Grade X - Geography

Lesson 1. Resources and Development

Objective Type Questions

(1 Mark each)

I. Multiple choice questions

1. Arrange the following in the correct sequence: Resource planning in India involves:

i. Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.

ii. Identification and inventory of resources across the regions of the country. This involves surveying, mapping and qualitative and quantitative estimation and measurement of the resources.

iii. Matching the resource development plans with overall national development plans.

Options:

(A) (i) - (ii) - (iii) (B) (iii) - (i) - (ii)

(C) (ii) - (i) - (iii) (D) (i) - (iii) - (ii)

2. "There is enough for everybody's need and not for anybody's greed". Who said this?

(A) Jawaharlal Nehru (B) Atal Bihari Vajpayee

(C) M. K. Gandhi (D) Sunder Lal Bahuguna

3. Resources which are surveyed and their quantity and quality have been determined for utilisation is known as _____.

(A) Potential resources (B) Stock

(C) Developed resources (D) Reserves

4. _____ Zone is the oceanic zone in which the country has the right to do fishing, drilling, etc.

(A) Marine Economic **(B) Exclusive Economic**

(C) Aquatic Economic (D) International Economic

5. Development which should take place without damaging the environment and compromising with the needs of the future generations is called _____ development.

(A) sustainable (B) future

(C) resource (D) collateral

6. Which one of the following soil is ideal for growing cotton?

a. Regur soil b. Laterite soil c. Desert soil d. Mountainous soil

7. Soil is formed by the process of

a. Denudation b. Gradation **c. Weathering** d. Erosion

8. Land left without cultivation for one or less than one agricultural year is called

a. Culturable waste land **b. Current fallow land**

c. Waste land d. None of the above

9. Which one of the following statements is correct as regard to international resources?

a. Resources which are regulated by international institutions.

b. Resources which lie beyond the territorial waters.

c. Resources which are found along the international frontier.

d. Resources which are not yet developed.

10. The first International Earth Summit was held in

a. Geneva b. New York c. Japan **d. Rio de Janeiro**

11. The most widespread relief feature of India is

a. Mountains b. Forests **c. Plains** d. Plateaus

12. Resources which are found in a region, but have not been utilised

a. Renewable b. Developed c. National **d. Potential**

13. Which one of the following statements is true about the term resources?

a. Resources are free gifts of nature.

b. They are the functions of human activities.

c. All those things which are found in nature.

d. Things which cannot be used to fulfil our needs.

14. Which of the following reasons account for the low propotion of net sown areas in Manipur, Mizoram and Arunachal Pradesh?

a. These states are very small in area.

b. These states have low population density.

c. Topographical constraints, unfavourable climate area have shortage of water.

d. These areas have shortage of water.

15. Laterite soil is formed by intense leaching. Which of the following is the important characteristic of laterite soil?

a. This soil is generally sandy in texture and saline in nature.

b. This soil develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau.

c. Humus content is very low because bacteria gets destroyed due to high temperature.

d. This soil is rich in soil nutrients, such as calcium carbonate, magnesium, potash and lime.

16. Choose the correctly matched pair about the soils in India from the following options:

a. Arid soil – black coloured, also known as regur soils

b. Laterite soil-develop on crystalline rocks

c. Forest soil – acidic with low humans content

d. Alluvial soil-gets sticky when wet

17. Which of the following features is peculiar to Black soil?

a. It is higher concentration of kanker nodules.

b. It is highly acidic.

c. It looks yellow when it occurs in a hydrated form.

d. It is well-known for its capacity to hold moisture.

18. The availability of resources is a necessary condition for the development of any region. Apart from this what is required for development?

a. Huge workforce for the exploitation of resources

b. Easy access of the resources for the people living in that region

c. Corresponding changes in technology and institutions

d. Rich cultural heritage

II. Multiple choice questions

(1 Mark each)

1.

Column A		Column B	
(i)	Black Soil	(A)	Western Rajasthan
(ii)	Alluvial Soil	(B)	Himalayan Region
(iii)	Arid Soil	(C)	Northern Plains
(iv)	Forest Soil	(D)	Maharashtra

(A) (i)-(D), (ii)-(C), (iii)-(A), (iv)-(B) (B) (i)-(C), (ii)-(D), (iii)-(B), (iv)-(A)

(C) (i)-(B), (ii)-(A), (iii)-(D), (iv)-(C) (D) (i)-(A), (ii)-(B), (iii)-(C), (iv)-(D)

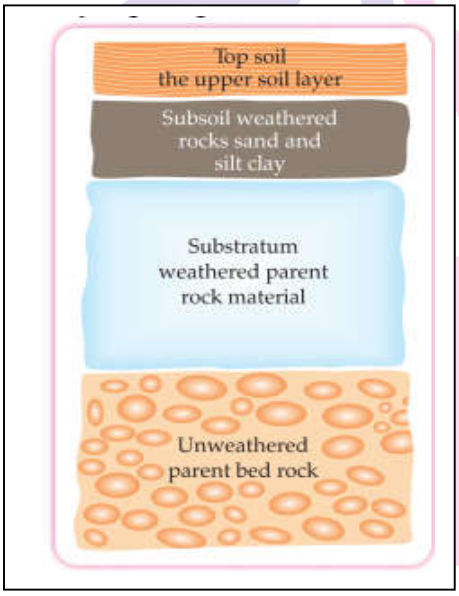
2.

