



CLASS X
BIOLOGY
CHAPTER 18
NATURAL RESOURCES

SOLUTIONS

TEXTUAL QUESTIONS AND ANSWERS

Let us answer (Page 328)

1. What are renewable and non-renewable resources?

Ans: **Renewable resources** are inexhaustible resources like forests, wildlife, solar energy etc. that can be regenerated within a span of time.

Non- renewable resources are exhaustible resources like coal, petroleum etc. that can't be replenished once they become exhausted.

2. How does the forest act in reducing the global warming?

Ans: Forests absorb the main greenhouse gas CO₂ as a raw material for photosynthesis and thereby reduces **global warming**.

3. What are the major consequences of deforestation?

Ans: **The major consequences of deforestation are:**

- a) The existence of wild life is threatened by destruction of their natural habitats.
- b) Rainfall is affected and increases problem of soil erosion and loss of fertility.
- c) It leads to landslides in hilly areas.

Let us answer (Page 331)

1. What is meant by wildlife?

Ans: All kinds of wild plants and animals living freely in their natural habitats far from human interference, control and dominance are known as **wild life**.

1. How wild life can be conserved?

Ans: **Wild life can be conserved in the following ways:**

- a) Protecting natural habitat and establishing Biosphere reserves.
- b) Improving the existing protected areas and imposing restriction on human activities in such areas.
- c) Imposing protection of wild life through legislation.
- d) Creating awareness for need of environmental protection.



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EXERCISES

1. What is meant by natural resources?

Ans: Natural resources are substances available in our natural environment used for supporting human life and meet human requirements.

2. What are the two kinds of natural resources?

Ans: The two kinds of natural resources are:

- a. Renewable resources
- b. Non-renewable resources.

3. What are the ecological services provided by the forests?

Ans: The ecological services provided by the forests are:

- a) **Production of oxygen:** Oxygen essential for respiration by all the living organisms is released from the forests through photosynthesis.
- b) **Reducing global warming:** Forest absorbs CO₂ which is a greenhouse gas and thereby reduces global warming.
- c) **Habitat of wildlife:** Forests are home to millions of wild animals and plants.
- d) **Soil conservation:** The trees of forest binds soil particles tightly in their root thus preventing soil erosion.
- e) **Pollution moderator:** Forest absorbs toxic gases as well as noise and thus, reduces air and noise pollution.
- f) **Act as regulator of hydrological cycle:** The forest release water absorbed from the soil into the atmosphere as water vapour through transpiration and help in bringing rain.

4. How forests can be conserved?

Ans: Forests can be conserved by the following methods:

- a) Conservation of reserve forests. (**Chipko Movement** is an example of public support)
- b) Plantations of trees through afforestation
- c) Undertaking Agroforestry and social forestry programs
- d) Social
- e) Conservation through law



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5. Why should we conserve wildlife?

Ans: We should **conserve wildlife** not only for benefits but also for our survival in the following ways:

- a) **Ecological balance:** Every animal is a link in one food chain or other and has the specific role in the ecosystem and hence, the existence of wild life is required for ecological balance.
- b) **Utility to man:** Humans obtain many useful materials like meat, honey, wax, silk, lac, fur, timber, medicine etc. from wildlife.
- c) **Helps to our survival:** By protecting natural habitat of wild life, plants absorb CO₂ and release O₂ through photosynthesis. As a whole an ecological balance is maintained through normal rainfall and climatic conditions.
- d) **Tourist attraction:** Many people like to see the wild animals in their natural habitats and also at zoos. Animal lovers travel to far off countries to see the different animals. Such activity helps to increase income of the country.
- e) **Aesthetic value:** Many animals by their beauty and pattern, majestic elegance, sweet voice, playful behaviour appeals to the aesthetic sense of man and often become subject of inspiration for painting, poetry, sculptures and writing.

6. What steps to be taken up for the conservation of coal and petroleum?

Ans: **The steps to be taken up for the conservation of coal and petroleum are**

- a) Save electricity, water, etc. by turning off appliances when not required.
- b) Use solar cookers or natural source of heat, pressure cooker to cut down expenses on LPGs.
- c) Encourage the use of biogas as domestic fuel.
- d) Promote plantation at proper places.
- e) Use public transportation whenever possible.
- f) Fuel efficient motor vehicle should be designed to reduce consumption of petrol and diesel etc.



