GEOGRAPHY

Resources and Development

Fastrack Revision

- 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'.
- Human beings interact with nature through technology and create institutions to accelerate their economic development.
- Resources are a function of human activities. Human beings themselves are an essential component of resources. They transform material available in our environment into resources and use them.
- Resources can be classified in the following ways:
  - On the basis of origin, biotic and abiotic
  - On the basis of exhaustibility- renewable and non-renewable resources.
  - On the basis of ownership, individual, community, national and international
  - On the basis of status of development, potential, developed stock and reserves.
- Sustainable development is development that should take place without damaging the environment and the interests of the future generations.
- Agenda 21 aims at achieving global sustainable development, combating environmental damage, poverty, disease through global co-operation on common interests, mutual needs and shared responsibilities.

Knowledge BOOSTER

The first International Earth Summit held in Rio de Janeiro in 1992 endorsed global Forest Principles and adopted Agenda 21 for achieving sustainable development.

- Planning is needed for judicious use of resources. India uses a three-step complex process for resource planning. It also pays attention towards conservation of resources.
- In 1987, the Brundtland Commission Report introduced the concept of sustainable development and advocated it as a means of resource conservation.
- Land is an important natural resource which supports natural vegetation, wildlife, economic activities, transport, construction activities, etc. India has a total land area of 3.28 million sq. km.
- James Augustus Hickey began to edit the Bengal Gazette, a weekly magazine that described itself as 'a commercial paper open to all, but influenced by none'.
- Soil is the most important renewable natural resource. Soils are of different types as under:
  - **Alluvial soil** is very fertile and is ideal for the growth of sugarcane, paddy, wheat, etc. It is found in India in the Northern and Eastern coastal plains and in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri (Cauvery) rivers.
  - **Black soil** or regur soil is well known for its capacity to hold moisture. This soil is rich in calcium carbonate, magnesium, potash and lime. It is ideal for growing cotton and is found in the plateaus of Maharashtra, Malwa, Madhya Pradesh, etc.
  - **Red and yellow soils** are found mainly in parts of Odisha, Chhattisgarh and Western Ghats. These soils develop a reddish colour due to diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form.
  - **Laterite soil** develops in areas of high temperature and heavy rainfall. The humus content of this soil is low because most of the microorganisms get destroyed due to high temperature. It is mainly found in Karnataka, Tamil Nadu, Kerala, Madhya Pradesh and hilly areas of Odisha and Assam. It is used for growing tea, coffee, cashew nut, etc.
  - **Desert or arid soil** is sandy in texture and saline in nature. It lacks humus and moisture. It is mainly found in Rajasthan.
  - **Forest or mountain soil** is found in hilly and mountainous areas where rain forests are present. It is loamy and silty in valley sides and coarse grained in the upper slopes.
- The denudation of soil cover and subsequent washing down is described as soil erosion. It adversely affects the top soil and hence agricultural productivity.
- The following methods can be used for soil conservation:
  - Contour ploughing
  - Terrace cultivation
  - Strip cropping
  - Shelter belts

Knowledge BOOSTER

Ploughing along the contour lines can decelerate the flow of water down the slopes. This is called contour ploughing.

Practice Exercise

Multiple Choice Questions

Q 1. On the basis of its origin, resources can be classified into:

a. renewable and non-renewable
b. continuous and biological
c. biotic and abiotic
d. recyclable and non-recyclable

TiP

Students should remember the types of resources on various bases for their easy classification.

Q 2. How can the resources be classified on the basis of their status of development?

a. Biotic and abiotic
b. Renewable and non-renewable
c. Individual and community
d. Potential, developed stocks and reserves

Q 3. Which among the following is not a problem of resource development? *(CBSE 2021 Term-1)*

a. Depletion of resources for satisfying the greed of few individuals
b. Accumulation of resources in few hands
c. Indiscriminate exploitation of resources
d. An equitable distribution of resources

Q 4. The Rio Convention endorsed the Global Forest Principles and adopted which of the following for achieving sustainable development in the 21st century?

a. Agenda 21 b. Agenda 22
c. Agenda 20 d. Agenda 25

Q 5. Which one of the following conferences was convened to discuss environmental protection and socio-economic development at the global level in 1992? *(CBSE SQP 2021 Term-1)*

a. Kyoto Protocol
b. Montreal Protocol
c. Rio de Janeiro Earth Summit
d. World Summit on Sustainable Development

Q 6. Why do we need resource planning?

a. Because of enormous diversity in the availability of resources.
b. Because we need to think of future generations.
c. Because we need to consider materials in the environment which have the potential to satisfy human needs.
d. There is need to collect materials and resources and then using them accordingly.

Q 7. Which one of the following statements refers to the sustainable development?

a. Overall development of various resources.
b. Development should take place without damaging the environment.
c. Economic development of people.
d. Development that meets the desires of the members of all communities.

