actually all resources become resource only when they are put to use by humans. It is human who makes natural things usable with help of technology. Had no technology been there, development would not have been possible. There are regions where natural resources are in abundance but regions not developed for example Africa. But if human are developed they make the region developed with technology, for example, Japan.

**Q.10. Explain the importance of conservation of resources. [2010 (T-1)]**

**Ans.** Conservation of resources is necessary because of following reasons :

- (i) Resources are vital for any developmental activity but irrational consumption and over-utilisation of resources may lead to socio-economic and environmental problems. To overcome these problems, resource conservation at various level is important.
- (ii) If resources are not conserved at this point of time, then our future generations will be left with no resources at all. So it is very important to think for conservation of resources.

**Q.11. Why is it important to raise the land area under forests? [2010 (T-1)]**

**Ans.** It is very important to raise area under forest because forests are essential for maintenance of the Ecological balance. The livelihood of millions of people who live on the fringes of these forests depends upon it. Forest also provides a number of goods that are required for industry and medicines etc. Forest also helps in soil conservation and rainfall.

**Q.12. Describe any three main characteristics of arid soil of India. [2010 (T-1)]**

**Ans.** There characteristics of Arid soils in India are —

- (i) They range from red to brown in colour
- (ii) They are generally sandy in texture and saline in nature
- (iii) In some areas salt content is higher and common salt is obtained by evaporation of water. Due to the dry climate, high temperature, evaporation is faster and the soil lacks humus and moisture.

**Q.13. Highlight any three problems associated with the indiscriminate use of resources by the human beings. [2010, 2011 (T-1)]**

**Ans.** Indiscriminate use of resources creates following problems :-

- (i) Global ecological crises such as global warming.
- (ii) It has also led to depletion of the ozone layer.
- (iii) It has also caused environmental pollution and land degradation.

The resultant threat to ecology and environment has put the future of our planet in danger. Natural disasters have become very frequent. Many species of flora and fauna have already become extinct.

**Q.14. “Consequences of environmental degradation do not respect national or state boundaries.” Justify the statement. [2010 (T-1)]**

**Ans.** As environment belongs to the Earth its impact felt by the whole planet. For example if carbon

dioxide is being released by some rich countries global warming is affecting the lives of all the people on the planet. Air pollution moves along with air and cannot be restricted to any place or country.

Ozone layer depletion has serious consequences for people all over the world.

**Q.15. Describe any three types of soil available in India. [2010 (T-1)]**

**Ans.** Three important soils of India are :—

- (i) **Alluvial Soils :-** It is most important and widespread soil of India. The entire northern plain is made of this soil.

Alluvial have been deposited by three important Himalayan rivers — Ganga, Brahmaputra and Indus. These soils consist of various proportions of sand, silt, and clay. These are of two types : Khadar and Bangar. They contain potash, phosphoric acid and limestone.

- (ii) **Black Soil :-** These soils are black in colour and are also known as Regur or cotton soils. This type of soil is found in Deccan plateau region and is made up of lava flows.

They are well known for their capacity to hold moisture. They are rich in calcium carbonate, magnesium, potash and lime.

- (iii) **Laterite Soil :-** Laterite soil develops in areas of high temperature and heavy rainfall. This is the result of intense leaching. Humus content of soil is very low. These are found in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh and the hilly areas of Orissa and Assam.

**Q.16. What steps can be taken to control soil erosion in hilly areas? [2011 (T-1)]**

**Ans.** (i) Ploughing along the contour lines can decelerate the flow of water down the slopes. This is **contour ploughing**.

- (ii) Steps can be cut out on the slopes making terraces. **Terrace cultivation** restricts erosion.

- (iii) Strip cropping is a very effective method of soil conservation or controlling soil erosion. Large fields are divided into strips and strips of grass are left to grow between the crops.

**Q.17. Mention any three characteristics of black soil. [2011 (T-1)]**

**Ans.** (i) The black soils are made of clayey material and are well-known for their capacity to hold moisture.

- (ii) They are rich in soil nutrients, such as calcium carbonate, magnesium, potash and lime. But black soils are poor in phosphoric contents.

- (iii) Black soil develop deep cracks during summer which helps in proper aeration of the soil. These soils are sticky when wet and difficult to work on unless tilled just after the first shower.

**Q.18. “India’s vast and diverse size is the most important resource.” Support the statement. [2011 (T-1)]**

**Ans.** India has land under a variety of relief features such as plains, plateaus, mountains and islands. About 43 per cent of land areas is plain, which provides facilities for agriculture and industry. Mountains account for 30 per cent of the total surface area of the country and ensure perennial flow of some rivers, provide facilities for tourism and ecological aspects. About 27 per cent of the area is the plateau region. It possesses rich reserves of minerals, fossil fuels and forests.

