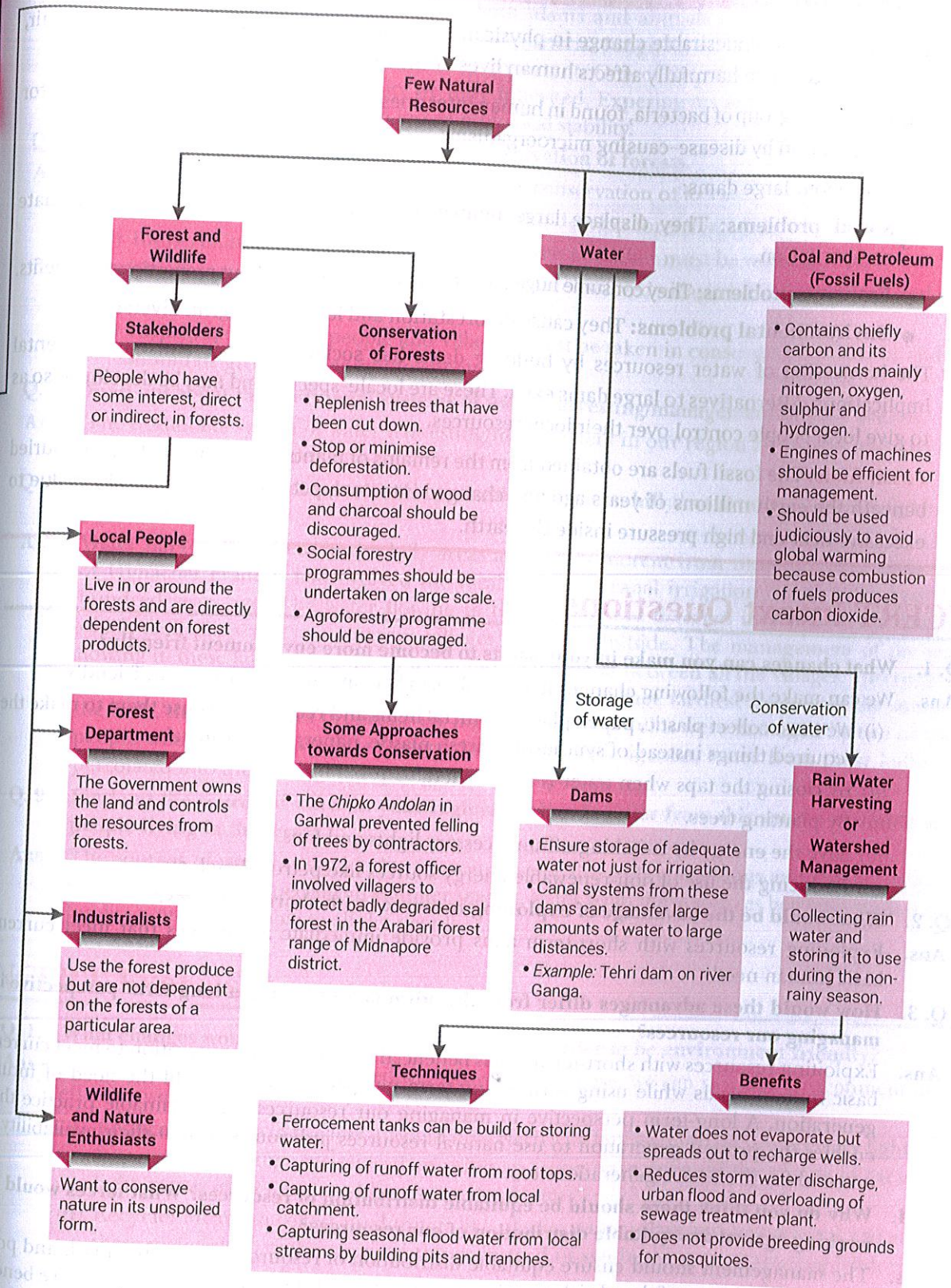