Column A		Column B	
(i)	Red and Yellow Soil	(A)	Rajasthan, Gujarat
(ii)	Laterite Soil	(B)	Odisha, Chhattisgarh
(iii)	Alluvial Soil	(C)	Maharashtra, Madhya Pradesh
(iv)	Black Soil	(D)	Karnataka, Kerala

(A) (i)-(D), (ii)-(C), (iii)-(A), (iv)-(B) (B) (i)-(C), (ii)-(D), (iii)-(B), (iv)-(A)

(C) (i)-(B), (ii)-(D), (iii)-(A), (iv)-(C) (D) (i)-(B), (ii)-(A), (iii)-(D), (iv)-(C)

3. Study the given figures and answer the following:



How many layers of soil are seen in this soil profile?

(A) 2 layers (B) **4 layers**

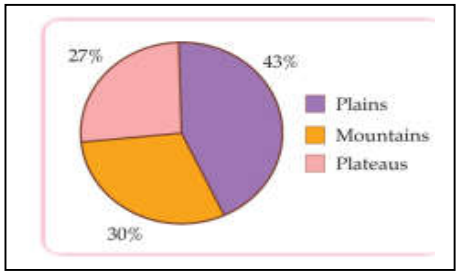
(B) 1 layer (D) 3 layers

4. Which of the following is an example of Cultivable Wasteland?

(A) Gross cropped area **(B) Uncultivated land**

(C) Barren wasteland (D) Current fallow land

5. Study the given graph and answer the following:



About how much percent land area is plains?

(A) 27 %
(B) 72 %
(C) 30 %
(D) 43 %

6. Analyze the information given below, considering one of the following correct options:

i) It is formed by the deposition of alluvium brought down by the east – flowing peninsular rivers.
ii) It is highly fertile
iii) It consists of various proportions of sand, silt and clay.
iv) It is rich in potash, phosphoric acid and lime by deficient in organic matter.

Options:

(A) Main features of alluvial soil
(B) Main features of black soil
(C) Main features arid soil
(D) Main features of laterite soil

7. Analyze the information given below, considering one of the following correct options:

i) Contour ploughing
ii) Terrace farming
iii) Strip cropping
iv) Afforestation

Options:

(A) Measures for ploughing
(B) Measures for soil conservation
(C) Measures for terrace farming
(D) Measures for afforestation

8. Find the incorrect option from the following:

(A) The cold desert of Ladakh is relatively isolated from rest of the country.
(B) It has very rich cultural heritage.
(C) It has sufficiency in water, infrastructure and some vital minerals.
(D) This calls for balanced resource planning at the national, state, regional and local levels.

9. In which one of the following states is overgrazing the main reason for land degradation?

(D) **Maharashtra** (B) Punjab (C) Haryana (D) Uttar Pradesh

10. Identify the soil which ranges from red to brown in colour and is saline in nature:

(A) Red soil (B) Laterite soil

(C) Arid soil (D) Alluvial soil

11. Which one of the following human activities has contributed most in land degradation?

(A) Deforestation (B) Overgrazing

(C) Mining (D) **All of the above**

12. Which among the following is not a problem of resource development?

(A) Depletion of resources for satisfying the greed of few individuals

(B) Accumulation of resources in few hands

(C) Indiscriminate exploitation of resources

(D) And equitable distribution of resources

13. Deforestation due to mining has caused severe land degradation in which one of the following states?

(A) Odisha (B) Tamil Nadu

(C) Kerala (D) Gujarat

14. Which one of the following forces leads to maximum soil erosion in plains?

(A) Wind **(B) Glacier**

(C) Running water (D) Earthquake

I. Assertion & Reason

Directions : In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

(A) Both A and R are true and R is the correct explanation of A.

(B) Both A and R are true, but R is NOT the correct explanation of A.

(C) A is true, but R is false.

(D) A is false and R is true.

1. Assertion (A) : Resources are vital for human survival as well as for maintaining the quality of life.

Reason (R) : It was believed that resources are free gifts of nature.

2. Assertion (A) : Human beings themselves are essential components of resources.

Reason (R) : They transform material available in our environment into resources and use them.

3. Assertion (A) : In villages there are people with land ownership but there are many who are landless.

Reason (R) : Urban people own plots, houses and other property. Plantation, pasture lands, ponds, water in wells, etc.

Ans. Option (B) is correct

4. Assertion (A) : Planning is the widely accepted strategy for judicious use of resources.

Reason (R) : It has importance in a country like India, which has enormous diversity in the availability of resources.

In the given questions (Q. 16), there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option from the following:

a. Both A and R are wrong.

b. A is correct but R is correct

c. A is wrong but R is correct.

d. Both A an R are true and R is the correct explanation of A.

5. Assertion (A) : Resources are free gifts of nature.

Reason (R) : Resources like soil, air, water are easily available in nature.

Ans. Option (A) is Correct

II. Assertion & Reason

Directions : In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

(A) Both A and R are true and R is the correct explanation of A.