Q 8. Arrange the following in the correct sequence land degradation by %:

(i) Forest degraded area
(ii) Water eroded area
(iii) Wind eroded area
(iv) Saline and alkaline deposits

a. (i). (iii). (iv). (ii) b. (ii). (i). (iii). (iv)
c. (i). (ii). (iv). (iii) d. (ii). (iii). (iv). (i)

TiP

Decide the correct percentage of land degradation in all the areas and find the correct sequence.

Q 9. Which one of the following is the main cause of land degradation of Punjab? *(NCERT)*

a. Intensive cultivation b. Deforestation
c. Over-irrigation d. Overgrazing

Q 10. In which one of the following states is overgrazing the main reason for land degradation ? *(CBSE 2021 Term-1)*

a. Maharashtra b. Punjab
c. Haryana d. Uttar Pradesh

Q 11. Which one of the following human activities has contributed most in land degradation? *(CBSE 2021 Term-1)*

a. Deforestation b. Overgrazing
c. Mining d. Over-Irrigation

Q 12. Deforestation due to mining has caused severe land degradation in which one of the following states? *(CBSE 2021 Term-1)*

a. Odisha b. Tamil Nadu
c. Kerala d. Gujarat

Q 13. 'There is enough for everybody's need but not for any body's greed'. Who said this?

a. Jawaharlal Nehru
b. Atal Bihari Vajpayee
c. Mohandas Karamchand Gandhi
d. Sunderlal Bahuguna

Q 14. Arunachal Pradesh has abundant water resources but lacks:

a. in mineral resources
b. in infrastructural development
c. in technology
d. None of the above

Q 15. The piece of land left uncultivated for the past 1 to 5 agricultural years is called .....

(CBSE SQP 2021 Term-1)

a. Barren land b. Forest land
c. Grazing land d. Fallow land

Q 16. Which of the following book includes 'Gandhian Philosophy' on conservation of resources?

a. Small is beautiful
b. Our common future
c. Both a. and b.
d. None of these

Knowledge BOOSTER

In 1974, Gandhian Philosophy was presented by Schumacher in his book 'Small is Beautiful'.

Q 17. 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

Q 18. Identify the soil which ranges from red to brown in colour and saline in nature: *(CBSE 2021 Term-1)*

a. Red soil
b. Laterite soil
c. Arid soil
d. Alluvial soil

Q 19. Why do red soils develop a reddish colour?

a. Iron occurs in a hydrated form.
b. There is adequate proportion of potash and lime.
c. Presence of increased calcium content.
d. Diffusion of iron in crystalline and metamorphic rocks.

Q 20. Which of the following soil is more common in piedmont plains such as Duars, Chos and Terai?

a. Black soil
b. Laterite soil
c. Alluvial soil
d. Red soil

Q 21. The lower horizons of the arid soil is occupied by Kankar due to increasing:

a. calcium content
b. potash content
c. lime, potash and phosphorus content
d. phosphorus content

Q 22. In which one of the following states is terrace cultivation practised?

a. Punjab
b. Plains of Uttar Pradesh
c. Haryana
d. Uttarakhand

Knowledge BOOSTER

In hilly areas, steps can be cut out on the slopes making terraces on which terrace cultivation is practised.

Q 23. Ploughing along the contour lines to decelerate the flow of water down the slopes is called:

a. strip cropping
b. sheet erosion
c. contour ploughing
d. terrace cultivation

Q 24. Match the following efforts of resource conservation from Column I with years from Column II.

Column I	Column II
A. The club of Rome advocated resource conservation.	1. 1992
B. Gandhian Philosophy presented in 'Small is Beautiful'.	2. 1987
C. Brundtland Commission Report on sustainable development.	3. 1974
D. Earth Summit at Rio de Janeiro.	4. 1968

	A	B	C	D
a.	4	3	2	1
b.	3	4	2	1
c.	2	3	4	1
d.	4	2	3	1

Q 25. Indiscriminate exploitation of resources has led to global ecological crises. Which of the following is not associated to this statement?

a. Global warming
b. Ozone layer maintenance
c. Environmental pollution
d. Land degradation

Q 26. Which one of the following forces leads to maximum soil erosion in plains? *(CBSE 2021 Term-1)*

a. Wind
b. Glacier
c. Running water
d. Earthquake

Q 27. Identify the soil with the help of clues given below: *(CBSE SQP 2021 Term-1)*

(i) develops in areas with high temperature and heavy rainfall.
(ii) is low in humus content.
(iii) found in the hilly areas of Karnataka, Kerala and Tamil Nadu.

a. Forest soil
b. Yellow soil
c. Black soil
d. Laterite soil

Q 28. Which of the following categories of resources can we put Tidal energy in? *(CBSE SQP 2021 Term-1)*

a. Renewable resources
b. Non-renewable resources
c. Actual resources
d. Potential resources

Q 29. Identify the soil with the help of the following Clues:

(i) Sandy in texture
(ii) Lacks humus and moisture
(iii) Requires dry climate and high temperature

a. Laterite soil
b. Black soil
c. Alluvial soil
d. Desert soil

Q 30. Which of the following is not a measure to reduce soil erosion?

a. Creating deep channels (gullies)
b. Contour ploughing
c. Strip cropping
d. Planting of shelter belts

Knowledge BOOSTER

Gullies make it easy for the soil to get eroded by running water which result in a bad land topography known as ravines. Chambal river basin in Madhya Pradesh is famous for such ravines or bad lands.