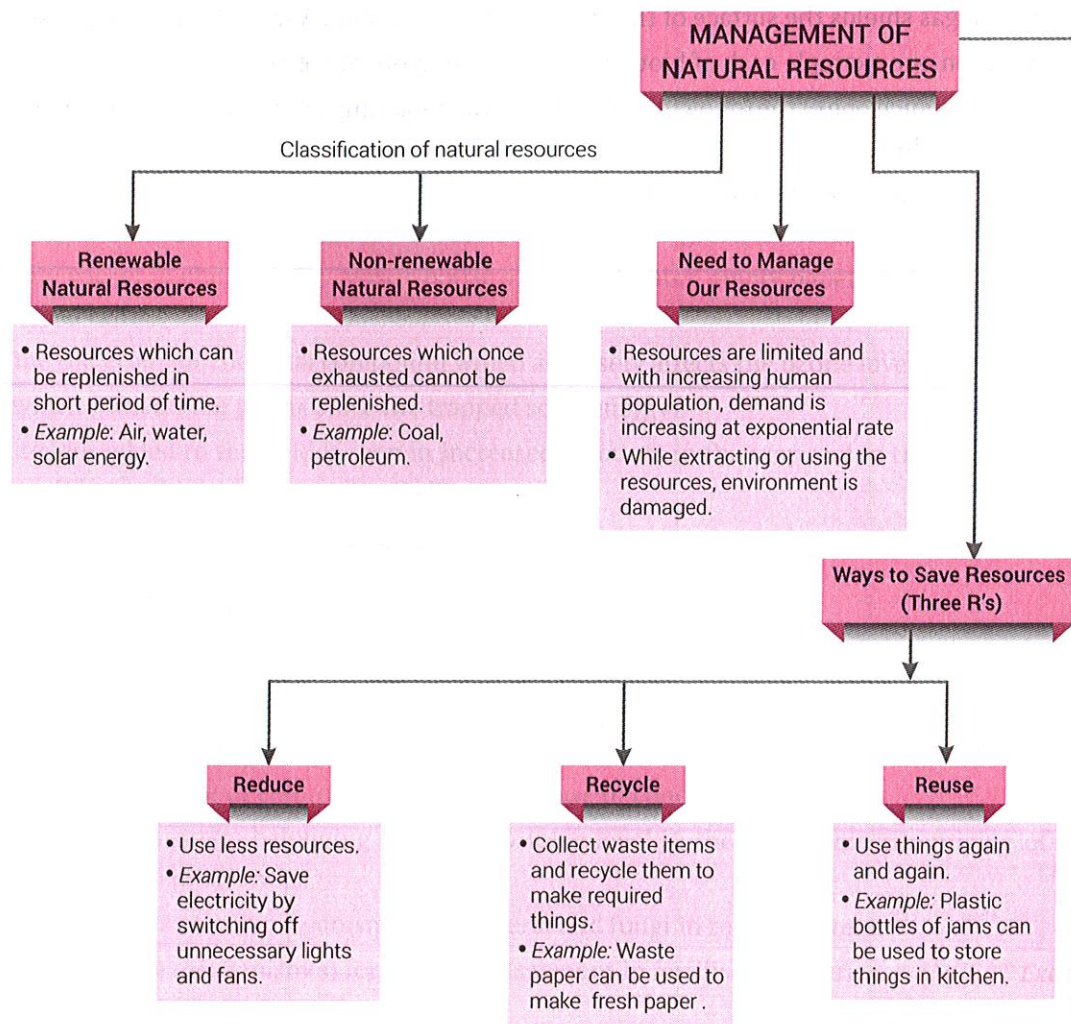