(B) Both A and R are true, but R is NOT the correct explanation of A.

(C) A is true, but R is false.

(D) A is false and R is true.

1. **Assertion (A)** : The availability of resources is a necessary condition for the development of any region.

Reason (R) : Availability of resources in the absence of corresponding changes in technology may obstruct development.

2. **Assertion (A)** : Proper discharge and disposal of industrial wastes can reduce land degradation in suburban areas.

Reason (R) : In the states of Punjab, Haryana, western Uttar Pradesh, over - irrigation is responsible for land degradation.

Option (D) is correct.

3. **Assertion (A)** : India has varied relief features, landforms, climatic realms and vegetation types.

Reason (R) : These have been deposited by three important Himalayan river systems the Indus, the Ganga and the Brahmaputra.

Option (C) is correct

4. **Assertion (A)** : Land is a natural resource of utmost importance.

Reason (R) : It supports natural vegetation, wild life, human life, economic activities, transport and communication systems.

I. Short Answer Type Questions.

(3 marks each)

1. Describe the importance of judicious use of resources. **[OR]**

Describe the different steps of 'resource planning.

Ans. Following are the three steps of 'resource planning':

(i) Through surveying, mapping, qualitative & quantitative estimation 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.

2. "In India, some regions are rich in certain types of resources but deficient in some other resources". Do you agree with the statement? Support your answer with any three examples.

Ans: Yes, there are regions which are rich in certain types of resources, but are deficient in some other resources.

(i) Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal deposits.

(ii) Arunachal Pradesh has an abundance of water resources, but lacks in infrastructural development.

(iii) Rajasthan is endowed with solar and wind energy but lacks in water resources.

(iv) The cold desert of Ladakh is relatively isolated from the rest of the country. It has a very rich cultural heritage, but it is deficient in water, infrastructure and some vital minerals.

3. Why is it essential to have resource planning? Explain any three reasons.

Ans: (i) If the present trend of resource depletion by few individuals continues, the future of our planet is in danger.

(ii) Planning is essential for sustainable existence of all forms of life. Resource planning becomes extremely important in a country like India, which has enormous diversity in the availability of resources.

(iv) Indiscriminate exploitation of resources has led to global ecological crises.

4. _____ and _____ are the methods of soil conservation in hilly areas.

Ans: Terrace farming and contour ploughing

5. Old alluvial soil is called _____.

Ans: Banger

6. _____ is a method of growing rows of trees in arid regions.

Ans: Shelter belts

7. Landuse pattern of India is lopsided. (True/False)

Ans: True

8. The Alluvial Soil is the most widespread soil of India.

Ans: True

9. Red soils are found in Thar Desert. (True/False)

Ans: False

10. Matching the columns.

Column A	Column B
a) Uppermost layer of soil	i) Black soil **c**
b) New alluvial	ii) Topsoil **a**
c) Regur Soil	iii) Over grazing **e**
d) Land with many gullies and ravines	iv) Khadar **b**
e) Land degradation	v) Bad Land **d**

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

11. What is a resource?

Ans: Anything which can be used for satisfying the human needs is called a resource.

12. What does the process of transformation of things in nature involve.

Ans: The process of transformation in nature involves an interactive between nature, technology and institutions by human beings.

13. How does man develop the resources?

Ans: Man develops resources according to his needs and aspirations, his technical skill along with its economics feasibility and cultural acceptance.

14. To what distance do the territorial waters o India extend?

Ans: The territorial waters of India extend up to 12 nautical miles (22.2 km) from the coast.

15. What is the importance of resources?

Ans: Resources are important for human survival as well as for maintaining quality of life.

16. Which is a special feature of the sustainable development?

Ans: Development should take place without damaging the environment.

17. What is the full form of UNCED?

Ans: United Nations Conference on Environment and Development.

18. What is resource planning?

Ans: Judicious use of resources is known as resource planning.

19. Absence of which two components can hinder development of an area?

Ans: Corresponding changes in technology and institutional development.

20. Why is conservation of resources important?

Ans: Conservation is important as resources are used for developmental activities.

21. What is the result of irrational consumption and non-utilisation of resources?

Ans: It results in socio-economic and environmental problems.

22. What does land as a natural resource support?

Ans: Land as a natural resources supports:

a) Natural vegetation

b) Wild life

c) Human life

d) Economic activities

e) Transport and communication systems. (any two)

23. Define culturable waste land.

Ans: The land left uncultivated for more than five agricultural years.

24. What is the area brought under cultivation in a year called?

Ans: Net sown area

25. List any two factors that determine the land use.

Ans: Physical factors –Topography, climate and soil type. Human factors – Population density, technological capability, culture, traditions, etc.

26. According to the National Forest Policy, what should be the percentage of forest area in a country?

Ans: 33%

27. What does the waste land include?

Ans: It includes rockey, desert and acid areas and land put to non-agricultural uses like settlements roads, railways, industry, etc.

28. Which factor is responsible for maximum land degradation?

Ans: Human activities

29. What has caused severe land degradation in states like Jharkhand and Chhattisgarh?

Ans: Deforestation due to mining.