Q 31. Which of the following is correctly matched? *(CBSE 2023)*

a. Alluvial Soil — Consist of sand and silt
b. Black Soil — Salt content is high
c. Arid Soil — Diffusion of iron in crystalline
d. Laterite Soil — Made up of lava flows

Q 32. 'M' gave his friend clues about a type of soil that suits for growing cotton. Which of the following clues provided by 'M' would be most useful in identifying the ideal type of soil? *(CBSE SQP 2023-24)*

Clues:

(i) It is well-known for its capacity to hold moisture.
(ii) It turns yellow when it is hydrated.
(iii) It is rich in kankur and bhangar nodules.
(iv) It is a well-drained loamy soil.

a. Clue (I) b. Clue (I) and (III)
c. Clue (I) and (ii) d. Clue (iv)

Q 33. Consider the statement given below and choose the correct answer:

Statement (I): Land is a resource of utmost importance.

Statement (II): Land can be used for various purposes like agriculture and industry.

a. Statement (I) is correct and (II) is incorrect.
b. Statement (I) is incorrect and (II) is correct.
c. Both statements are incorrect.
d. Both statements are correct.

Q 34. Read the following statements carefully and choose the correct option:

Statement (I): The black soils are made up of extremely fine *i.e.*, clayey material.

Statement (II): They are well known for their capacity to hold moisture.

a. Statement (I) is correct and (II) is incorrect.
b. Statement (I) is incorrect and (II) is correct.
c. Both statements are incorrect.
d. Both statements are correct.

Q 35. Read the following statements carefully and choose the correct option:

Statement (I): Alluvial soils are very fertile.

Statement (II): Mostly these soils contain half proportion of potash, phosphoric acid and lime.

a. Statement (I) is correct and (II) is incorrect.
b. Statement (I) is incorrect and (II) is correct.
c. Both statements are incorrect.
d. Both statements are correct.

Assertion & Reason Type Questions

Directions (Q.Nos. 36–43): *In the following questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:*

a. Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 36. 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.

Q 37. Assertion (A): Resource planning is not an easy process in India.
Reason (R): Resource planning involves planning structure, identification and inventory of resource across the regions.

TiP

Resource planning is not an easy but a very complex process as it involves surveying, mapping, quantitative and qualitative estimation and measurement of the resources.

Q 38. Assertion (A): Land is a natural resource supporting natural vegetation, wildlife, economic activities, transport and communication systems.
Reason (R): It is important to use the available land for various purposes with careful planning.

Q 39. Assertion (A): Processes of soil formation and erosion goes simultaneously and creates a balance between the two.
Reason (R): The denudation of the soil cover and subsequent washing down is soil erosion.

TiP

Soil formation and erosion goes simultaneously but this balance is disturbed due to human activities like deforestation, over-grazing, construction, mining and natural forces like wind, glacier and water leading to soil erosion.

Q 40. Assertion (A): Black soil is considered ideal for growing cotton.
Reason (R): Black soil is rich in soil nutrients such as calcium carbonate, magnesium, potash and lime.

Q 41. Assertion (A): Arid soil is unsuitable for cultivation.
Reason (R): Arid soil is generally sandy in texture and saline in nature. It restricts the filtration of water.

TiP

Due to dry climate and high temperature, evaporation is faster and the soil lacks humus and moisture that is why it becomes unfit for cultivation.

Q 42. Assertion (A): Controlling of mining activities doesn't control land degradation.
Reason (R): In states like Gujarat, Rajasthan, Madhya Pradesh, deforestation has occurred due to mining.

TiP

Activities of mining controls land degradation because mining sites are abandoned after excavation work, this results in over-burdening, Mining activities in the mentioned states has much contribution to deforestation.

Q 43. Assertion (A): Terrace cultivation does not restrict erosion.
Reason (R): Running water cuts through the clayey soils and makes deep channels as gullies which makes cultivation of crops impossible in those lands.

TiP

Terraces, out on slopes in the form of steps breaks up the force of the wind, thus preventing erosion. Gullies render cultivation in those lands impossible.