EXTRA QUESTIONS & ANSWERS

1. Differentiate between renewable and non-renewable resources.

Ans: The **differences** between Renewable and Non-Renewable Resources are given below:

Renewable Resources	Non-renewable Resources
1. They are inexhaustible resources.	1. They are exhaustible resources.
2. They can be regenerated within a span of time.	2. They cannot be regenerated once exhausted.
3. Forest, wildlife, wind energy, solar energy etc.	3. Minerals, coal, petroleum etc.

2. What are the advantages of renewable and disadvantages of non-renewable resources?

Ans:

Advantages of renewable resources:

- a) The resources are abundant and sustainable too.
- b) They require little maintenance
- c) They produce little waste and a clean form of energy.

Disadvantages of non-renewable resources:

- a) The resources are limited.
- b) The extractions of such resources are expensive and time consuming too.
- c) The use of resources cause environmental and health hazards.

4. Differentiate between Social Forestry and Agroforestry.

Ans:

DIFFERENCES	
Social Forestry	Agroforestry
1. Plantation on unused land.	1. Combination forestry and agricultural.
2. Aims to decrease pressure on existing forest.	2. Aims to integrated and productive land use.
3. Plantation in farmland, community land, sides of rail tracks etc.	3. Plantation on the same unit of land.



5. List any three objectives of forest (conservation) Act, 1980.

Ans: Three objectives of Forest (conservation) Act, 1980 are:

- a) To control grazing problems.
- b) Afforestation in non-forest lands.
- c) To control shifting cultivation and encroachments.

6. Why is CNG considered as better fuel than diesel for automobiles?

Ans: CNG is considered as better fuel than diesel for automobiles because it is more efficiently and greatly reduced vehicular pollution.

7. What are the different constituents of the petroleum separated after fractional distillation?

Ans: The different constituents of the petroleum are: petroleum gas, kerosene, petrol, diesel, fuel oil, lubricating oil, paraffin, wax, plastic and etc.

8. Which fuel is used in place of petrol and diesel to reduce pollution?

Ans: Compressed Natural Gas (CNG) is used in place of petrol and diesel to reduce pollution.

9. Explain three methods through which conservation of forest can be done.

Ans: The conservation methods are:

- a) **Conservation of reserve forest:** These include protected areas such as National parks, Sanctuaries, Sacred Groves, Biosphere Reserves, and all ecologically fragile areas. Human activities like grazing, cultivation, ownership etc. are prevented.
- b) **Forest plantations:** Methods of extensive plantations through afforestation to save diminished forest cover. By promoting commercial forestry to fulfill the commercial demand without causing destruction of the natural forest through plantation in all available spaces.
- c) **Social forestry and Agroforestry:** In social forestry, the trees and shrubs are planted to unused areas like unused farmland, community land, sides of road and rail tracks etc. Agroforestry is the combination of agriculture and forestry technologies for integrated, diverse and productive land use system.



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10. “Forest act as a regulator of hydrological cycles”. Explain in three points.

Ans:

- The forest floor absorbs most of the rain water by slowing down the surface run off.
- Such water is slowly released for recharge of springs
- The water vapour in the atmosphere above tropical rain forest comes from transpiration (50-80%) and help in bringing down rains.

11. Apart from commercial value, forest provides many useful services. Explain any five such services.

Ans:

- Production of oxygen:** Oxygen essential for all the living organisms are released from the forests through photosynthesis.
- Reduction of global warming:** Forest absorbs CO₂ which is a greenhouse gas and thereby reduces global warming.
- Habitat for wild life:** Forests are the homes of millions of wild animals and plants.
- Pollution control:** Forest absorbs toxic gases as well as noise and thus, reduces air and noise pollution.
- Regulation of hydrological cycle:** The forest releases water absorbed from the soil into the atmosphere through transpiration as vapour and help in bringing down rain.

12. Define non-renewable resource.

Ans: These are exhaustive natural resources such as coal, petroleum, etc. that cannot be regenerated once they become exhausted.

13. Why should we protect our forest from deforestation? Write three points only.

Ans:

- To prevent soil erosion and loss of soil fertility.
- In order to prevent landslides in hilly areas.
- To bring about normal rainfall in an area as well as conservation of wildlife.

14. Name the two kinds of Natural resources.

Ans: **The two kinds of natural resources are:**

- Renewable natural resources** and
- Non-renewable natural resources.**



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15. How renewable resources may become non- renewable?

Ans: The renewable resources may become non-renewable resources when we exploit them to such extent that their rate of consumption exceeds their rate of regeneration.

16. The protection and the conservation of our natural resources are very important, why?

- a) It does not become exhausted earlier.
- b) For use by our future generation.

17. Write the definition of deforestation. Mention three important reasons for deforestation.

Ans: **Deforestation** means reduction or destruction of forest cover in an area.

