

## MANAGEMENT OF NATURAL RESOURCES

### Gist of the Lesson:

#### 1) Natural Resources:

It is stock of the nature such as air, water, soil, minerals, coal, petroleum, forest and wildlife that are useful to mankind in many ways.

#### 2) Pollution:

It is defined as the undesirable change in physical, chemical or biological characteristics of our soil, air or water, which harmfully affect human lives or the lives of other species.

#### 3) pH of water:

pH stands for potential of hydrogen'. The acidic and basic character of aqueous solutions can be described in terms of hydrogen ion and hydroxyl ion concentration a pH below 7 indicates an acid solution and above 7 indicates an alkaline solution.

#### 4) Three R's to save the Environment:

We can reduce pressure on the environment by applying the maxim to Reduce, Recycle and Reuse in our lives.

#### 5) Sustainable Development:

It is the development which can be maintained for a long time without undue damage to the environment.

#### 6) Need to manage our Resources:

Our natural resources are limited. With the rapid increase in human population, due to improvement in health care, the demand for all resources is also increasing.

#### 7) Biodiversity:

It is the existence of a wide variety of species of plants, animals and microorganisms in a natural habitat with in a particular environment or of genetic variation with a species.

### 8) **Wildlife:**

It means all those naturally occurring animals, plants and their species which are not cultivated, domesticated and tamed.

### 9) **Water Harvesting:**

It means capturing rainwater where it falls or capturing the run off in a local area and taking measures to keep the water clean by not allowing polluting activities to take place.

### 10) **Fossil Fuels:**

These fuels are obtained from the remains of plants and animals, which got buried beneath the earth millions of years ago, changed into coal, petroleum and natural gas due to excessive heat and high pressure inside the earth.

### 11) **Coal:**

It contains chiefly carbon and its compounds mainly nitrogen, oxygen, sulphur and hydrogen. It also contains inorganic matter.

### 12) **Non-renewable Energy Sources:**

These are energy sources which cannot be replaced easily when they get exhausted and are also called conventional sources of energy. E.g.: Fossil fuels.

### 13) **Uses of Fossil Fuels:**

**Coal:** Thermal power plants and steam engines

**Petroleum:** Petroleum products like petrol and diesel are used as means of transport.

### 14) **Management of Fossil fuels:**

The natural gas is a good alternative to fossil fuels like coal and petroleum. The use of alternative source of non- conventional source of energy such as solar energy, wind energy, biomass energy etc. Should be promoted to save the reserves of fossil fuels biogas can also be used for various purposes.

## One Mark Questions (One word or one sentence)

**1. Name any two household wastes which can be easily recycled, but are generally thrown in the dust-bins by us.**

A. Paper, Plastic and (broken) glass etc.

**2. Why do we need alternative sources of energy?**

A. Our resources are not unlimited and with the increase in population the demand for all resources is increasing at an exponential rate, so we need alternative sources of energy.

**3. Give one protective function of forest?**

A. Forest is the habitat of many wild life species of animals and plants, which are not found elsewhere and play an important role to maintain a balance in biodiversity.

**4. Name two trees used in monoculture?**

A. Pine, teak and eucalyptus.

**5. List two measures that you would suggest for the better management of water resources?**

A. (a) Rain water harvesting.  
(b) Treatment of waste water  
(c) Storage of water in large tanks, ponds for use in agriculture and industry etc.

**6. Which gas is produced due to incomplete combustion of fossil fuels?**

A. Carbon monoxide

**7. What are fossil fuels? "Burning fossil fuels may lead to intense global warming" Justify this statement?**

A. Coal and petroleum, which were formed by slow degradation of biomass, millions of years ago are called fossil fuels.

The combustion of fossil fuel produces a large amount of green house gases like carbon dioxide and oxides of nitrogen, which have a tendency to trap the heat radiation and thereby causing global warming.

**8. List two products of combustion of fossil fuels others than carbon dioxide. What happens when combustion takes place in insufficient air? Name a green house gas?**

A. Carbon monoxide and oxides of sulphur and nitrogen etc. When combustion takes place in insufficient air, carbon monoxide and unburned hydrocarbons are formed.

Green House Gas: Carbon dioxide, methane (any one)

### **Two Marks Questions (30 words)**

**1. Recycling of paper, metal, plastic and e-waste is done at most of the places. Mention the positive impact of this recycling process on environment?**

A. For making the objects of plastic, electronic items, paper or metal, a lot of resources in the form of energy, man-power, time, fuel etc. are required. All these objects, if become out of use, can be recycled and we can save the energy and other resources, as less energy, time, fuel or man-power is required in recycling these objects than making a new/fresh one.