MANAGEMENT OF NATURAL RESOURCES

BASIC CONCEPTS – A FLOW CHART



MORE POINTS TO REMEMBER

- ❑ **Pollution:** It is an undesirable change in physical, chemical and biological characteristics of air, land and water which harmfully affects human lives or the lives of other species.
- ❑ **Coliform:** It is a group of bacteria, found in human intestines. Their presence in water is an indicator of contamination by disease-causing microorganisms.
- ❑ Criticism about large dams:
 - **Social problems:** They displace large number of farmers and tribals without adequate compensation.
 - **Economic problems:** They consume huge amount of public money without proportionate benefits.
 - **Environmental problems:** They cause deforestation and loss of biological diversity.
- ❑ The harnessing of water resources by building dams has social, economic and environmental implications. Alternatives to large dams exist. These are locale-specific and may be developed so as to give local people control over their local resources.
- ❑ **Fossil fuels:** The fossil fuels are obtained from the remains of plants and animals which got buried beneath the earth millions of years ago and changed into coal, petroleum and natural gas due to excessive heat and high pressure inside the earth.

NCERT Intext Questions

Q. 1. What changes can you make in your habits to become more environment friendly?

Ans. We can make the following changes in our habits to become more environment friendly:

- (i) We must collect plastic, paper, glass and metal items and recycle and reuse them to make the required things instead of synthesising fresh plastic, paper, glass or metals.
- (ii) By closing the taps when water is not needed.
- (iii) By planting trees.
- (iv) Save the energy by switching off unnecessary lights and fans.
- (v) Reducing the use of non-renewable energy sources like petrol, diesel, etc.

Q. 2. What would be the advantage of exploiting resources with short-term aims?

Ans. Exploiting resources with short-term aims provide immediate advantages that meet current basic human needs.

Q. 3. How would these advantages differ from the advantages of using a long-term perspective in managing our resources?

Ans. Exploiting resources with short-term aim is beneficial for the present generation to meet current basic human needs while using with a long-term perspective aims to fulfil the need of future generation. A long-term perspective in managing our resources is a sustainable practice that enables the present generation to use natural resources judiciously so that their availability is ensured for the future generations too.

Q. 4. Why do you think there should be equitable distribution of resources? What forces would be working against an equitable distribution of our resources?

Ans. The management should ensure equitable distribution of resources, so that both rich and poor are benefitted. Powerful and rich people take advantage of their influence and get more benefit as compared to poor people. The money and power are important factors which work against the distributions of our resources.

Q. 5. Why should we conserve forests and wildlife?

Ans. There are large number of species of both plants and animals that are found in the forests. However, the range of different life forms (bacteria, fungi, ferns, flowering plants, nematodes, insects, birds, reptiles and so on) is also important. One of the main aims of conservation is to try and preserve the biodiversity we have inherited. Experiments and field studies suggest that a loss of diversity may lead to a loss of ecological stability.

Q. 6. Suggest some approaches towards the conservation of forests.

Ans. The following measures are suggested for the conservation of forests:

- (i) Plantation of indigenous or exotic species to develop forests in all the available land.
- (ii) Indiscriminate felling of trees for the purpose of timber must be reduced.
- (iii) The forest reserves must be protected from fuel-starved villagers, fodder-starved cattles and commercial exploitation.
- (iv) Participation of local people and villagers must be taken in conservation of forests and they should be given proper employment.

Q. 7. Find out about the traditional systems of water harvesting/management in your region.

Ans. The traditional system of water harvesting/management in our region are ponds, pits and lakes where rainwater is stored.

Q. 8. Compare the above system with the probable systems in hilly/mountainous areas or plains or plateau regions.

Ans. Water harvesting system in the hilly areas are quite different from those of plain areas. Parts of Himachal Pradesh had evolved the local system of canal irrigation called kulhs over four hundred years ago. The water flowing in the streams was diverted into man-made channels which took this water to numerous villages down the hillside. The management of the water flowing in these kulhs was done by a common agreement between all the villages. Interestingly, during the planting season, water was first used by the village farthest away from the source of the kulh, then by villages progressively higher up. These kulhs were managed by two or three people who were paid by the villagers. In addition to irrigation, water from these kulhs also percolated into the soil and fed springs at various points.

Q. 9. Find out the source of water in your region/locality. Is water from this source available to all people living in that area?