Answers

1. (c)	**2.** (d)	**3.** (d)	**4.** (a)	**5.** (c)
6. (a)	**7.** (b)	**8.** (b)	**9.** (c)	**10.** (a)
11. (a)	**12.** (a)	**13.** (c)	**14.** (b)	**15.** (d)
16. (a)	**17.** (d)	**18.** (c)	**19.** (d)	**20.** (c)
21. (a)	**22.** (d)	**23.** (c)	**24.** (a)	**25.** (b)
26. (c)	**27.** (d)	**28.** (a)	**29.** (d)	**30.** (a)
31. (a)	**32.** (a)	**33.** (d)	**34.** (d)	**35.** (a)
36. (b)	**37.** (c)	**38.** (b)	**39.** (c)	**40.** (a)
41. (c)	**42.** (d)	**43.** (d)		

Source Based Questions

Source 1

Read the source given below and answer the questions that follow by choosing the most appropriate option:

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. For example, the states of Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal deposits. Arunachal Pradesh has abundance of water resources but lacks in infrastructural development. The state of Rajasthan is very well endowed with solar and wind energy but lacks in water resources. The cold desert of Ladakh is relatively isolated from the rest of the country. It has very rich cultural heritage but it is deficient in water, infrastructure and some vital minerals. This calls for balanced resource planning at the national, state, regional and local levels.

Q 1. Which of the following statements correctly describes about resource planning?
a. Identification and quantification of available resources.
b. Development of available resources.
c. Both a. and b.
d. Uneven distribution of resources.

Q 2. Resource planning is important in a country like India due to:
a. enormous diversity in availability of resources
b. deficiency in certain types of resources
c. abundance of water resources
d. rich cultural heritage

Q 3. The state(s) which is/are rich in minerals and coal deposits is/are:
a. Jharkhand b. Chhattisgarh
c. Madhya Pradesh d. All of these

Q 4. The states like Jharkhand, Madhya Pradesh are rich in coal and minerals but have less development in resources as:
a. they are economically less developed
b. they have rich cultural heritage
c. they lack water resources
d. they lack technological and institutional support

Q 5. Resource planning is essential for ..... existence of all forms of life.
a. ecological balance b. sustainable
c. exploitation d. None of these

Q 6. What does resource planning in India involve?
a. Defining the number of resources.
b. Surveying, mapping and qualitative and quantitative estimation and measurement of the resources.
c. Taking government permission.
d. Matching the resource development plans with overall national development plans.

Answers

1. (c) **2.** (a) **3.** (d) **4.** (d) **5.** (a) **6.** (b)

Source 2

Read the source given below and answer the questions that follow by choosing the most appropriate option:

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 of natural forces to cause damage to land. Some human activities such as deforestation, overgrazing, mining and quarrying too have contributed significantly in 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 have caused severe land degradation. In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra, overgrazing is one of the main reasons for land degradation.

In the states like Punjab, Haryana, Western Uttar Pradesh, over irrigation is responsible for land degradation due to water logging leading to increase in salinity and alkalinity in the soil.

Q 1. Most of the basic needs for food, shelter and clothing are obtained from:

a. land b. human activities
c. mining d. land degradation

Q 2. Deforestation due to mining have caused severe land degradation in the state of:

a. Jharkhand b. Uttar Pradesh
c. Punjab d. Haryana

Q 3. Over irrigation is responsible for land degradation due to the following reason:

a. deforestation and over-grazing
b. increase in alkalinity of the soil
c. water logging leading to increase in salinity in soil
d. None of the above.

Q 4. Human is considered as the main culprit for land degradation because:

a. of his excavation work at mining sites.
b. of his significant contribution to deforestation.
c. he has aggravated the pace of natural forces causing damage to land.
d. All of the above

Q 5. The main cause of land degradation of Punjab, Haryana and Western Uttar Pradesh is:

a. mining b. over irrigation
c. deforestation d. over-grazing

Q 6. Two statements are marked as Assertion (A) and Reason (R). Read the statements and select the correct option:

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

Reason (R): Land can be used for various purposes.

a. Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Answers

1. (a) 2. (a) 3. (c) 4. (d) 5. (b) 6. (a)

Source 3

Read the source 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 of natural forces to cause damage to land.

Some human activities such as deforestation, overgrazing, mining and quarrying too have contributed significantly in 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 have caused severe land degradation. In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra, over-grazing is one of the main reasons for land degradation.

In the states like Punjab, Haryana, Western Uttar Pradesh, over irrigation is responsible for land degradation due to water logging leading to increase in salinity and alkalinity in the soil.

Q 1. How does human activities have brought about land degradation?

Ans. Human activities have brought about land degradation through the factors like deforestation, over-grazing, mining and quarrying.

Q 2. How is over irrigation responsible for land degradation?

Ans. Over irrigation is responsible for land degradation due to water logging leading to increase in salinity in soil.

Q 3. Why is human considered as the main culprit for land degradation?

