

## MANAGEMENT OF NATURAL RESOURCES

*Question 1: Define the term natural resources.*

**Answer:** Natural resources are the stock of nature such as air, water, soil, coal, minerals, animals and plants that are useful to mankind in many ways.

*Question 2: What are abiotic and biotic components of environment?*

**Answer:** The physical components of the environment soil, water, air, light and temperature are termed as abiotic components. The biotic components are all living things such as plants, animals, microorganisms, parasites, predators and human beings which influence the organism's life directly or indirectly because of their presence.

*Question 3: What is meant by management and conservation of resources?*

**Answer:** Management and conservation of resources means scientific utilization of resources while maintaining their sustained yield and quality.

*Question 4: What is meant by global warming?*

**Answer:** Due to an unhealthy increase in the amount of green house gasses like CO<sub>2</sub> in the atmosphere, there is an increase in the temperature of earth. This increase in temperature of earth is known as global warming. It is due to human activity like transportation sector emissions and industrial factory exhaust.

*Question 5: Explain the three R's in the conservation of environment?*

**Answer:** The three R's refer to Reduce, Recycle and Reuse. Reduce: Use less electricity by switching off unnecessary lights and fans, save water by repairing leaky taps, do not waste food. Recycle: Materials made of plastic, paper, glass and metal should be recycled to make new items. Reuse: To use the things again and again. This is even better than recycling as the process of recycling uses some energy.

*Question 6: What is the cause of over exploitation of natural resources?*

**Answer:** To meet the demands of increasing population, the land is continuously being cleared and converted to grow more food up and to make dwelling places. The industrial and technological revolution and consequent new demands for materials and lifestyle needs is another cause. Both these reasons are causing a large pressure for tapping the natural resources quickly and extensively.

*Question 7: Why do we need to manage our resources?*

**Answer:** With the enormous increase in human population and advancement in technology, the natural resources are being over exploited, without caring for the resultant consequences. If the natural resources are not managed then the future generation has to suffer with its consequences of not having them at all.

*Question 8: Why are some forests known as biodiversity hot spots?*

**Answer:** Forests where a large number of flora and fauna species are found are termed as 'biodiversity hot spots'. The range of different life forms like bacteria, fungi, ferns, flowering plants, nematodes, insects, birds, reptiles and so on are present in forests. Certain areas in the western ghats of Maharashtra and Kerala are examples of biodiversity hot spots.

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Question 9: *What direct value does a forest have for man?*

Answer: Forests contribute to the economic development of our country by providing goods and services to people and industry. They are intimately linked with our culture and civilization. Forests are useful to humans for the following reasons:

- 1) Forests provide timber for the building and furniture
- 2) Forests provide raw materials for the paper industry, board industry, plywood industry etc
- 3) Forests yield bamboos, which is called poor man's timber. Industrially bamboos are used as a raw material in paper and rayon industry
- 4) Forests provide fuel energy needs to villagers staying in their vicinity. They also provide fodder and grazing grounds for their animals
- 5) Forests provide various minor forest products such as fruits, nuts, gums, resins, tannins, rubber, lac, dyes, fibres, medicines, katha, insecticides, camphor, essential oils, soap substances, cooking oils and spices.
- 6) Forests also provide various animal products such as musk, honey, wax, tusser or mooga silk etc.

Question 10: *Why should we conserve forests and wildlife?*

Answer: Forests and wildlife play a vital role in the life and culture of the people. They form an important renewable natural resource and act as a source of gene pool for flora and fauna used in breeding programs in agriculture and animal husbandry. Forests attract rain fall bearing clouds act a sponges and to replenish the water table. Wild life resources provide aesthetic, biological and nutritional value to human life on earth. When man destroys forests and wild life, the ecological balance is upset.

Question 11: *Suggest some measures for the conservation of forests.*

Answer:

- 1) The involvement of various stake holders along with the forest department who use the forest to be involved in protection and sustainable harvest of forest needs
- 2) Area under forests should be monitored and these should not be converted into commercially exploitable tourist centres.
- 3) Felling of trees for timber trade and for fuel should be restricted. Steps should be taken to plant and grow adequate number of trees for each tree that is uprooted

Question 12: *What is the full form of IUCN and what is its primary purpose?*

Answer: The full form of IUCN is International Union for Conservation of Nature an international body that monitors biodiversity - its protection and depletion and suggests policy intervention to governments to protect and conserve nature.

Question 13: *Write a short note on the 'Chipko Andolan Movement'?*

Answer: In order to prevent deforestation by felling 'timber' for commercial exploitation by private contractors and the forest department, the movement called Chipko Andolan was taken up in Uttarakhnad Hymalayas in the last quarter of the 20<sup>th</sup> century for the preservation of natural forests.

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It is associated with the activists Sunderlal bahuguna and Pandey and literally means tree hugging or to embrace a tree. It caused the Forest department to restrict its activity of commercial felling of trees. The original act of tree hugging to save trees from being cut has its origins in the collective act of the Bishnoi community of Rajasthan in 1731 where over 350 people lost their lives by hugging trees to prevent a king's army to fell the trees of their forest.

*Question 14: What is water harvesting?*

**Answer:** It means capturing rain water when it falls on a roof or as runoff from paved and unpaved surfaces in village or town and directing it to open tanks, wells and percolation pits to recharge subsurface aquifers. The catchments area should be free of polluting activities so that the collected water remains clean for later use.

*Question 15: What is ground water and what is a water table?*

**Answer:** Water that percolates into the ground through the pores of rocks and gets trapped in spaces called aquifers is available as ground water. The depth or level at which ground water remains is called the water table. It is the upper level of the zone of saturation of water in the soil.