**2. Everyone of us can do something to reduce our consumption of various natural resources. List four such activities based on 3-R approach?**

- A.
- Switching off unnecessary lights and fans.
  - Using public transport.
  - Using plastic bottles for storing things in the kitchen.
  - Repairing leaky taps for saving water.

**3. How does mining disturb ecological balance?**

- A. (a) Mining causes pollution because of large amount of slag which is discarded for extraction of metal.  
(b) It caused landslide and many times the coal mines are prone to catch fires, which cause air pollution.

**4. Illustrate the role of Chipko Movement in forest conservation?**

**A.** Chipko Movement is the tree hugging movement in which the villagers compelled the axe man to stop tree felling by embracing and forming the circle around the marked trees. It has helped not only in the protection of forests but also benefitted the local population too by allowing the traditional use of forest resources.

**5. Suggest some approaches that need to be adopted towards conservation of forest?**

- A.** (a) Afforestation i.e., plantation of more and more trees to develop forests in all available land.  
(b) Conservation of reserve forests like national parks, sanctuaries, sacred Grooves and Biosphere reserves etc.  
(c) Planting more multipurpose and quick growing trees on all available land, viz. village common land, vacant land, road/rail side land etc.

**6. What is water harvesting? How can this technique help in the conservation of water?**

- A.** Water harvesting involves the practices applied or the art of water management and its conservation.
- It helps in better use of available water for future needs.
  - It also helps to charge the ground water table.
  - It saves the water (water conservation) and energy

**7. Evaluate the environmental problems caused due to large dams?**

- A.** High rise or large dams caused many environmental problems like:
- Loss of a large number of trees (deforestation).
  - Loss of biodiversity.
  - Loss of flora and fauna of the area which get submerged under water.

## Three Marks Questions (50 words)

### 1. Reuse is better than recycling. Give two examples of reuse strategy. Mention any two values do we attain from this strategy?

A. Reuse is better than recycling because even in recycling some energy is used while in reuse, it is merely to use it again and again without consuming energy.

**E.g.,**

- The used envelopes can be reused merely by reversing them.
- The packaging material and thick polythene carry bags can be used many times.
- The plastic bottles of jam or pickles after being empty, can be used for storing things in the kitchen.
- The mobile phones, camera, T.V. sets, pair of shoes etc. can be reused after repairing.

**Values:** Environmental concern, awareness, being economically wise, knowledgeable and justified, taking right decision etc.

### 2. What is meant by sustainable development of natural resources?

A. Sustainable development is the use of components of biological diversity in a way that does not interfere with the natural functioning of ecological processes and benefits the present generation while maintaining its potential to meet the needs and aspirations of the future generations. For sustainable development conservation and management of the natural resources is very necessary.

## Five Marks Questions (70 words)

### 1. Name a few international and national organisations working toward protection of our environment?

#### A. International Organisations:

- (a) Convention on International Trade in Endangered Species (CITES)
- (b) Environmental Protection Agency (EPA)
- (c) International Union for Conservation of Nature and Natural Resources (IUCN)
- (d) United Nations Environment Programme
- (e) Earth watches Programme
- (f) Earth scan
- (g) Man and Biosphere Programme
- (h) Greenpeace
- (i) World Wildlife Fund (WWF).

#### National Organisations:

- (a) Ministry of Environment and Forests, Government of India
- (b) Ministry of Non-Conventional Energy Sources
- (c) National Environment Engineering and Research Institute (NEERI)
- (d) Central Pollution Control Board (CPCB)
- (e) TERI
- (f) Other Non-Governmental Organisations (NGOs).

### 2. What are advantages/disadvantages and environment - friendliness of following?

**(a) Taking a bus, using your personal vehicle or walking/cycling.**

**(b) Using bulbs or fluorescent tubes in your homes.**

**(c) wearing and extra sweater or using a heating device (Heater or sign) on cold days.**

- A. (a) Taking a bus saves fuel. Using a private vehicle consumes more fuel. Walking and cycling save fuel and also help in exercising while being environmentally friendly.

- (b) Using fluorescent tubes helps save energy while giving more light per unit of power consumed. Nowadays Compact Fluorescent Lamps (CFLs) are also available which consume even less power while giving more light.
- (c) Using a heating device would consume energy. It would be beneficial to wear an extra sweater.

**3. Would the use of forest resources by local people lead to the exhaustion of these resources?**

A. Over ages people living in and near the forests have developed practices to ensure that the resources are used in a sustainable manner. In some areas of our country people even worship forests as deities. However, after the British took over the forests these were exploited ruthlessly. The forest department in independent India is still following the old colonial practices to some extent.

There is need to recognise the intellectual wealth of the local people and to involve them in the conservation of what forests are left. The use of forest resources by local people would not lead to exhaustion of these resources as the people and forests have developed a relation of interdependence.

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