**Q.19. Suggest any three measures of soil conservation.**

[2010 (T-1)]

**Ans.** The three measures of soil conservation are —

- (i) Contour ploughing—ploughing along the contour lines can lead to soil conservation.
- (ii) Terrace cultivation—steps can be cut out on the slopes making terraces. Terrace cultivation leads to soil conservation.
- (iii) Creating shelter belts — planting of trees to create shelter. Rows of such trees are called shelter belts.

#### **D. LONG ANSWER TYPE QUESTIONS (4 MARKS)**

**Q.1. What are ‘resources’? Distinguish between renewable and non-renewable resources. Give examples.**

**Ans.** Natural endowments which can be utilised to satisfy our needs, provided they are technologically accessible, economically feasible and culturally acceptable, are termed as resources. Materials available in the environment become a resource only when human beings utilise the available technology and institutions created by themselves to transform the substances into usable products which have utility and fulfill human wants. Hence, resources are a function of human activity.

Resources may be classified into renewable and non-renewable resources on the basis of their exhaustibility.

<b>Renewable Resources</b>	<b>Non-Renewable Resources</b>
(i) Resources whose quantity is not reduced due to use and which can be repeatedly used without fear of exhaustion are termed as renewable resources. They are inexhaustible resources.	Substances whose stock gets reduced and are gradually exhausted with use are termed as Non-renewable resources. They are exhaustible resources.
(ii) They can be renewed or reproduced by physical, chemical or mechanical process.	They cannot be increased or recovered.
(iii) Renewable resources like sunlight, wind, water are flow resources whose stock is continuous and are being used since time immemorial.	Their quantity is more or less fixed because their formation takes long geological period of million of years, e.g. minerals. Fossil fuels are exhausted totally with use while metals can be recycled.
(iv) Biotic resources that are renewable, may be temporarily diminished but may be renewed again by natural process and proper management.	These resources can never be renewed or replenished.
(v) <b>Example :</b> Solar and wind energy, water, forests, wildlife etc.	<b>Examples :</b> Fossil fuels like coal and petroleum, minerals.

**Q.2. What are the steps involved in the complex process of resource planning? Why is resource planning important in the context of a country like India?**

**Ans.** Resource planning is a complex process which involves :

- (i) Identification of resources across the country through surveying, mapping and preparation of inventory of resources through their quantitative and qualitative estimation and measurement.

- (ii) Develop a planning structure for resource development taking into account technology, skill and infrastructure available for implementing the plans.
- (iii) Matching the resource development plans with overall national development plans. This involves systematic planning of exploitation of resources.

Resource planning is important in a country like India, which has enormous diversity in the availability of resources. While some regions are rich in certain types of resources, they may be deficient in some other types of resources. For example, a mineral-rich region may be poor in infrastructure or may be socio-culturally backward and included in economically backward regions.

Some regions are self-sufficient in terms of availability of resources, while, on the other hand, there are regions that face an acute shortage of resources. Thus, for proper development, distribution, sharing and utilisation of resources, taking into consideration the technology, quality of human resources and historical experiences of the people, resource planning is essential for development. India has made concerted efforts for achieving the goals of resource planning right from the First Five Year Plan launched after Independence.

**Q.3. What are the main types of soil found in India? Which type of soil is the most widespread and important soil of India ? Describe in detail about this soil type.**

**Ans.** The main types of soil found in various parts of India are as follows :

- (i) Alluvial soil.
- (ii) Black soil.
- (iii) Red and yellow soil
- (iv) Laterite soil
- (v) Arid or Desert soil.
- (vi) Forest and Mountainous soil.

Alluvial soil is the most fertile, widespread and important soil of India. They are riverine soil transported and deposited by the three great river systems— the Indus, the Ganga and Brahmaputra – which have formed the entire Northern Plains. They are also found in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers along the Eastern Coastal plains. They also extend in a narrow corridor to Rajasthan and Gujarat.

The fertility of the alluvial soil has made the Northern Plains and the Eastern Coastal Plain the most productive agricultural regions of India with a high density of population. The alluvial soil contain adequate proportion of potash, phosphoric acid and lime which are ideal for cultivation of paddy, wheat, other cereals and pulses and sugarcane.

The alluvial soil consists of various proportions of sand, silt and clay. The soil near the floodplain are more or less fine and in the deltas they are finest. They are coarse in the upper reaches of the river valley specially near break of slope and in piedment plains like Duars, Chos and Terai.

