



Solution 21

Silviculture is a major program started to replenish depleting forests. Its advantages are:

- (i) It produces a large quantity of raw materials for industry (like timber and paper industry).
- (ii) It increases the area of earth under forests (which is good for the conservation of wildlife).
- (iii) It maintains a perfect water cycle in nature.
- (iv) It prevents soil erosion.
- (v) It prevents floods.

Solution 22

The 'Chipko Andolan' (Hug the Trees Movement) originated from an incident in a remote village called 'Reni' in Garhwal in the early 1970's. A logging contractor had been allowed to cut down trees in a forest close to a village. One day, when the men folk of the village were out for work, the contractor's workers came in the forest to cut down the trees. In the absence of the men, the women of the village reached the forest quickly and clasped the tree trunks with their arms, preventing the workers from cutting down the trees. The forest trees were thus saved. The Chipko Movement quickly spread across all the communities and helped in the conservation of forests.

Solution 23

The forests and wildlife should be conserved to prevent undue damage to the environment as it helps in maintaining ecological balance in nature and preserves the gene pool.

Solution 24

The 'Khadin' system of rainwater harvesting in Rajasthan is a very long (100 m - 300 m long) earthen embankment called 'Bund' built across the lower edge of the sloping farmland. The rainwater from the catchment area flows down the slopes and stopped by the 'Bund' to form a reservoir. The rainwater which collects in the reservoir formed by the 'Bund', and in the well, seeps slowly into the land (or ground). This water - saturated land is subsequently used for growing crops.

Solution 25

The measures for conservation of electricity in our house are:

- (i) Switch off the lights, fans, television and other electrical appliances when not needed.
- (ii) Use energy efficient electrical appliances to save electricity.
- (iii) Use stairs to climb up to 3 floors of a building instead of taking a lift.

Solution 26

Coal and petroleum needs to be conserved as they once get exhausted will not be available to us in near future (because they are formed extremely slowly over a very long period of time).

Solution 27

Yes, water conservation is very necessary because it meets the basic necessities for all forms of life like human beings, animals and plants.

Solution 28

When coal and petroleum based fuels are burned, the products of combustion are: carbon dioxide, water, sulphur dioxide and nitrogen oxides. If combustion takes place in an insufficient supply of air then carbon monoxide is also produced.

These products are harmful to human beings and also pollute the environment in the following ways-

- (i) Sulphur dioxide attacks the lungs and causes bronchitis and other diseases. It also produces acid rain.
- (ii) Nitrogen oxides also attacks the breathing system and causes acid rain.
- (iii) Carbon dioxide traps sun's heat energy falling on the earth and increases the temperature which leads to global warming.
- (iv) Carbon monoxide gas is poisonous and if it gets into our blood stream, it stops the red blood cells from carrying oxygen from lungs to the rest of the body causing suffocation and may even cause death.

Solution 29

We should use fossil fuels judiciously because:

- (i) Fossil fuels (Coal and petroleum) left in the earth are limited which will get exhausted soon.
- (ii) The products of combustion of fossil fuels pollute the environment.

Solution 30

The three R's to save the environment are:

- (i) Reduce - Reduce means that we use less of the natural resources by cutting down on those practices which lead to their wastage. For example - we can reduce the wastage of electricity by switching off unnecessary lights and fans.
- (ii) Recycle - Recycling means that we should collect the used and discarded items of paper, plastic, glass and metals, and send them to the respective industries for making fresh paper, plastic, glass or metal objects.
- (iii) Reuse - Reuse means that we should use the same things again. For example plastic jars in which we buy various food items like Jams, pickles etc, can be used later on for storing things like salt and sugar.

Solution 31

Coal is used as a fuel in homes and industries and is also used to generate electricity at Thermal Power Plants. Petroleum products such as petrol and diesel are used as fuels in transport to run scooters, cars, buses etc.

Solution 32

The steps which can be taken to reduce the consumption of coal and petroleum products are:

- (i) Switch of the lights, fans, television and other electrical appliances to save electricity.
- (ii) Use energy efficient electrical appliances to save electricity. This can be done by using CFL and Fluorescent tube lights.
- (iii) Use stairs to climb at least up to three floors of a building instead of taking a lift to save electricity.
- (iv) Pressure cookers should be used for cooking food to save fuels like Kerosene and LPG.
- (v) Solar cookers should be used to cook food whenever possible.