30. How does over irrigation lead to land degradation?

Or

How is over irrigation responsible for land degradation in Punjab?

Ans: Over irrigation leads to water logging that increases salinity and alkalinity in the sail that results in land degradation.

31. How does mineral ping degrades the land?

Ans: Processing of minerals generate huge quantity of dust that settles down on the land and restricts the process of infiltration into the soil.

32. Which soil is the best for cotton cultivation?

Ans: Black Soil

33. What gives red and yellow colour to red and yellow soil?

Ans: Red and yellow soil develops a reddish colour due to diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form.

34. Where does the laterite soil develop?

Ans: Laterite soil develops under tropical and subtropical climte with alternate we and dry season.

35. What is the name if the soil formed by intense leaching? List any two important characteristics of this soil.

Ans: Laterite soil is formed by intense leaching. Laterite soils are mostly deep to very deep, acidic, generally deficient in plant nutrients.

36. Name of the two crops which can be grown in laterite soil after adopting soil conservation technique.

Ans: Tea and Coffee

37. What type of soil develops due to high temperature and evaporation?

Ans: Arid Soil

38. What restricts water infiltration into the arid soils?

Ans: Foundation of Kankar layers restricts water infiltration into the arid soils.

39. Name the natural forces which lead to soil erosion.

Ans: The natural forces which lead to soil erosion are wind, glacier and water.

40. What are gullies?

Ans: The running water cuts through clayey soils and makes deep channels are called gullies.

41. What are bad lands?

Ans: Due to the formation of gullies, the land becomes unfit for cultivation and is known as bad land.

42. What is a ravine?

Ans: A ravine is a deep narrow valley on earth's surface formed by running water. E.g. Chambal ravine in Madhya Pradesh.

43. What is sheet erosion?

Ans: Sometime water flows as a sheet over large area down the slope. In such cases the top soil washes away. It is called sheet erosion.

44. What method is used to break up the force of wind?

Ans: Strip Cropping

II. Short Answer Type Questions. (3 marks each)

1. Suggest and explain any three ways to protect land from degradation in various states of India.

Ans: i) Afforestation

ii) Proper management of grazing

iii) Planting of shelter belts of plants.

iv) Stabilization of sand dunes by growing thorny bushes.

v) Control of mining activities.

vi) Proper discharge and disposal of industrial effluents and wastes after treatment.

2. Distinguish between khaddar and Bangar soil.

S. No	Khadar Soils	Bangar Soils
i)	It is new alluvial soil.	It is an old alluvial soil.
ii)	Lower concentration of kankar nodules.	Higher concentration of Khadar nodules.
iii)	It has more fine particles	It has less fine particles.

3. Which is the main cause of land degradation in Gujarat, Rajasthan and Madhya Pradesh? How can it be checked? Explain.

4. Distinguish between red soil and laterite soil stating any three points of distinction.

Ans:

S. No	Khadar Soils	Bangar Soils
i)	Red soil develops on crystalline igneous rocks in areas of low raingall.	Laterite soil develops in areas with high temperature and heavy rainfall.
ii)	Formed due to weathering.	Formed due to leaching.
iii)	Red soil is found in parts of Odisha and Chhattisgarh, southern parts of the middle of Ganga plain and along the piedmont zone of the Western Ghats.	Laterite soil is mainly found in Karnataka, Kerala and the hilly areas of Odisha and Assam.

5. Describe any three main features of 'Alluvial Soil' found in India. OR

Describe any three main features of 'Black Soil' found in India.

Ans: i) Alluvial soil is widely spread over the northern plains by the three Himalayan river systems – The Indus, The Ganga and The Brahmaputra.

ii) Most fertile soil among all soil tyres.

iii) Alluvial soil is classified as Bangar and Khadar.

iv) It contains potash, phosphoric acid and lime.

Detailed Answer:

Three main features of Alluvial Soil found in India are:

(i) The entire northern plains are made of alluvial soil. These soils also extend in Rajasthan and Gujarat, also found in the eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.

(ii) Alluvial soils are deposited by three important Himalayan river systems the Indus, the Ganga and the Brahmaputra.

(iii) According to their age, alluvial soils can be classified as old alluvial (Bangar) and new alluvial (Khadar). The bangar soil has higher concentration of kankar nodules than the Khadar. It has more fine particles and is more fertile than the bangar.

6. Describe the different steps of 'resource planning'.

Ans: The following are the steps involved in resources planning:

a) Surveying, mapping and measurement of characteristics and properties of resources.

b) Examining resources with respect to technology, economy and need.

c) Matching the resource development plans with overall national development plans.

7. Explain the role of humans in resource development.

Ans: Human are 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 no technology been there, development would not have been possible. There are regions where natural resources are in abundance and there are regions which are resource – poor. But if humans are developed they make the region developed with technology, for example, Japan.

8. Examine the three major problem created as a result of indiscriminate utilisation of natural resources. OR

'Indiscriminate use of resources has led to numerous problems'. Justify the statement.

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

a) Depletion of resources for satisfying the greed of a few selfish individuals.
b) Accumulation of resources in a few hands, which in turn, has led to social segregation into two segments, i.e., the haves and the have-nots.
c) Indiscriminate and uncontrolled exploitation of resources without consideration for the future has led to grave ecological problems like global warning, ozone layer depletion, environmental pollution and land degradation.