Alluvial soils are renewed every year during annual floods. The new, fertile, light coloured and fine alluvial deposited near the river is called khadar. The old alluvial deposited earlier are found at about 30 metres above the floodlevel of the rivers. They are clayey, dark in colour, coarse with kanker nodules and less fertile.

**Q.4. What is soil erosion? How do human activities and natural forces cause soil erosion? Suggest measures of soil conservation in hilly, and mountainous areas and in desert areas.**

**Ans.** The denudation or destruction of the soil cover and their subsequent natural removal is termed as soil erosion. Human activities as well as natural forces cause denudation of the top soil. The

soil nutrients are subsequently washed away by running water or blown away by wind.

Human activities like deforestation, overgrazing, construction and mining as well as faulty methods of farming lead to soil erosion. Natural forces like wind, water and glacier can cause soil erosion. Surface runoff leads to formation of gullies, badlands and ravines by cutting out channels in the soil. Entire topsoil may be washed off under the impact of sheet erosion caused by large water flows down a slope. Loose soil may be blown away by wind easily.

In hilly and mountainous areas the following measures can help to control soil erosion :

- (i) Contour ploughing or ploughing along the contour lines of a high land can decelerate flow of water down the slopes.
- (ii) Terrace cultivation or cutting of steps around the slopes to provide land for agriculture also checks downhill flow of water and controls soil erosion, e.g. as in Western and Central Himalayan region.
- (iii) Afforestation can help in soil conservation in hilly areas.

In dry desert areas, planting of rows of trees known as shelter belts to check velocity of wind can control soil erosion. These shelter belts have contributed significantly to the stabilisation of sand dunes and checking the spread of desert in Western India.

**Q.5. What is the need for ‘conservation of resources’? Elucidate in the light of Gandhiji’s view.**

**Ans.** Irrational consumption and over-exploitation of resources without consideration for the future generations have led to grave socio-economic and environmental problems. Social and economic distinctions on the basis of have and have-nots and global ecological problems like global warming, ozone layer depletion, environmental pollution and land degradation are all consequences of uncontrolled exploitation of resources. To overcome these problems and to preserve resources for our future generations as well, conservation of resources is essential. Gandhiji expressed his concern about resource conservation through these words, “There is enough for everybody’s need but not for anybody’s greed.” According to Gandhiji, greedy and selfish individuals and exploitative nature of modern technology is the root cause for resource depletion at the global level. He advocated production by the masses and was against mass production that lead to uncontrolled exploitation of resources.

Accumulation of resources in a few hands due to indiscriminate exploitation of resources has divided the society into rich and poor. An equitable distribution of resources has become essential for sustained quality of life and global peace. This can reduce tension between countries and lead to planned and judicious use of resources. Similarly, conservation of resources can also help tackle ecological crises of global level.

### PREVIOUS YEARS’ QUESTIONS

**Q.1. What does the term ‘land degradation’ mean? Which human activities have contributed significantly in land degradation? Suggest measures to solve the problems of land degradation.**

**OR**

**What are the reasons for land degradation? Describe any four measures to conserve land. (2010)**

**Ans.** Continuous use of land over a prolonged period of time, without taking necessary steps to conserve and manage it, has resulted in land degradation, i.e., qualitative degradation of land. The quality of the land becomes poorer due to gradual loss of fertility due to unplanned use.

Unplanned use and over exploitation by humans have led to degradation of land and have also aggravated the pace of natural forces to cause damage to land. Human activities such as deforestation, over grazing, mining and quarrying have contributed significantly in land degradation. Faulty methods of cultivation and over-irrigation have also caused land degradation in some areas. Mineral processing like grinding of limestone for cement industry, industrial effluents and wastes cause pollution and lead to land degradation.

The problem of land degradation may be tackled by adopting certain measures to conserve land.

- (i) Afforestation or large scale plantation of trees and proper management of grazing.
- (ii) Planting of shelter belts of plants and stabilisation of sand dunes by growing thorny bushes in windy, arid areas like desert of Rajasthan.
- (iii) Proper management of wasteland and control of mining activities.
- (iv) Proper discharge and disposal of industrial effluents and waste after treatment in industrial and suburban areas.

**Q.2. What is resource planning? Why is resource planning essential? Explain with three reasons. (2008)**

**Ans.** Resource planning is the widely accepted strategy for judicious use of resources. It is a complex process which involves :

- (i) Identification and inventory of resources across the regions of the country through surveying, mapping and qualitative and quantitative estimation and measurement of resources.
- (ii) Evolving a planning structure endowed with appropriate technology, skill and institutional set-up for implementing resource development plans.
- (iii) Matching the resource development plans with overall national development plans.