Solution 33

Despite good rains, we are not able to meet the demand for water of all people because:

- (i) Our population is increasing rapidly.
- (ii) Due to lack of sufficient vegetation cover on ground, only a little rain water seeps into the ground and get stored as ground water.
- (iii) The high yielding varieties of crops require much more water for irrigation.
- (iv) Discharge of untreated sewage and industrial waste into water bodies.

Solution 34

People participation in the management of forests can help in increasing forest produce as well as in their conservation.

Participation of local people in the management of forest leads to the revival of degraded sal forest. In 1972, the West Bengal Forest Department formulated a novel scheme to revive the degraded sal

forest by involving the local people. The forest officer A. K. Banerjee involved the villagers of the area around the forest in the protection of 1272 hectares of degraded Sal forest. In return for help in protecting the forest, the villagers were given employment in both silviculture and harvesting operations of the forest, 25 percent of the final harvest produce, and were allowed to collect firewood and fodder from the forest area on a nominal payment. With the active and willing participation of local people around the forest, the degraded sal forest of Arabari became thick and green within ten years.

Solution 35

The rainwater harvesting from open spaces around the buildings in a city is done by constructing percolation pits covered with concrete slabs having holes in them, and connected to a recharge well through a pipe. The rainwater falling in the open spaces around buildings goes into the percolation pit through the holes in its concrete slab cover. After filtration in percolation pit, rainwater enters the recharge well through the outlet pipe and gradually seeps into the soil.

Solution 36

(a) Anything in the environment which can be used by human beings is called a natural resource. The important natural resources are forest and wild life, water and coal.

(b) We need to manage our natural resources because:

(i) The resources of the earth are limited and our population is increasing day by day.

(ii) The proper management of natural resources takes into consideration long term perspective and prevents their exploitation to the hilt for short term gains.

(iii) The proper management can ensure equitable distribution of natural resources so that all the people can benefit from the development of these resources.

(iv) The proper management will take into consideration the damage caused to the environment during the extraction or use of the natural resources and find ways and means to minimise this damage.

Solution 37

(a) The advantages of constructing dams across the rivers are:

(i) Water from a dam is used for irrigation in fields through a network of canals.

(ii) Water from a dam is supplied to the people in towns and cities through pipelines after suitable treatment. (iii) The falling water from the dam is used for generating electricity.

(b) The problems associated with the construction of dams are:

(i) Social Problems - Due to the constriction of high rise dams, a large number of human settlements are submerged in the water of large reservoir formed by the dam and many people are rendered homeless. This creates a social problem.

(ii) Environmental Problems - The construction of high rise dams on the rivers contributes to deforestation and loss of biodiversity. This is because of a vast variety of flora and fauna (plants and animals) get submerged in the water of large reservoir formed by the dam and disturb the ecological balance.

(iii) Economic Problems - Some people say that the construction of high rise dams involves the spending of huge amount of public money without the generation of proportionate benefits.

Solution 38

(a) The sources of water are - Lakes, Rains, Ponds, Wells and Glaciers.

(b) The river Ganga is polluted. The water of river Ganga is turned into a dirty watered rain by the discharge of untreated sewage and industrial wastes. The pollution of river Ganga is also caused by human activities like, Bathing, washing of clothes, immersion of ashes of the dead and dumping of unburnt corpses into its water. The industries also discharge effluents into the river water.

Solution 39

- (a) The various industries which are based on forest produce are; timber industry, paper manufacturing industry, 'lac' industry and sports equipment industry.
- (b) The main aim of the management of forests and wild life is to conserve the biodiversity which we have inherited.
- (c) The main stakeholders in the management of forest resources are:
- (i) The people who live in and around the forest and are dependent to some extent on forest produce to lead their life.
 - (ii) The Forest Department of the Government which owns the forest land and controls the resources from the forest.
 - (iii) The industrialists who use various forest products for their factories, such as wood for making paper and furniture, and 'tendu' leaves for making 'bidis', etc.
 - (iv) The forest and wildlife activists who want to see the forests in their pristine form.

Solution 40

- (a) Rainwater harvesting is the collection of rain water falling on land for recharging the ground water. The structures of rain water harvesting are: Khadin, Tanks, Kulhs, Ponds, Eris, Tals and Kattas.
- (b) The various advantages of water stored in the ground are:
- (i) The water stored in ground does not evaporate.
 - (ii) The water stored in the ground spreads out to recharge wells and provide moisture for crops over a wide area.
 - (iii) The water stored in ground does not promote breeding of mosquitoes.
 - (iv) The water stored in ground is protected from contamination by human and animal wastes.
 - (v) The water stored in ground is utilised for the benefit of local population.

***** END *****