Ans. Human is considered as the main culprit for land degradation due to the following reasons:

(i) His excavation work at mining sites.
(ii) His significant contribution to deforestation.
(iii) He has aggravated the pace of natural forces causing damage to land. (Any two)

Very Short Answer Type Questions

Q 1. Classify resources on the basis of origin. *(CBSE 2018)*

Ans. On the basis of origin, resources are classified as: biotic and abiotic resources.

Q 2. What is meant by sustainable development?

Ans. Sustainable development is the development that should take place without damaging the environment and the development in the present should not compromise with the needs of the future generations.

Q 3. What is the main cause of land degradation in Punjab?

Ans. Over irrigation is the main cause of land degradation in Punjab.

TiP

Write the main cause related to Punjab only and not the other ones.

Q 4. How is over irrigation responsible for land degradation in Punjab? *(CBSE 2019)*

Ans. Due to over irrigation in Punjab, the alkalinity of soil increases which makes it infertile and makes the soil unsuitable for cultivation. This leads to land degradation in Punjab.

Q 5. How are mining activities responsible for land degradation in Jharkhand? *(CBSE 2019)*

Ans. Mining sites are abandoned after excavation work is complete leaving deep scars and traces of overburdening. So, deforestation due to mining have caused land degradation in Jharkhand.

Q 6. How is cement industry responsible for land degradation? *(CBSE 2019)*

Ans. Mineral processing like grinding of limestone for cement industry generates huge quantity of dust in the atmosphere. It retards the process of infiltration of water into the soil leading to land degradation.

Q 7. In which states has mining caused severe land degradation?

Ans. States like Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha have suffered from severe land degradation.

Q 8. Which type of soil in India is most widespread and important? *(CBSE 2019)*

Ans. Alluvial soil is the most widespread and important in India.

Q 9. Which type of soil is most suitable for growing the crop of cashew nut? *(CBSE 2019)*

Ans. Red laterite soil is most suitable for growing the crop of cashew nut.

Q 10. Name three states having black soil.

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

Q 11. Which soil is most retentive of moisture?

Ans. Black soil retains the most moisture.

Q 12. Which soil type is the result of intense leaching due to heavy rainfall?

Ans. Laterite soil is the result of intense leaching due to heavy rainfall.

Q 13. Why soil in some parts is red and yellow in colour ?

Ans. The soil that develops on crystalline and metamorphic rocks have iron diffused in it which makes the soil red. It turns yellow when the diffusion of iron occurs in hydrated form.

Q 14. What is leaching ? Which soil is developed due to it?

Ans. Leaching is a process by which soil nutrients get washed away by heavy rains. Due to leaching, laterite soil is developed.

Q 15. How the arid soil can be distinguished from other soils?

Ans. Arid soils have kankar layers that is increase in calcium content in the lower horizons.

Q 16. Name the land with deep channels that is unfit for cultivation.

Ans. Bad land is unfit for cultivation.

Q 17. What are the methods of checking soil erosion?

Ans. Strip cropping, terrace farming and contour ploughing are the methods of checking soil erosion.

Q 18. Highlight the importance of contour ploughing. *(CBSE 2019)*

Ans. Contour ploughing helps in the prevention of soil erosion caused by wind and water.

Q 19. Give an example of gully erosion.

Ans. Gully erosion is witnessed in the Chambal basin where such lands are called ravines.

Knowledge BOOSTER

Ravine is a small narrow steep sided valley that is larger than a gully and is usually worn by running water.

Q 20. What is the role of terrace cultivation in hilly areas?

Ans. Terrace cultivation is practised in hilly areas along the line of slope and reduces the speed of water and ultimately avoids soil erosion.

Short Answer Type Questions

Q 1. How can we classify resources?

Ans. Resources can be classified in the following ways:

(i) **On the Basis of Origin:** Biotic and abiotic resources.

(ii) **On the Basis of Exhaustibility:** Renewable and non-renewable resources.

(iii) **On the Basis of Ownership:** Individual, community owned, national and international resources.

(iv) **On the Basis of Status of Development:** Potential, developed, reserved and stock resources. (Any three)

Q 2. 'India is rich in certain types of resources but deficient in some other resources.' Support your answer with examples.

OR

'India has enormous diversity in the availability of resources.' Explain.

Ans. The examples that support the statement are:

(i) The states of Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal deposits but lack infrastructure.

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

(iii) The state of Rajasthan is very well endowed with solar and wind energy, but lacks in water resources.

(iv) The cold desert of Ladakh has a very rich cultural heritage, but it is deficient in water, infrastructure and some vital minerals.

(Any three)

Q 3. What problems have been caused by human beings using resources indiscriminately? *(CBSE 2019)*

Ans. The indiscriminate use of resources have caused the following problems to human beings:

(i) The excessive use of resources have depleted their stock throughout the world.

(ii) Resources have accumulated in a few hands that has divided the society into rich and poor *i.e.*, two segments.