Resource Planning is essential mainly because of the following reasons.

Resources are not equally distributed throughout the world. Within a country also some regions may be rich in resources and self sufficient in terms of availability of resources while some other regions may have acute shortage of some vital resources.

There are regions which are rich in certain types of resources but are deficient in some other resources.

Some regions in the country that are rich in natural resources may be included among economically backward region. On the contrary, there are some regions which have a poor resource base but are economically developed. Technology, quality of human resources and the historical experiences of the people influence resource development.

In a country like India which has an enormous diversity in the availability of resources, resource planning is indispensable.

**Q.3. Explain any four human activities which are mainly responsible for land degradation in India. (2009)**

**Ans.** Continuous use of land over a prolonged period of time without taking necessary steps to conserve and manage it, has resulted in land degradation.

Four human activities responsible for land degradation in India are as follows :

- (i) In states like Jharkhand, Chhattisgarh, Madhya Pradesh and Orissa deforestation due to mining have caused severe land degradation. Mining sites are dug, drilled or quarried and abandoned after excavation work is over, leaving the land overburdened and in a highly degraded state.
- (ii) Mineral processing like grinding of limestone for cement industry and calcite and

soapstone for ceramic industry generate huge quantity of mineral dust in the atmosphere which ultimately settles down on the land. It retards the process of infiltration of water into the soil, thus, degrading the land. Discharge of industrial effluents and wastes cause pollution and land degradation in industrial regions.

- (iii) In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra overgrazing is one of the main reasons for land degradation.
- (iv) In Punjab, Haryana and Western Uttar Pradesh over-irrigation is responsible for land degradation. It leads to water logging which in turn increases salinity and alkalinity in the soil and reduces its fertility.

**Q.4. Give the importance of soil. Explain any three factors responsible for soil formation.**

(2009)

**Ans.** Soil is the medium of plant growth and supports different types of living organisms, including animals and human beings, by providing them with food for their survival. Human existence and settlement is determined by soil fertility as it determines agricultural productivity of an area. Soil determines the natural vegetation and type of crop production of an area.

It also influences the land use of an area. Areas of fertile soil are agriculturally productive and densely populated. It is one of the most important renewable natural resource.

Relief, nature of parent rock or bedrock, climate, vegetation and other forms of life (especially decomposers) and time are important factors in the formation of soil. The three most important factors of soil formation are :

- (i) Nature of parent rock. It influences the colour and texture of the soil. The mineral content of the soil also depends on the parent rock from which it is formed.
- (ii) Climate influences the rate and types of weathering and erosion of the rocks.  
Weathering of the parent rocks due to climatic factors and natural forces lead to disintegration of rocks which leads to the formation of soil.
- (iii) Time determines maturity of the soil. The soil is a living system. It takes millions of years to form soil upto a few centimetres in depth.

**Q.5. Classify resources on the basis of ownership into four categories. Mention the main features of each.**

(2009)

**Ans.** On the basis of ownership resources can be classified into the following categories :

- (i) Individual Resources.
  - (ii) Community Owned Resources.
  - (iii) National Resources.
  - (iv) International Resources.
- (i) Individual resources are owned privately by individuals or group of individuals. Plots of lands owned by farmers, pasture lands, ponds, orchards, water in wells, are examples of resources owned by individuals in the villages. Plots of lands, houses, cars, and other property are some examples of individual resources in urban areas. Plantations are also individual resources. Its plot of land, management, revenue, products and profits are under individual ownership.
- (ii) Community owned resources are accessible to all members of the community. These resources can be used by all people living in the area. Picnic spots, maidans, village ponds, grazing grounds, burial grounds, etc., in villages; playgrounds, public parks, markets, etc in urban areas are examples of community owned resources.
- (iii) National Resources mean all resources owned by a nation. All the forests, wildlife,

minerals, water resources, land within the political boundaries of a nation and oceanic area up to 12 nautical miles, i.e., 19.2 km, from the coast termed as territorial water, and resources therein belong to the nation and are termed as national resources.