Ans. The sources of water in my locality is groundwater through handpump and the municipality supply. Sometimes, especially in summer season, water from these sources becomes scant. In my locality, water is available to all the people.

NCERT Exercises

Q. 1. What changes would you suggest in your home in order to be environment friendly?

Ans. By pursuing the three R's, *i.e.*, Reduce, Recycle and Reuse, we can save the environment in an effective way.

(i) **Reduce:** It means to use less. I would save electricity by switching off unnecessary lights and fans, prefer walking or cycling than using an automobile, turn off the engine of car at red light, repair leaky taps, would not waste food, etc.

(ii) **Recycle:** Means to collect used things like plastic, paper, glass and metal items and recycle these materials to make required things instead of synthesising or extracting fresh plastic, paper, glass or metal.

(iii) **Reuse:** Refers to using things again and again. For example, instead of throwing away used envelopes, they can be used by reversing.

Q. 2. Can you suggest some changes in your school which would make it environment friendly?

Ans. The changes that would make my school environment friendly are:

- (i) Saving energy by turning off lights that we are not using.
- (ii) I will suggest to buy recycled paper for decoration and other purposes instead of plastic materials.
- (iii) Use writing paper on both the sides.
- (iv) To grow plant and trees all around the playground.

Q. 3. We saw in this chapter that there are four main stakeholders when it comes to forests and wildlife. Which among these should have the authority to decide the management of forest produce? Why do you think so?

Ans. The local people who live in or around forests should have the authority to decide the management of forest produce. These people know the practices to use the resources in sustainable manner. These people have been using the forest and wildlife resources since the ancient times without harming or causing any environment damage. However, they should be constantly checked and guided by environmentalists and ecologists.

Q. 4. How can you say that an individual can contribute or make a difference to the management of

- (i) Forests and wildlife,
- (ii) Water resources, and
- (iii) Coal and petroleum?

Ans. (i) Forests and wildlife:

- (a) I will stress on the conservation of biodiversity.
- (b) I will prevent cutting down of trees in forest, this will itself protect the habitat of wild animals.
- (c) I will try to educate people on the importance of forests and their role in our life.

(ii) Water resources:

- (a) I will stress on the conservation of water by turning off the tap while brushing or shaving.
- (b) I will use potable water for drinking purpose only and not for cleaning car, or giving water to plant.
- (c) The judicious use of water is essential to avoid undue wastage of water.
- (d) I will adopt rainwater harvesting system.

(iii) Coal and Petroleum: These are the main sources of energy today. We can save them in many ways. For example :

- (a) Using fluorescent tubes instead of lamps using fossil fuels.
- (b) Using solar devices instead of fossil fuels.
- (c) Prefer walking or cycling rather than using vehicles or using public transport to save petrol.
- (d) I will get my car properly tuned to improve fuel efficiency.

Q. 5. What can you as an individual do to reduce your consumption of the various natural resources?

Ans. As an individual, I will try my best to use or consume only minimum and the required amount of food, clothes, toys, books and electricity.

Q. 6. List five things you have done over the last one week to:

- (i) conserve our natural resources.
- (ii) increase the pressure on our natural resources.

Ans. (i) Five things that I have done over the last one week to conserve our natural resources are:

- (a) Saved electricity by switching off unnecessary lights.

(b) Repaired leaky taps for saving water.

(c) Used empty bottles of jams for storing purpose.

(d) Used empty plastic bottles of jams for storing purpose.

(e) I have not purchased plastic toys.

(f) I have not used petroleum products.

(Any five)

(ii) Five things which I have done over the last week to increase the pressure on our natural resources:

(a) I did not switch off my room's light last night.

(b) Wasted food.

(c) Wasted water during bathing.

(d) Frequently used heating devices.

(e) Visited my friends house in a car.

Q. 7. On the basis of the issues raised in this chapter, what changes would you incorporate in your lifestyle in a move towards a sustainable use of our resources?