(iii) The exploitation of resources has led to global ecological crisis such as global warming, depletion of ozone layer, environmental pollution and land degradation.

Q 4. Describe the importance of judicious use of resources. *(CBSE 2020)*

OR

Why should we use natural resources properly and judiciously? Explain your views. *(CBSE 2019)*

Ans. Judicious use of resources is important because of the following reasons:

(i) Indiscriminate use of resources results in environmental socio and economic problems.

(ii) Resources are available only in limited quantity which are essential for any developmental activity.

(iii) Most of the resources are non-renewable and if exhausted, then they may not be able to be recreated.

Q 5. Explain the role of humans in resource development.

Ans. Role of human beings in development of resources are as follows:

(i) Human beings interact with nature through technology and create institutions to accelerate their economic development.

(ii) Human beings transform material available in environment into resources and use them, *e.g.*, for example river is natural endowment and it becomes a resource when its water is used for irrigation or power production.

(iii) Humans themselves are resources because they use their intelligence to use and to create new resources.

Q 6. How is the issue of sustainability important for development? Explain with examples. *(CBSE 2020)*

OR

'The issue of sustainability is important for development.' Examine the statement.

Ans. The issue of sustainability is important for development because of the following reasons:

(i) It aims at fulfilling the needs of today without compromising the needs of the future generation.

(ii) Sustainability ensures that the growth of the economy is continuous and take care of overall development of the economy with better education, health and sanitation facilities.

(iii) Sustainability puts a check on over usage of resources and promotes protection and conservation of resources for future generation thus maintaining the ecological balance.

(iv) It lays emphasis on environmental protection and check environmental degradation.

Q 7. Why is there a need for the planning of resources?

Ans. The planning of resources is essential for the rational and judicious use of available resources. India with diversity in the availability of resources needs the resource planning the most. The need for planning is due to the following reasons:

(i) It helps to identify the various resources in different regions of country.

(ii) It helps in the conservation of various non-renewable resources.

(iii) It helps in equal distribution of resources among the regions that have acute shortage of it.

(iv) It helps in reducing wastage of resources.

(v) It helps to keep track of remaining resources.

(vi) It helps to take care of future generations.

Q 8. Describe the different steps of resource planning. *(CBSE 2020)*

Ans. Resource planning is a complex process which involves the following steps:

(i) Identification and inventory of resources across the regions of the country. This involves surveying, mapping, qualitative estimation and measurement of the 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.

COMMON ERROR

Students do not explain the stages step-by-step in the answer.

Q 9. Resource planning is a complex process.' Justify the statement with arguments. *(CBSE 2019)*

Ans. The given statement can be justified using the following arguments:

(i) It involves identifying resources which are available in different parts of the country. This is a time consuming process as it involves surveying and mapping various regions of the country. Then, the quality and quantity of the available minerals needs to be estimated.

(ii) Resource planning is a complex process as it involves the use of specialised technology, skill sets and requires setting up institutions for the execution of resource development plans.

(iii) To match and align resource development plans with national development plans is one of the difficult tasks in resource planning.

Q 10. What was the purpose of the Earth Summit held in Rio de Janeiro, Brazil in 1992? What are the principles of Agenda 21?

OR

What is Agenda 21? List its two principles.

(CBSE 2016)

Ans. The first United Nations Conference on Environment and Development was held in Rio de Janeiro, Brazil in 1992 to formulate an Agenda for promoting sustainable development. This convention endorsed the Global Forest Principles and adopted 'Agenda 21' to achieve sustainable development in the 21st century.

Agenda 21 has the following two principles:

(i) To combat environmental damage, poverty, disease through global co-operation on common interests, mutual needs and shared responsibilities.

(ii) Every local government should draw its own local Agenda 21.

Q 11. What steps have been taken at the international level to promote conservation of resources?

Ans. The following steps have been taken to promote conservation of resources at International level:

(i) The Club of Rome advocated resource conservation for the first time in a systematic way, in 1968.

(ii) Another significant contribution was made at the Earth Summit at Rio de Janeiro, Brazil in 1992, which adopted Agenda 21 for achieving sustainable development in the 21st century.

(iii) The seminal contribution with respect to resource conservation at the global level was made by the Brundtland Commission Report, 1987.

Q 12. What are the main factors affecting the soil formation? Explain each factor.

Ans. The main factors affecting the soil formation are as follows:

(i) The bed rock or parent rock on which the soil is formed decomposes and disintegrates under the process of weathering which in turn influence the characteristics of soils.

(ii) Climate influences the rate of weathering of rocks and type of vegetation influencing the soil characteristics.

(iii) Nature of relief and slope influences the accumulation of soil. Mountains have thin soil cover whereas plains have thick soil cover.

(iv) Time provides maturity to soil as layer after layer gets accumulated and lower layer is different in composition than the upper layers.