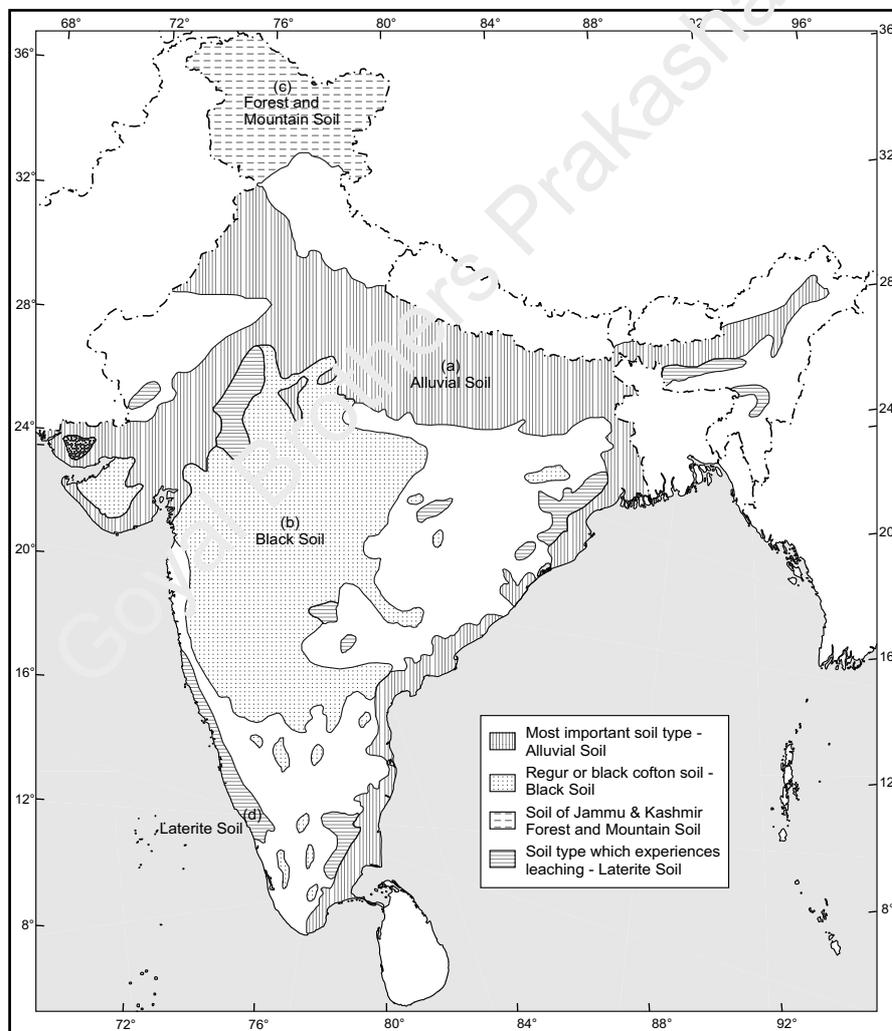
- (iv) International Resources are under the jurisdiction and regulation of international organisations. The oceanic resources beyond 200 km of the Exclusive Economic Zone belong to open oceans and no individual country can utilise these without the concurrence of international institutions, e.g. manganese nodules in bed of the Indian Ocean.

### E. MAP WORK (4 MARKS)

**Q.1. On an outline map of India mark and label the following soil types with help of the identification clues.**

- (a) Most important soil type of India                      (b) Soil known as regur or black cotton soil  
 (c) Soil type of Jammu and Kashmir                      (d) Soil type which experiences leaching