Ans. I would incorporate the maximum use of the three R's, i.e., reduce, recycle and reuse in my lifestyle in a move towards sustainable use of our resources.

VERY SHORT ANSWER QUESTIONS

[1 mark]

Q. 1. What are natural resources?

Ans. Natural resources are naturally occurring substances useful to man in their unmodified (natural) forms.

Q. 2. Define biodiversity.

Ans. The occurrence of different types of genes and species from all the habitat and ecosystem in a particular place and various part of the earth is called biodiversity.

Q. 3. Why maintaining a biodiversity is important?

Ans. Maintaining biodiversity is important because experiments and field studies suggest that a loss of biodiversity may lead to a loss of ecological stability.

Q. 4. List any two industries based on forest produce.

Ans. Paper, timber, lac, sports equipments

(Any two)

Q. 5. A person lives near a forest. Make a list of four items which he can get from the forest to meet his daily needs.

Ans. Firewood, timber, thatch, bamboo, fruits, nuts, medicines

(Any four)

Q. 6. Name the award given in the memory of Amrita Devi Bishnoi.

Ans. Amrita Devi Bishnoi award for wildlife conservation.

Q. 7. Name the prominent ecologist who is responsible for Chipko movement.

Ans. Shri Sundarlal Bahuguna

Q. 8. Give one criticism about large dams.

Ans. Large dams consume large amount of public money without the generation of proportionate benefits.

Q. 9. Name the industries which are based on forest products.

Ans. Timber, paper and sports industries.

Q. 10. What are biodiversity hotspots?

Ans. Biodiversity hotspots are regions rich in biodiversity.

Q. 11. Give an example of a community for whom conservation of forest and wildlife has been a religious tenet.

Ans. For Bishnoi community in Rajasthan, conservation of forest and wildlife has been a religious tenet.

SHORT ANSWER QUESTIONS-I

[2 marks]

Q. 1. What are natural resources? State two factors that work against an equitable distribution of these resources.

Ans. Natural resources are the stocks of nature whether living or non-living, such as air, water, soil, animals and plants which are useful to the mankind.

Two factors that work against an equitable distribution of these resources are:

(i) money and (ii) power.

Q. 2. How do advantages of exploiting natural resources with short term gains in mind differ from the advantages of managing our resources with a long-term perspective? [CBSE Delhi 2017]

Ans. Former leads to huge immediate profits or selfish gains while latter leads to sustainable approach so that the resource may last for future generations too.

Q. 3. What is meant by three types of 'R' (3-R's) to save the environment? Explain with examples how would you follow the 3-R's in your school to save the environment. [CBSE (F) 2015]

Ans. The three types of 'R' are Reduce, Reuse, Recycle. The 3-R's can be followed in the following ways:

—Switch off the fans and bulbs when not in use,

—Reuse of paper, polythene bags, etc.,

—Reduce the wastage of water/paper or any other item.

Q. 4. Write two advantages of sustainable management of natural resources. Out of the two – reuse and recycle – which is better and why? [CBSE (F) 2015]

Ans. Advantages:

(i) Provides the resources for the present generation.

(ii) Preserves the resources for the future generation as well.

Reuse is better than recycling because it does not involve use of energy.

Q. 5. Prepare a list of five items that you use daily in the school. Identify from the list such items that can be recycled. [NCERT Exemplar]

Ans. Paper, rexine bag, blade, pen, plastic box, scale, eraser, compass and dividers (metallic), steel lunch box and steel spoon are used in the school.

Paper, blade, plastic box, eraser, compass, steel lunch box and steel spoon can be recycled.

Q. 6. "The prejudice against the traditional use of forest areas have no basis". Explain.

Ans. The great Himalayan National park contains alpine meadows within its reserved areas. These meadows were grazed by sheep in summer. But after the formation of national park, this practice was stopped. Due to this, the grass first grows very tall and then falls over preventing fresh growth from below.