9. Which summit was convened for addressing urgent problems of environmental protection and socio-economic development at the global level? Explain sustainable development in this context.

Ans: The first International Earth Summit at Rio de Janeiro, Brazil in 1992 was convened to discuss problems of environmental protection and socio-economic development at the global level. The members signed Agenda 21 for achieving sustainable development in the 21st century. Agenda 21 aims a sustainable development to combat environmental damage, poverty, disease through global co-operation on common interests. Its aim is not only to protect the present generation but also posterity.

10. "In India, some regions are rich in certain types of resources but deficient in some other resources." Do you agree with the statement? Support your answer with any three examples.

Ans: Yes, in India, Some regions are rich in certain type of resources but deficient in other, for example:

a) The state of Rajasthan is well endowed with wind and solar energy, but has shortage of water resources.
b) The cold desert of Ladakh has very rich cultural heritage but it is deficient in water, infrastructure and some vital minerals.
c) Arunachal Pradesh has abundance of water but lacks infrastructural development.

11. Explain three stages of resources planning.

Ans: The three stages of Resources Planning are:

a) Surveying, mapping and measurement of characteristics and properties of resources.
b) Examining resources with respect to technology, economy and need.
c) Matching the resources development plans with overall national development plans.

12. "India's vast and diverse size is the most important resource." Support the statement.

Ans: India has land under a variety of relief features such as plains, plateaus, mountains and islands. Abour 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.

13. Mention three physical factors as well as three human factors which determine the use of land in India.

Ans: Utilisation of land for carious purposes, such as cultivation, grazing of animals, mining and construction of roads is called land use pattern.

a) Physical factors

i. Topography
ii. Climate
iii. Soil type

b) Human factors

i. Population density
ii. Technological capability
iii. Culture and traditions

14. 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 per cent 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 per cent of the total area is net sown area in Manipur, Mizoram, Arunachal Pradesh, and Andaman an Nicobar Islands. Topographical constraints, unfavourable climate and 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.

15. "33 per cent of the total land area of acountry should be under forests." Justify the statement highlighting the environmental values of forests.

Ans: The National Forest Policy (1952) outlines that forest area of a country is far lower than the desired 33 per cent of the geographical area.

a) Forests are essentials for maintaining the ecological balance. Plants, animals and micro-organisms recreate the quality of air, that we breathe and the soil that produces our food, without which we cannot survive.
b) Forests protect the genetic diversity of plants and animals for better growth of species and breeding.
c) Forests are the primary producers on which all other living organisms survie.

16. Explain the importance of conservation of resources.

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

a) Resources are vital for any developmental activity but irrational consumption and overutilization of resources may lead to socio-economic and environmental problems. To overcome these problems, resource conservation various levels are important.
b) 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 conserve the resources.

17. Suggest any six measures to solve the problem of land degradation in India.

Ans: The following steps can be taken to solve the problem of land degradation.

a) Contour ploughing: Ploughing along the contour line can decelevate 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.
d) Afforestation – Planting of more trees.
e) Control on over grazing.
f) Stabilisation of sand dunes by growing thorny bushes.
g) Proper management of waste lands.
h) Proper discharge and disposal of industrial effluents and wastes after treatment.

18. Explain any thre factors responsible for he formation of soil.

Ans: Soil is the most important renewable natural resources. It supports many kind of living organisms and it is a medium of plant growth . It takes millions of years to form soil. It is a living system.

Soil is formed through various factors like:

a) Relief, bed rock, climate, vegetation and many forms of life and time are important factors in the soil formation.

b) Various forces of nature e.g. change in temperature, action of running water, glaciers, wind and the activity of decomposers help in the formation of soil.

c) Chemical and organic changes taking place in soil are equally important.

19. What type of soil is found in river deltas of the easter coast? Give two main features of this type of soil.

OR

Describe any three features of 'Alluvial Soil' found in India'.

Ans: Alluvial soil. Its main features are:-

a) Mostly these soils contain adequate proporation of potash and lime which are ideal for the growth of sugar cane, paddy, wheat etc.

b) Such a soil is the result of deposits of river.

c) It is a very fertile soil.

20. Distinguish between Khadar and Bangar. Name any two states where alluvial soils are found.

Ans: Differences between Khadar and Bangar:

Khadar Soils	Bangar Soils
a) On the basis of age, these are new alluvial soils. b) These soils are fine and fertile. c) They are found in the lower reaches of river valleys.	a) On the basis if age, thest are old alluvial soils. b) These soils are coarse and less fertile than Khadar soils. c) They are found in the upper reaches of river valleys.

Alluvial soils are found in Gujarat and Rajasthan.

21. Mention any three characteristics of black soil.

OR

Describe any three features of 'Black Soil' found in India.

Ans: The following are the characteristics of the black soil.

a) The black soil is made up of clayey material and is well known for its capacity to hold moisture.

b) It is rich in soil nutrients, such as calcium carbonate, magnesium, potash and lime but is poor in phosphoric contents.

c) Black soil develops deep cracks during summer which helps in proper aeration of the soil. These soils are sticky when wet and difficult to work on unless tilted just after the first shower.