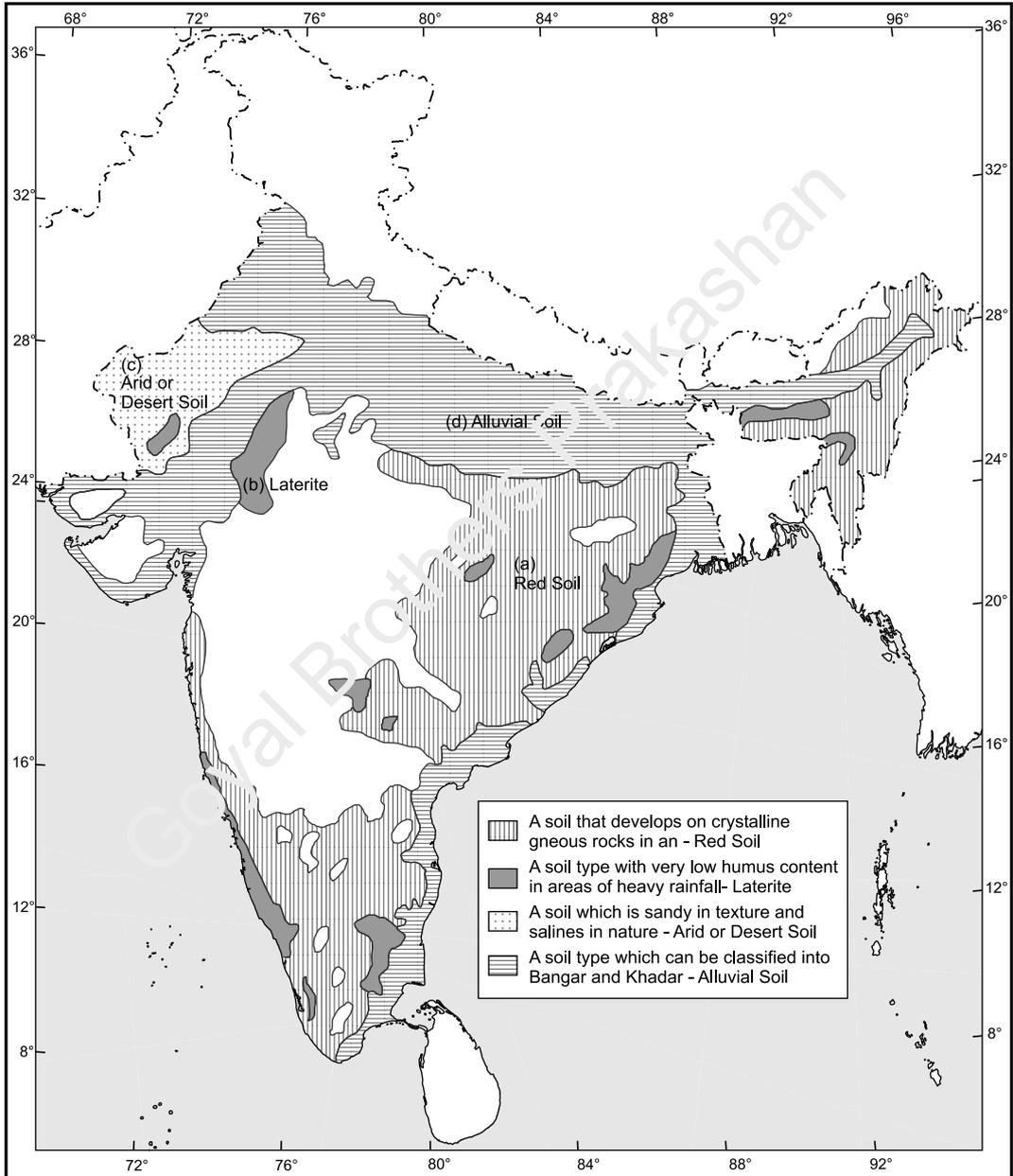
**Ans.**



**Q.2. On an outline map of India, mark and label the following. Identify and name the soil types and shade them on the map.**

- A soil type which develops on crystalline igneous rocks in areas of low rainfall.
- A soil type with very low humus content in areas of heavy rainfall.
- A soil which is sandy in texture and saline in nature.
- A soil type which can be classified into Bangar and Khadar