Q. 7. What is meant by wildlife? How is it important for us? [CBSE Delhi 2017]

Ans. Wildlife is naturally occurring plants, animals and their species which are not cultivated, domesticated or trained.

Its importance are :

(i) Helps in maintaining the ecological balance.

(ii) Provides great aesthetic value for human beings.

(iii) Have economical importance also.

Q. 8. What legislative measures are taken in India to conserve wildlife?

Ans. In India, several laws and acts have been passed from time to time in order to protect the degrading wildlife. Out of all, the Wildlife Protection Act of 1972 has been the most effective. Under this Act, possession, trapping, shooting of wild animals alive or dead; serving their meat for eating in houses, using them as transport, etc., are completely under strict control or prohibited.

Q. 9. Mention two ways in which water harvesting can be undertaken.

Ans. The two ways by which water harvesting can be undertaken are:

(i) Capturing run-off water from roof tops.

(ii) Capturing run-off water from local catchments.

Q. 10. What is the impact of excessive irrigation and intensification of agriculture?

Ans. It has resulted in environmental degradation and creation of few waste lands. Water logging has ultimately caused development of saline soil.

Q. 11. Building of big dams gives rise to some problems. List three main problems that may arise. Suggest a solution to any one of these problems. [CBSE (F) 2015]

Ans. Problem that may arise would be :

(i) Social problems

(ii) Economic problems

(iii) Environmental problems.

Solution to these problems would be adequate rehabilitation, compensation to the displaced persons and afforestation.

Q. 12. What measures would you take to conserve electricity in your house? [NCERT Exemplar]

Ans. (a) Put off the fans and lights when they are not required.

(b) Maximum use of solar radiation.

(c) Use of solar water heating system during winters.

(d) Use of fluorescent tubes or CFL.

Q. 13. What is Narmada Bachao Andolan?

Ans. Narmada Bachao Andolan (Save the Narmada Movement) is a movement to protest about the height of Sardar Sarovar Dam on the river Narmada, thereby criticising large dams for addressing problems.

Q. 14. (a) Why do we need to manage our resources carefully?

(b) Why management of natural resources requires a long term perspective? [CBSE Delhi 2015]

Ans. (a) The resources are limited and with a tremendous increase in human population, the demand for resources is increasing at an exponential rate. Therefore, we need to manage them carefully.

(b) Long term perspective is required to meet the needs of the present as well as for the generations to come.

Q. 15. Why are coal and petroleum categorised as natural resources? Give a reason as to why they should be used judiciously. [CBSE (AI) 2017]

Ans. Coal and petroleum are obtained from nature so they are categorised as natural resources. They should be used judiciously because they are non-renewable resources which cannot be renewed within a short period of time.

Q. 16. Name any two endangered plant and animal species.

Ans. Endangered plant species—*Nepenthes khasiana* (Pitcher plant) and Snow orchid.

Endangered animal species—Indian Wild Ass and Great Indian Rhinoceros.

Q. 17. Name the river with which the following dams are associated.

(i) Tehri dam,

(ii) Sardar Sarovar dam

Ans. (i) Tehri dam on the river Ganga.

(ii) Sardar Sarovar dam on the river Narmada.

Q. 18. Although coal and petroleum are produced by degradation of biomass, yet we need to conserve them. Why? [NCERT Exemplar]

Ans. Both the energy sources, coal and petroleum, take millions of years for their formation. As these resources are being utilised at a much faster rate than their formation, they will be exhausted in the near future. Hence, they need to be conserved.

Q. 19. Name a greenhouse gas produced due to combustion of fossil fuels. Mention its bad effect to the environment.

Ans. The greenhouse gases produced are CO₂ and oxides of nitrogen and sulphur. These cause global warming.