22. Mention any three features of arid Soil.

Ans: The following are the features of arid Soil:

a) Arid soils have colour ranging from red to brown. They are generally sandy in texture and saline in nature.

b) In some areas salt content is very high and common salt can be obtained by evaporating the water.

c) Due to dry climate and high temperature, evaporation is faster and soils lack humus and moisture.

d) The lower part of the soil is occupied by kankar because of calcium content.

23. Where is the forest soil found? How does the texture vary according to the environment?

Ans: Forest soils are found in hilly and mountainous areas where rainforests are available. The soil texture is different depending on the mountain environment where they are found.

a) In the valley sides the soil is loamy and silty.

b) It is coarse in the upper slopes.

c) In the snow covered areas of Himalayas, where there is very little vegetation the soil is acidic with low humus content.

d) The soil found in the lower parts of the valley is fertile.

24. What is soil erosion? Write two human activities that lead to soil erosion.

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.

25. What does sustainable economic development mean? How can we eradicate irrational consumption and over-utilisation of resources?

Ans: Sustainable economic development means that development should take place without damaging the environment and development in the present should not compromise with the needs of the future generation.

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

I. Long Answer Type Questions. (5 marks each)

1. Describe any five distinct characteristics of 'Arid Soils'.

Ans: i) Arid soils range from red to brown in colour.

ii) These are sandy in texture and saline in nature.

iii) Due to dry climate and high temperature, evaporation is faster. These soils lack humus and moisture.

iv) These soils are occupied by Kankar. Kankar layer formations in the bottom horizons restrict the infiltration of water.

v) After proper irrigation, these soils become cultivable.

2. Why is soil considered as a resource? Explain with five arguments.

Ans. i)Soil is considered as a resource because it is used to satisfy our needs.

ii) It is the most important renewable natural resource.

iii) It is the medium of plant growth.

iv) It is home to innumerable forms of living organisms on earth.

v) It is the base of our life.

3. What are resources? Explain any four factors for resources development in India.

Ans. Resources are objects in the environment, which are technologically accessible, economically feasible and culturally acceptable, and fulfil the basic needs of man.

The factors responsible for resource development in India are as follows.

a) The availability of resources is a necessary condition for the development of any region or state.
b) Resources can contribute to development only when they are accompanied by appropriate technology and institutional changes.
c) Resource development also involves quality of human resources.
d) India has vast natural resources. After independence concerted efforts were made through Five year plans for the overall development of the economy.

5. How are human beings an essential component of resources? Classify the resources.

Ans: Human beings are an essential component of resource because they transform materials available in the environment into resources and use them. The resources can be classified in the following ways:

a) On the basis of origin – Biotic & Abiotic
b) On the basis of exhaustibility – Renewable and Non-renewable
c) On the basis of ownership _ Individual, community , national and international
d) On the basis of status of development – potential, developed, stock and reserves.

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

Ans: Resource planning is a comples process which involves:

a) Identification of resources across the country through surveying, mapping and preparation of inventory of resources through their quantitative and qualitative estimation and measurement.
b) Develop a planning structure for resource development taking into account technology, skill and infrastructure available for implementing the plans.
c) 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 a 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.

7. What is the need for conservation of resources? Elucidate in the light of Gandhi'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 the haves an the 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.

Gandhi 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 are 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. And 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 resource can also help tackle ecological crises of global level.

8. Explain any four human activities which are mainly responsible for land degradation in India.

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:

a) In states like Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha deforestation due to mining have caused severe land degradation, Mining sites are dug, drilled and abandoned after excavation work is over, leaving the land overburdened and in a highly degraded state.

b) Mineral processing like grinding of limestone for cement industry and calcite and soapstone for ceramic industry generate huge quality 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.

c) In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra overgrazing is one of the main reasons for land degradation.

d) 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.

9. Distinguish between red and laterite soils stating five points of distinction.

Ans.

Red Soil	Laterite Soil
a) It is formed due to weathering of igneous and metamorphic rocks. b) It is highly porous and less fertile but where it is deep, it is fertile. c) It is less crystalline d) It is red in colour due to the presence of iron in it. e) It is found in eastern and southern parts of Deccan plateau, Chhattisgarh, Odisha, southern parts of middle Ganga plain and along the piedmont zone of Western Ghats.	a) It is formed by the leaching process in the tropical areas of heavy rainfall. b) It is humus rich in deciduous and evergreen forests, but under sparse vegetation and in semi-arid environment it is humus poor. c) It is crystalline. d) It is red in colour due to little clay and much gravel of red sandstones. e) It is found in hills of the Tamil Nadu, Karnataka, Kerala Odisha, Western Ghats region of Maharashtra, North east regions.

10. 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 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 undr 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:

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

b) Terrace cultivation of 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.

c) 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.