(Any three)

Q 13. Describe any three main features of 'Alluvial soil' found in India. *(CBSE 2019)*

Ans. The main features of 'Alluvial soil' found in India are:

(i) It is formed by the deposition of the river load as it flows from its upper to its lower course.

(ii) It is a fertile soil as it is rich in minerals, especially potash and lime.

(iii) It is suitable for the growth of a large variety of rabi and kharif crops.

(iv) Alluvial soil is light and porous therefore easily tillable.

(Any three)

Q 14. Describe any three main features of 'Black soil' found in India. *(CBSE 2019)*

Ans. The main features of 'Black soil' found in India are:

(i) Black soil is black in colour and is also known as regur soil. It is typical of the Deccan trap region spread over North-West Deccan Plateau.

(ii) Black soil is ideal for growing cotton and is also known as black cotton soil.

(iii) It is well known for its capacity to hold moisture.

(iv) It is fine textured and is clayey in nature.

(v) It is formed from weathered lava rocks which also give it its black colour.

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

TiP

Do not confuse between North-West Deccan and South-West Deccan where the black soil is found in India.

Q 15. Mention any three features of arid soil. *(CBSE 2015)*

Ans. The following are the features of arid soil:

(i) These have colours ranging from red to brown. They are generally sandy in texture and saline in nature.

(ii) In some areas, the salt content is very high, thus common salt can also be obtained from this soil.

(iii) This soil lacks humus and moisture.

Knowledge BOOSTER

Opening of Indira Gandhi Canal has facilitated farming on this soil.

Long Answer Type Questions

Q 1. How have technical and economic development led to more consumption of resources? *(NCERT)*

Ans. Technical and economic development has led to more consumption of resources in the following manner:

(i) Technological development has converted subsistence agriculture to commercial agriculture and this has led to over-utilisation of soil.

(ii) Dams are built and water is taken to fields to irrigate lands. This results in depletion of water resources.

(iii) Minerals are taken out from the Earth and are used for making machinery and implements.

(iv) Economic development has led to urbanisation and modernisation which demand more resources.

(v) Human beings interact with nature through technology and create institutions to accelerate their economic development.

In other words, technical and economic development naturally leads to more consumption of resources, otherwise they would have remained dormant under the ground.

Q 2. Explain any five human activities which are mainly responsible for land degradation in India.

Ans. The human activities which are mainly responsible for land degradation in India are as follows:

(i) Deforestation due to mining activities in states like Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha have caused severe land degradation. Mining sites are abandoned after excavation work is completed leaving deep scars.

(ii) Overgrazing of land too has contributed significantly in land degradation.

(iii) Mineral processing like grinding of limestone for cement industry as well as calcite and soapstone for ceramic industry generate huge quantities of dust that falls down on land. This retards the process of infiltration of water into the soil.

(iv) Industrial effluents as waste from industries have become a major source of land and water pollution in many parts of the country.

(v) Over irrigation in the states of Punjab, Haryana, Western Uttar Pradesh is responsible for land degradation due to water logging leading to increase in salinity and alkalinity in the soil.

Q 3. What is land degradation? Suggest any four steps to control land degradation.

OR

Suggest any five measures to control land degradation in India. *(CBSE 2015)*

OR

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

Ans. Continuous use of land over a long period of time without taking appropriate measures to conserve and manage it has resulted in land degradation.

Following steps can be taken to control land degradation in India:

(i) Afforestation over deforested areas.

(ii) Proper management of grazing on permanent pastures.

(iii) Growing thorny bushes in areas where desertification has taken place.

(iv) Proper discharge and disposal of industrial effluents after treatment.

(v) Planting of shelter belts.

(vi) Control on mining activities. (Any four)

COMMON ERROR

Students often write causes of land degradation by mistake instead of measures of control.

Q 4. Explain any five types of soils found in India.

Ans. Different types of soils found in India are:

(i) Alluvial Soil: This is the most widespread soil in India. This soil is formed by the deposition of material by the rivers namely the Indus, the Ganga and the Brahmaputra. It is mainly found in the Northern plains and the Eastern Coastal Plains. It is the most fertile soil. Due to high fertility, they are intensively cultivated and are densely populated.

(ii) Black Soil: This soil is black in colour and cotton grows best in this soil. This soil is formed by the weathering of igneous rocks. It is mainly confined to the North-western part of peninsular plateau and the Deccan lava plateau which includes the states of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh.

(iii) Red and Yellow Soils: These soils develop on crystalline igneous rocks in areas of low rainfall in the Eastern and South-eastern parts of the Deccan Plateau. These are rich in iron compounds and are reddish in colour due to diffusion, while these are yellowish in colour when in hydrated form.

(iv) **Laterite Soil:** These soils are formed by intense leaching in tropical regions where both temperature and rainfall are high. This soil is suitable for growing tea and coffee.