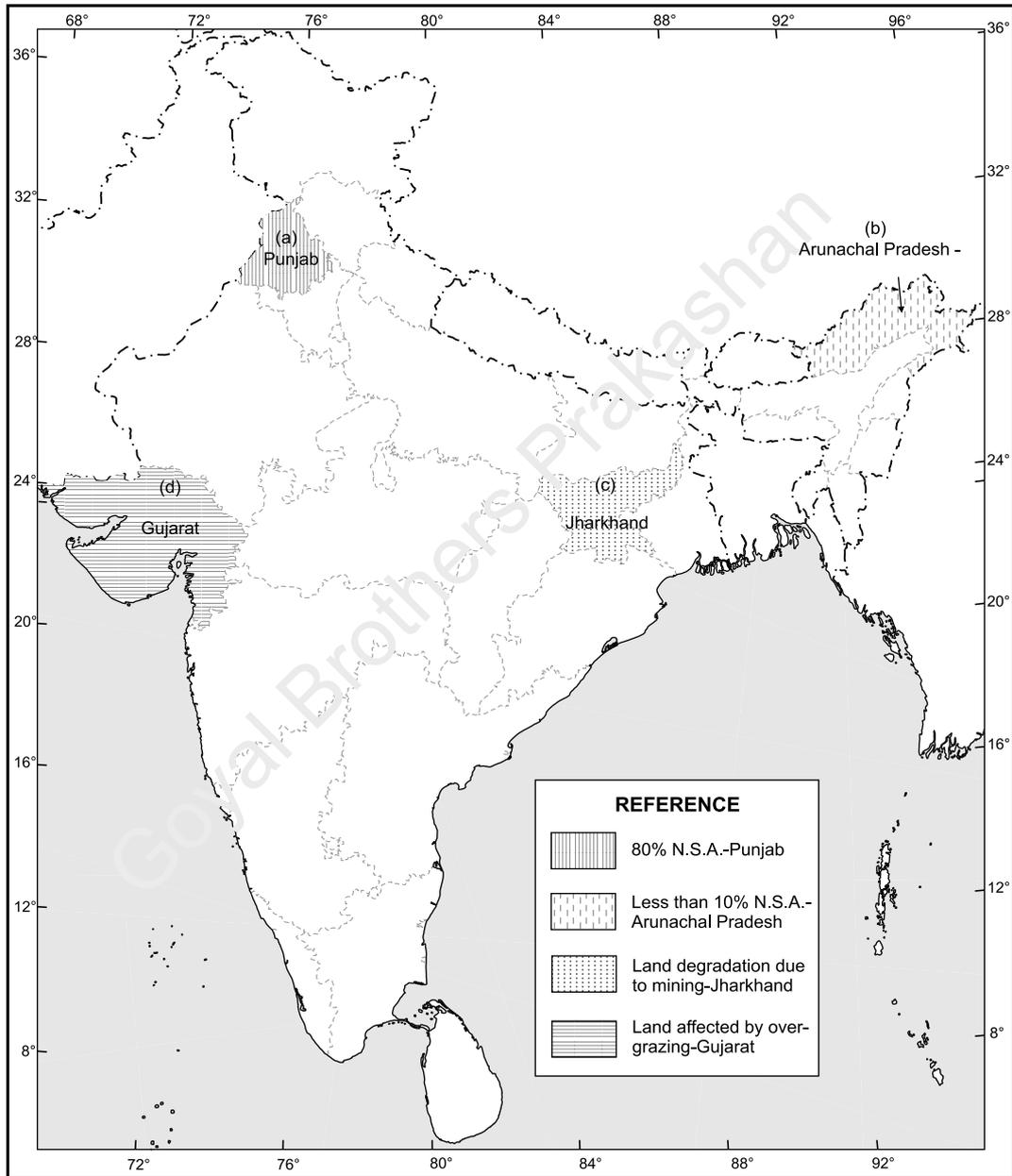
**Ans.**



**Q.3. On an outline map of India mark and label the following.**

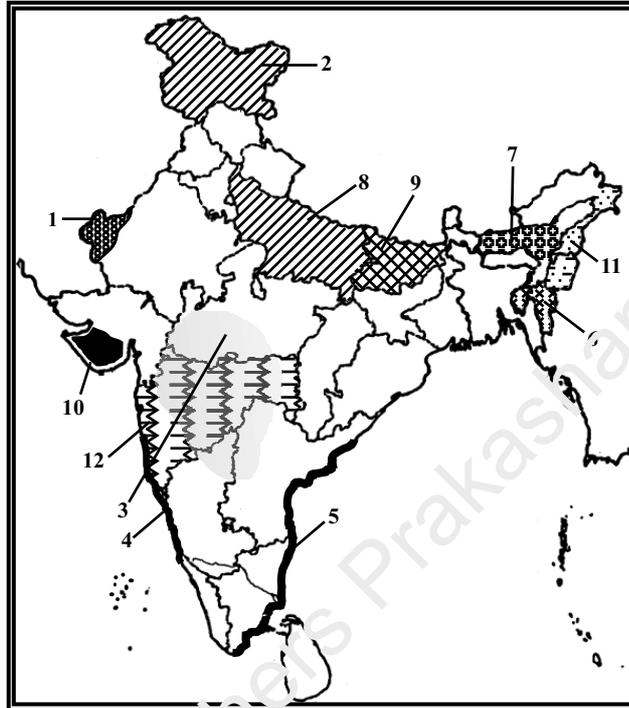
- (a) A state with 80 per cent of its area as net sown area.
- (b) A state with less than 10 per cent of its total area as net sown area.
- (c) A state which has suffered land degradation due to mining.
- (d) A state whose land has been affected due to overgrazing.

**Ans.**



**PREVIOUS YEARS' QUESTIONS**

**Q.1. Identification only. (Soil Types)**



- Ans.** (1) Arid soil  
(2) Mountainous soil  
(3) Black soil  
(4) Laterite soil  
(5) Alluvial soil  
(6) Red and yellow soil  
(7) Alluvial soil  
(8) Alluvial soil  
(9) Alluvial soil  
(10) Black soil  
(11) Red and yellow soil  
(12) Black soil

## II. FORMATIVE ASSESSMENT

### A. PROJECT WORK

**Q.1.** Survey the locality in which you live. Identify the landuse pattern, i.e. the various types of uses that land has been put to. Find out the causes of land degradation in the area where you live.

During the holidays collect the same informations—landuse and land degradation from a nearby village. Compare the information collected for the town and village.