I. Competency Based Questions. (4 marks each)

Case Based MCQs

I. Read the extract and answer the questions that follow:

Resources are vital for human survival as well as for maintaining the quality of life. It was believed that resources are gifts of nature. As a result, human beings used them indiscriminately and this has led to the following major problems:

- Depletion of resources for satisfying the greed of a few individuals.
- Accumulation of resources in a few hands, which, in turn, divided the society into two segments, i.e., haves and have-nots or rich and poor.
- Indiscriminate exploitation of resources has led to global ecological crisis such as, the global warming, ozone layer depletion, environmental pollution and land degradation.

Equitable distribution of resources has become essential for sustained quality of life and global peace. If the present trend of resource depletion by a few individuals and countries continues, the future of our planet is in danger.

Therefore, resource planning is essential for sustainable existence of all forms of life. sustainable existence is a component of sustainable development.

Answer the following MCQs by choosing the most appropriate option:

1. Resources are vital for human survival as well as for maintaining the quality of _____.

a) Work **b) Life**

c) Peace d) Happy

2. _____ existence is a component of sustainable development.

a) Sustainable b) Mutual

c) Cooperative d) Happy

3. Resource _____ is essential for sustainable existence of all forms of life.

a) Planning b) maintenance

c) development d) existence

4. Which of the following crisis occurs due to exploitation of resources?

a) Global warming b) Afforestation

c) Soil conservation d) all of these

II. Read the extract given below and answer the questions that follow:

We have shared our land with the past generations and will have to do so with the future generations too. Ninety-five per cent of our basic needs for food, shelter and clothing are obtained from land. Human activities have not only brought about degradation of land, but have also aggravated the pace f natural forces to cause damage to land.

Some human activities such as deforestation, overgrazing, mining and quarrying too have contributed significantly to land degradation.

Mining sites are abandoned after excavation work is complete leaving deep scars and traces of over-burdening. In states like Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha deforestation due to mining has caused severe land degradation. In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra overgrazing are one of the main reasons for land degradation. In the states of Punjab, Haryana, and western Uttar Pradesh, over-irrigation responsible for land degradation due to water logging leading to increase in salinity and alkalinity in the soil. The mineral processing like grinding of limestone for cement industry and calcite and soapstone for ceramic industry generate huge quantity of dust in the atmosphere. It retards the process of infiltration of water into the soil after it settles down on the land. In recent years, industrial effluents as waste have become a major source of land and water pollution in many parts of the country.

Answer the following MCQs by choosing the most appropriate option:

1. With whom do we share our land?

a) Enemies
b) Oceans and seas
c) China
d) Past and future generations

2. Name some Indian states which are deforested due to mining and overgrazing activities.

a) Jharkhand, Chhattisgarh
b) Karnataka, Kerala
c) Ladakh and Kashmir
d) Lakshadweep

3. What harm does the mineral processing and cement industry do to the environment and land?

a) Helps in growing of trees
b) Generates huge quantity of dust in the atmosphere
c) Kills animals
d) None of these

4. Which of the following activities leads to land degradation?

a) Quarrying
b) Mining
c) Afforestation
d) Both 'A' and 'B'

III. Read the passage below and answer the following questions:

Everything available in our environment which can be used to satisfy our needs, provided, it is technologically accessible, economically feasible and culturally acceptable can be termed as 'Resource'. The process of transformation of things available in our environment involves and interactive relationship between nature, technology and institutions. Human beings interact with nature through technology and create institutions to accelerate their economic development.

1. Which available "thing" in our environment can be termed as "resource"?

a) Thing which can be used to satisfy our needs
b) Things which is technologically accessible and economically feasible
c) Thing which satisfy our needs and culturally acceptable
d) Thing which can be used to satisfy our needs, technologically accessible, economically feasible and culturally acceptable.

2. Which one of the following statements is incorrect regarding resources?

a) Resources are free gifts of nature.
b) Resources are a function of human activities.
c) Human beings themselves are essential components of resources.

d) Resources are vital for human survival as well as for maintaining the quality of life.

3. Who transform material available in our environment into resources and use them?

a) Technology **b) Human beings**

c) Institutions d) nature

IV. Read the passage below and answer the following questions:

An equitable distribution of resources has become essential for a sustained quality of life and global peace. If the present trend of resource depletion by a few individuals and countries continuous, the future of our planet is in danger. Therefore, resource planning is essential for sustainable existence of all forms of life. Sustainable existence is a component of sustainable development.

1. Which of the following problems is a result of indiscriminate use of resource by human beings?

a) Depletion of resources

b) Division of the society into two segments i.e. haves and have nots

c) Global ecological crises

d) All of the above

2. Indiscriminate exploitation of resources has led to which global ecological crises?

a) Global warming b) Ozone layer depletion and land degradation

c) Environmental pollution **d) All of the above**

3. What do you understand by resource planning?

a) Strategy for judicious use of resources

b) Tool to check the availability of resources

c) A complex technology to save resources

d) Method to make every area self-sufficient in terms of resources

4. What is the meaning of sustainable development?

a) Development which concern about the needs of the present generation only

b) Development should take place without any concern about the environment

c) Development should take place without damaging the environment, and development on the present should not compromise with the needs of the future generations

d) Development should focus only on increasing the national income and exhaust all the resources in the present

5. Which report introduced the concept of sustainable development?

a) Rio Commission Report, 1992

b) Brundtland Commission Report, 1987

c) Brettonwood Commission Report, 1987

d) Copenhagen Commision Report, 1990

V. Read the passage below and answer the following questions:

Planning is the widely accepted strategy for judicious use of resources. It has importance in a country like India, which has enormous diversity in the availability of resources. There are regions which are rich in certain types of resources but are deficient in some other resources. There are some regions which can be considered self-sufficient in terms of the availability of resources and there are some regions which have acute shortage of some vital resources.