(v) **Arid Soil:** This soil is sandy and saline in nature. It lacks humus and moisture. It can be suitable for crop cultivation where irrigation is available. This soil is mainly found in Rajasthan.

(vi) **Forest Soil:** It is found in the hilly and mountainous areas where adequate rain forests are available. In the snow-covered areas, this soil is acidic and has low humus content.

(Any five)

Q 5. What is regur soil? Write its two features. Mention any two regions where regur soil is found. *(CBSE 2016)*

Ans. Black soil is also called as regur soil as it is black in colour.

Two of its features are as follows:

(i) This soil is rich in soil nutrients such as calcium carbonate, magnesium, potash and lime but poor in the phosphorus contents.

(ii) Regur soil is made up of extremely fine *i.e.*, clayey material and is well known for its capacity to hold moisture.

Regur soil is found in the plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and extend in the South-east direction along the Godavari and the Krishna valleys.

Chapter Test

Multiple Choice Questions

Q 1. How can the resources be classified on the basis of their exhaustibility?

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

Q 2. In which of the following states deforestation due to mining have caused severe land degradation?

a. Jharkhand, Madhya Pradesh
b. Gujarat, Rajasthan, Odisha
c. Maharashtra, Chhattisgarh
d. All of the above.

Q 3. Where are red soils mostly found?

a. Deccan Plateau, parts of Odisha
b. Kerala and Karnataka
c. Rajasthan and Gujarat
d. Maharashtra and Madhya Pradesh

Q 4. Read the following clues and name the related soil:

(i) Develops in high rainfall area.
(ii) Intense leaching process takes place.
(iii) Humus content is low.

a. Laterite soil
b. Black soil
c. Desert soil
d. None of the above

Q 5. When the top soil is washed away when water flows as a sheet over large areas down a slope is known as:

a. Land erosion
b. Water erosion
c. Sheet erosion
d. All of these

Assertion and Reason Type Questions

Directions (Q. Nos. 6-7): *In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:*

a. Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 6. Assertion (A): The availability of resources is not the only necessary condition for the development of any region.

Reason (R): Not only availability of resources but also corresponding change in technology is necessary for development of any region.

Q 7. Assertion (A): Alluvial soils as a whole are very fertile.

Reason (R): Mostly these soils contains adequate proportion of potash, phosphoric acid and lime which are ideal for the growth of sugarcane, paddy, wheat and other cereal and pulse crops.

Source Based Question

Q 8. *Read the source given below and answer the questions that follow by choosing the most appropriate option:*

Laterite has been derived form the Latin word later which means brick. The laterite soil develops under tropical and subtropical climate with alternate wet and dry season. This soil is

the result of intense leaching due to heavy rain. Laterite soils are mostly deep to very deep acidic (pH < 6.0) generally deficient in plant nutrients and occur mostly in Southern states, Western Ghats region of Maharashtra, Odisha, some parts of West Bengal and North-East regions, where these soils support deciduous and ever-green forests. It is human rich, but under sparse vegetation and in semi-arid environment, it is generally humus poor. They are prone to erosion and degradation due to their position on the landscape. After adopting appropriate soil conservation techniques particularly in the hilly areas of Karnataka, Kerala and Tamil Nadu, this soil is very useful for growing tea and coffee. Red Laterite soils in Tamil Nadu, Andhra Pradesh and Kerala are more suitable for crops like cashew nut.

(i) **What is the other name of laterite soil?**

a. Cotton soil b. Brick soil
c. Red soil d. Regur soil

(ii) **The laterite soil develops under which type of climate?**

a. Tropical climate
b. Sub-tropical climate
c. Temperate climate
d. Both a. and b.

(iii) **Laterite soils support which type of forests?**

a. Deciduous forests b. Evergreen forests
c. Mountain forests d. Both a. and b.

(iv) **Red laterite soils in Tamil Nadu, Andhra Pradesh and Kerala are more suitable for which type of crop?**

a. Sugarcane b. Cotton
c. Rice (Paddy) d. Cashew nut

(v) **Under which of the following conditions laterite soil is generally humus poor?**

a. Sub-tropical climate
c. Hot weather
b. Semi-arid environment
d. Dry climate

(vi) **Two statements are marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:**

Assertion (A): Laterite soil is very useful for growing pulses, sugarcane and resin.

Reason (R): Laterite soil has low humus content as the micro-organisms cannot survive in it.

a. Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Very Short Answer Type Questions

Q 9. How is over irrigation responsible for land degradation in Punjab?

Q 10. Which type of soil is found in the piedmont zone of Western Ghats?

Short Answer Type Questions

Q 11. Describe any three main features of 'Black Soil' found in India.

Q 12. '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.

Q 13. What steps can be taken to control soil erosion in the hilly areas?

Long Answer Type Questions

Q 14. What is meant by conservation of resources? Mention any four steps taken at global level to conserve resources.

Q 15. What is land degradation? Suggest any four steps to control land degradation.