**Q.2.** Collect samples of different types of soil found in India. On a chart draw a map showing soil types of India using appropriate colours. On another chart fix the soil samples in transparent plastic packets and write in short about the characteristics of each type of soil.

### B. ACTIVITIES

**Q.1.** Given below are some measures of soil conservation. Identify them and fill up the following :

Type of soil conservation.

Type of soil conservation.

Type of soil conservation.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Areas in which applied.

Areas in which applied.

Areas in which applied.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Q.2. Soil Profile**

Take a large mouthed cylindrical beaker. Carefully put the following inside the beaker one by one in layers.

Layers	Material used	Layer represented
Bottom layer	Big pieces of rocks	
Next layer over it	Small rocks, pebbles, coarse soil	
3 <sup>rd</sup> layer	Smaller rocks, sand, silt and clay	
Topmost layer	Loose soil and decomposed leaves	

Demarcate the layers using marker pens. Label the Soil Horizons formed inside the beaker. Fill up the column for layer represented to show the different Horizons of Soil Profile.

### C. ASSIGNMENTS

#### Q.1. Classify.

Given below are examples of some resources. Classify them on the basis of ownership :  
Plots of land, forest, grazing grounds, manganese nodules in the bed of Indian Ocean, village ponds, wells, orchards, public parks, canals, railways, coral reefs, playgrounds, houses, shopping malls, iron ore deposits in the country, rivers, pet dog, wildlife.

Individual Resources	Community Owned Resources	National Resources	International Resources

#### Q.2. Missing Letters

- (a) \_ E \_ \_ L \_                      Recyclable non-renewable resource.  
 (b) R \_ \_ E \_ V \_ S.                Subset of stock.  
 (c) \_ I \_ D \_ J \_ \_ E I \_ \_        First international earth summit was held here.  
 (d) \_ O U \_ \_ A \_ N \_              Ensure perennial flow of some rivers.  
 (e) B \_ R \_ \_ N                      Land unfit for cultivation

Ans. (a) METALS (b) RESERVES (c) RIO DE JANEIRO (d) MOUNTAINS (e) BARREN

### D. QUIZZES

#### Q.1. Word Jumble.

- (a) ADWTSAENL \_\_\_\_\_ (Rocky, arid and desert areas that cannot be easily put to any economic use).  
 (b) TARGAU \_\_\_\_\_ (Overgrazing is the main reason of land degradation in this state).  
 (c) SUHMU \_\_\_\_\_ (Organic matter in top soil).  
 (d) RANABG \_\_\_\_\_ (Old alluvium).  
 (e) IRAD LOIS \_\_\_\_\_ (Soil that is sandy in texture and saline in nature).

Ans. (a) WASTELAND (b) GUJARAT (c) HUMUS (d) BANGAR (e) ARID SOIL

#### Q.2. Match the following

- |                   |  |
|-------------------|--|
| (i) Alluvial Soil | (a) Regur  |
| (ii) Black Soil   | (b) Found in forested hilly and mountainous areas              |
| (iii) Red Soil    | (c) Riverine Soil  |
| (iv) Forest Soil  | (d) Very low humus content                                     |
| (v) Laterite      | (e) Diffusion of iron in old crystalline and metamorphic rocks |

Ans. (i) (c) (ii) (a) (iii) (e) (iv) (b) (v) (d)

**Q.3. Word Grid :** Solve the puzzle by following your search horizontally and vertically and circle the answers for the following clues.



- (i) An exhaustible resource that also causes pollution on use
- (ii) A non-renewable, recyclable resource.
- (iii) Natural endowments in form of land, water, vegetation, minerals, etc.
- (iv) Fertile soil, forming the Northern Plains of India.
- (v) Soil developed on crystalline igneous rocks in areas of low rainfall.
- (vi) Plantation of trees on large scale to check soil erosion.
- (vii) Intensively leached soils in areas of heavy rainfall.
- (viii) Soil with high water retaining capacity.
- (ix) Utilisation of land for various purposes.
- (x) Renewable natural resource which is medium for plant growth.

Ans. (i) Fossil Fuel (ii) Mineral (iii) Resource (iv) Alluvial (v) Red soil  
(vi) Afforestation (vii) Laterite (viii) Black Soil (ix) Landuse (x) Soil

## E. GROUP DISCUSSION

**Q.1. Discuss in the class how we can conserve resources at our homes and in school.**

**Q.2. Debate**

Divide the class into two groups.

Group A will discuss how technology leads to creation of resources.

Group B will discuss how technology leads to destruction of resources.

Draw inference as to the role of human in utilising technology to create and exploit resources.