1. Which one of the following states has abundance of water resources but lacks in infrastructural development?

a) Arunachal Pradesh b) Rajasthan c) Delhi d) Chandigarh

2. In spite of very rich cultural heritage, in which of the following resources Ladakh is deficient?

a) Water

b) Infrastructure

c) Some vital minerals

d) All of the above

3. At which level there is a need of balanced resource planning as India has enormous diversity in the availability of resources?

a) At the national level

b) At the state level

c) At the regional and local levels

d) All of the above

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

a) First Five Year Plan

b) Second Five Year Plan

c) Fourth Five Year Plan

d) Sixth Five Year Plan

VI. Read the passage below and answer the following questions:

Soil is most important renewable natural resource. It is the medium of plant growth and support different types of living organisms on the earth. The soil is a living system. It takes millions of years to form soil up to a few cm in depth. Relief, parent rock or bed rock, climate, vegetarian and other forms of life and time are important factors in the formation of soil. Various forces of nature such as change in temperature, actions of running water, wind and glaciers, activities of decomposers etc. Contribute to the formation of soil.

a) What factors help in the formation of soil?

b) name the two major soil types found in India.

c) How do human activities and natural forces cause soil erosion?

Ans.

a) Factors that help in the formation of soil are:
   - Relief, parent rock or bed rock. Climate, vegetation and other forms of life and time are important factors in the formation of soil.
   - Various forces of nature such as change in temperature, actions of running water, wind and glaciers, activities of decomposers, etc. Contribute to the formation of soil.
   - Chemical and organic changes which take place in the soil and equally important.

b) Two major soil types found in India are:

   i) Alluvial

   ii) Black soil

c) 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.

VII. Read the passage below and answer the following questions:

This type of soil is typical of the Deccan trap (Basalt) region spread over northwest Deccan plateau and is made up of lava flows. They cover the plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and extend in the south east direction along the Godavari and the Krishna valleys.

a) Identity the type of soil.

b) What factors has led to the formation of the above soil?

c) Name the crop for which this soil is ideal.

Ans.

a) The type of soil is Black Soil.

b) Climatic condition along with the parent rock material are important factors for the formation of Black soil. It is also made up of lava flows.

c) Cotton.

Case Based Subjective Questions

1. Read the case study given below and answer the questions that follow:

Arid soils range from red to brown in colour. They are generally sandy in texture and saline in nature. In some areas the salt content is very high and common salt is obtained by evaporating the water. Due to the dry climate, high temperature, evaporation is faster and the soil lacks humus and moisture. The lower horizons of the soil are occupied by Kankar because of the increasing calcium content downwards. The Kankar layer formations in the bottom horizons restrict the infiltration of water. After proper irrigation these soils become cultivable as has been in the case of western Rajasthan.

1. **How can arid soil be identified?**

Arid soil is sandy in texture, saline in nature, restricts the filtration of water and it lacks humus and moisture.

2. **Which crops are grown on arid soil?**

Drought and saline-tolerant crops such as wheat, cotton, corn (maize), millets, pulses, and barley can be grown on arid soil.

3. **Where is arid soil found in India?**

In India, the arid soil is mainly found in parts of Western Rajasthan, Haryana and Punjab and extends up to the Rann of Kutch in Gujarat.

4. **What restricts the infiltration of water in arid soil?**

In desert, lower horizons of soil is occupied by kankar layer due to increased movement of calcium content downward and this kankar layer in the bottom horizons restricts the infiltration of water.

II. Read the case study given below and answer the questions that follow:

Total geographical area of India is 3.28 million sq km. Land use data, however, is available

only for 93 per cent of the total geographical area because the land use reporting for most of the north-east states except Assam has not been done fully. Moreover, some areas of Jammu and Kashmir occupied by Pakistan and China have also not been surveyed.

The land under permanent pasture has also decreased. How are we able to feed our huge cattle population on this pasture land and what are the consequences of it? Most of the, other than the current fallow lands, are either of poor quality or the cost of cultivation. The pattern of net sown area varies greatly from one state to another. It is over 80 per cent of the total area in Punjab and Haryana and less than 10 per cent in Arunachal Pradesh, Mizoram, Manipur and Andaman Nicobar Islands.

1. Why is it important to collect land use data?

Land use data is used as basic information for sustainable management of natural resources; they are increasingly needed for the assessment of impacts of economic development on the environment.

2. What is permanent pasture land?

Permanent pastures are those pastures which are either grown naturally or by man for grazing purposes.

3. Why has the land under permanent pasture decreased?

Land under permanent pasture is decreasing due to increase of population in an uncontrollable rate, demand for food, land for houses, etc., are increasing. Hence, people have started using the pastoral land for making their house or using it as an agricultural land.