The main reasons of deforestation are:

- a) Practice of **shifting cultivation**.
- b) **Construction of dams, roads, hydro-electric projects and mining.**
- c) **Indiscriminate use of forest products** such as woods for making furniture, railway sleepers, ply-wood, boxes and paper, etc.

18. How the practice of shifting cultivation causes deforestation ?

Ans: **Shifting cultivation** is a practice in which forest is cleared and burnt down in different areas for cultivation. Crops are grown there till it is fertile and after that the cultivators move to new forest land. In this way, **shifting cultivation is a major cause for deforestation.**

19. Explain the possible consequences of over exploitation of a species.

Ans: If a species is exploited too much, its population declines to a great extent that is not able to sustain itself. So, it gradually becomes endangered and finally extinct.

20. State the reason for decline in natural forest cover everywhere in the world.

Ans: The natural forest cover has declined over the years due to **deforestation.**

21. Deforestation and population growth are interlinked. Give one reason.

Ans: The growth of human population exerts a tremendous pressure on the forest. In order to accommodate the increasing population, more houses are required and thus more construction materials leading to exploitation forest. Therefore, the increase in human population results in deforestation.

22. What are reserve forests?

Ans: **Reserve forests** include National parks, Sanctuaries, Sacred Grooves, Biosphere Reserves and all ecologically fragile areas that are not permitted to disturb.

23. Can you give a very good example of public support to prevent cutting of trees in India?

Ans: **The Chipko Movement.**



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24. Identify the areas where social forestry should be taken up.

Ans: Unused farmland, community land, sides of road and rail tracks etc.

25. Suggest any three measures to save our natural resources.

Ans: The three measures to save our natural resources are:

a) Reducing the use of natural resources (reduce)

b) Natural resources are recycled and converted into desired objects.

c) The process of reuse should be initiated.

25. Why the government of India enacted the forest conservation act, 1980?

Ans: Forest (conservation) Act, 1980 was enacted with a view to check indiscriminate de-reservation and diversion of forest land for non-forest purposes.

26. The forest conservation Act, 1980 was amended in 1988, give one reason.

Ans: Forest conservation Act, 1980 was amended to incorporate stricture penal provisions against violators.

27. Write the name of one animal found in Manipur that is becoming threatened to extinction.

Ans: Sangai (*Cervus eldi-eldi*)

28. What will happen in our ecosystem if all the scavengers are extinct?

Ans: In the absence of scavenger, there will be increased waste of dead and decomposing body of several animals in our surrounding.

29. If we kill all the rat eating snakes in an ecosystem, can you suggest one possible outcome?

Ans: In the absence of their predators, the population of rat will be increased so much that they even attack our food grains leading to many harmful consequences in the environment.

30. Is coal a renewable resource? If not, why?

Ans: No, coal is not a renewable resource. Presently the process of formation of coal is almost absent and its utilization is a continuous one, therefore coal is known as non-renewable resource.

31. How was coal formed?

Ans: Coal was formed 255-350 million years ago in the damp, hot regions of the earth. The ancient plants growing in swamps and river banks were buried into the soil after death. Due to heat and pressure they become gradually converted into peat and coal over millions of years.



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32. **Name the world's most abundant fossil fuel? How many years are likely to last the coal and petroleum reserve of world considering the present rate of usage?**

Ans: Coal. The present coal reserve are likely to last for about 200 years while petroleum reserve will last for about 40 years .

33. **Identify the rocks that contain petroleum. How crude petroleum can be purified and refined? Name the various important products obtained.**

Ans: Sedimentary rocks, crude petroleum is purified and refined by the process of fractional distillation. The important products so obtained are petroleum gas, kerosene, petrol, diesel, fuel oil, lubricating oil, paraffin, wax, plastic etc.

34. **How the conservation of electric energy help in the conservation of fossil fuel?**

Ans: Petroleum products and coal are widely used for the production of electricity in many thermal and super-thermal power stations. Thus, saving electrical energy helps in the conservation of fossil fuel.

35. **How plantations of trees around our houses help in the conservation of coal and petroleum?**

Ans: The plantation of trees and climbers at proper places outside our houses protect intense heat of summer and gives cool breeze and shade. Thus, there will be reduction of electric charges on coolers and air conditioners which in turn help in the conservation of Petroleum.

36. **Write the long form of CNG. Mention one advantage of using CNG in cities like Delhi.**

Ans: CNG stands for Compressed Natural Gas. There has been great reduction in vehicular pollution in cities like Delhi by using CNG in daily means of transportation.



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