*Question 16: Suggest some measures for the conservation of water.*

**Answer:**

- 1) Water harvesting during rains to recharge ground water and avoid run offs as wastage
- 2) Hydro-geological survey to identify over-exploited areas
- 3) Artificial recharging of ground water in such areas
- 4) Transfer of surplus water to water deficit basins by interlinking of rivers
- 5) Restoring traditional methods of rain harvesting and storing water
- 6) The use of three R's when using water for domestic and industrial consumption
- 7) Mass awareness programs through public/private agencies
- 8) Integrated watershed plan for drinking, irrigation and industrial uses
- 9) Prevention of clearing of forest areas and increase of tree cover as flood control measures

*Question 17: Discuss the advantages and disadvantages of dams.*

**Answer:** Dams have been built with the intention to improve human quality of life by diverting water for power, prevent flood control, provide irrigation, and be a source of water supply to urban centers. However, they have also resulted in environmental problems and human health concerns.

**ADVANTAGES**

- 1) Dams benefit people by providing usable, reliable water sources
- 2) They improved the quality of life by providing drinking water

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- 3) They support the economic growth by diverting water for power, navigation, flood control, and irrigation
- 4) In many parts of the world dams have helped to remedy life-threatening problems such as famine as a result of drought, devastation from floods, and continued disease from lack of potable water supplies

**DISADVANTAGES**

- 1) Disruption of ecosystems by submerging of vast catchment areas
- 2) Decline of fish stocks
- 3) Forced resettlements
- 4) Dams change the chemical, physical, and biological processes of river ecosystems
- 5) They alter free-flowing systems by reducing river levels, blocking the flow of nutrients, changing water temperature and oxygen levels, and impeding or preventing fish and wildlife migration.

*Question 18: What is meant by conservation of natural resources?*

**Answer:** Conservation means using the resources in a sustainable and prudent manner where they are not overexploited for commercial benefits and where resources like biomass can be renewed. But at the same time prevent excessive or over-use leading to environmental damage.

*Question 19: What are fossil fuels?*

**Answer:** The fuels which are formed by the decomposition of dead and decayed matter many millions of years ago resulting in hydro carbon compounds are known as fossil fuels. Coal and petroleum are fossil fuels.

*Question 20: Name two important uses of coal and petroleum.*

**Answer:** Coal is used as energy input in metallurgical operations like the making of iron and steel and for generating power plants. Petroleum is refined to make automobile and aviation fuels like petrol, diesel and kerosene. It is also used in extracting many important petrochemical (alkanes, alkynes, alkenes, aromatic hydrocarbons etc.) used in manufacturing of products e.g. rayon, nylon etc.

*Question 21: How is petroleum formed?*

**Answer:** Petroleum is formed by the bacterial decomposition of marine plant and animal matter in the absence of air in a process that takes millions of years ago. The conditions of pressure and high temperature are found deep inside the earth crust.

*Question 22: Why we should look for the alternative sources of energy than fossil fuels?*

**Answer:** Fossil fuels are non-renewable and exhaustible. Their combustion causes serious environmental problems including global warming and air pollution. So in an attempt to manage and conserve energy resources, more of alternative sources of energy and technology should be used.

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Question 23: *Why we should conserve the fossil fuels?*

Answer: Fossil fuels take millions of years to make by natural processes. We are using up the fuels that were made more than 300 million years ago, before the time of the dinosaurs. They cannot be renewed or made once their reserves are depleted. So, it is best to not waste fossil fuels. We can save fossil fuels by conserving energy, using more efficient technologies and alternate fuel sources.

Question 24: *Suggest some changes you would incorporate in your life-style in a move towards a sustainable use of our resources.*

Answer: 1) Minimize waste. Dispose it after separating into biodegradable and non-biodegradable category

2) Plant and protect trees

3) Use paper wisely

4) Reuse containers, carrier bags

5) Save water and protect ponds, rivers from pollution

6) Use public transport or bicycle for going outdoors

7) Keep the Vehicle engine properly tuned and having regular emission test

8) Save energy like switching of lights and fans when not in use, or sharing transport (e.g. car pools) as energy saved is energy produced

9) Read books on Environment and Earth. Share information with others

Question 25: *What is green house effect?*

Answer: The CO<sub>2</sub> molecules of the atmosphere absorb solar radiation and keep the Earth warm, much like the glass which keeps the green house warm. This effect is called green house effect. The increase in carbon dioxide in the atmosphere to more than normal levels because of automobile and industrial emissions has intensified the green house effect and has led to global warming.

#### IMPORTANCE OF NATURAL RESOURCES

Natural resources are considered as basic requirements for the development of an economy. They are available in limited quantity with fixed location and moving them after extraction adds to the cost of production. So we need to allocate these resources in the most judicious manner so as to achieve the most efficient cost combination. Some of the important uses of natural resources are:

- Natural resources like land, forests and water provide livelihood to millions.
- Natural resources help in raising food crops and other natural food items.
- Export of minerals helps to earn foreign exchange to the country.
- Natural resources like forests help to prevent soil erosion
- The natural surroundings add more beauty to our environment.
- Developing countries depend a lot on its natural resources for their economic development.

**MANAGEMENT OF NATURAL RESOURCES****PRESERVATION OF NATURAL RESOURCES**

Nature is something we have borrowed from the future generation. Hence it is the duty of the present generation to keep them intact so that the next generation can also enjoy the fruits of nature.

- Degradation of natural resources is a major cause for poverty in many developing countries.
- Global warming is a major issue confronting the world due to environmental degradation.
- The process of globalization has further aggravated the problem of degradation.