Q. 20. List two problems that may arise by planting trees of single variety over vast tracts of a forest. [CBSE (F) 2015]

Ans. (i) Loss of biodiversity
(ii) Varied needs of the local people can no longer be met.
(iii) Degradation of soil. (Any two)

Q. 21. Why must we conserve our forests? List two factors responsible for causing deforestation. [CBSE (AI) 2017]

Ans. We must conserve forests because of the following reasons:
(a) Forests help in preventing soil erosion.
(b) They protect biodiversity.
(c) They maintain ground water level.
(d) They help in rainfall.
(e) They provide raw materials.
(f) They prevent floods. (any two)

Deforestation is caused by:

(i) Exploitation by industries (ii) increase in population (iii) urbanization (iv) cattle grazing (any two)

Q. 22. What is water harvesting? How can this technique help in the conservation of water?

Ans. Water harvesting is a technique of capturing rain water when it falls and taking measures to keep the water clean.

This water is stored underground that remains unpolluted, it recharges wells and provides moisture for vegetation over a wide area.

Q. 23. List two advantages associated with water harvesting at the community level. [NCERT Exemplar; CBSE (AI) 2017, CBSE Delhi 2015, (F) 2015]

Ans. Advantages of water harvesting at community level:
(i) Recharges ground water. (ii) Mitigates floods and droughts.
(iii) Brings rivers and wells back to life and makes more water available. (Any two)

Q. 24. List any two advantages associated with water stored in the ground. [CBSE (AI) 2015]

Ans. Advantages of water stored in ground:
(i) Recharges the ground water (ii) Prevents evaporation of water
(iii) Prevents breeding of mosquitoes (iv) Prevents contamination
(v) Mitigates flood and drought (Any two)

Q. 25. What is meant by "sustainable management"? Why is reuse considered better than recycling? [CBSE Delhi 2015]

OR

What is sustainable management? Why is reuse considered better in comparison to recycle? [CBSE Delhi 2017]

Ans. A type of management which encourages utilisation of resources that meet current basic human needs while preserving the resources for the needs of future generations is called sustainable management.

Reuse is better as it does not consume energy.

Q. 26. List any two causes for the failure of sustained availability of ground water.

Ans. (i) Loss of vegetation cover.
(ii) Diversion for high water demanding crops.
(iii) Pollution from industrial effluents.
(iv) Dumping of urban waste. (Any two)

Q. 27. Management of forest and wild life resources is a very challenging task. Why? Give any two reasons. [CBSE Delhi 2017]

Ans. (a) Space (Clearing forests) is needed for developmental activities.
(b) Our selfish attitude/ No respect for natural resources.

Q. 28. State two advantages of conserving (i) forests, and (ii) wild-life. [CBSE (AI) 2017]

Ans. (i) Conserving forests helps in (a) retaining sub soil water and (b) checking floods / any other
(ii) Conserving wild life helps in (a) maintaining ecological balance and (b) protecting the nature (or any other)

Q. 29. Why is an equitable distribution of resources essential in a society? List two forces which are against such distribution. [CBSE (AI) 2017]

Ans. Equitable distribution of resources is essential in a society so that the resources reach every individual or has equal rights on usage of resources. It also avoids division of society.

Forces against it are:

(a) More exploitation by industrialists for developmental activities.
(b) Overuse of resources by greedy people, black marketeers.

Q. 30. You being an environmentalist are interested in contributing towards the conservation of natural resources. List four activities that you can do on your own. [CBSE (AI) 2017]

Ans. (a) Using public transport
(b) Limited use of fossil fuels
(c) Using bicycles to go to short distances
(d) Rain water harvesting.

SHORT ANSWER QUESTIONS-II

[3 marks]

Q. 1. (a) Distinguish between renewable and non-renewable sources of energy.
(b) Choose the renewable sources of energy from the following list:
Coal, biogas, sun, natural gas

Ans. (a)

Renewable Sources of Energy	Non-renewable Sources of Energy
1. Those sources of energy which are being produced continuously in nature and are inexhaustible are called renewable sources of energy.	1. Those sources of energy which have been accumulated in nature over a long time and cannot be quickly replaced if once exhausted are called non-renewable sources of energy.
2. Renewable sources of energy are available in unlimited quantities. Example: Air, water, solar radiation, etc.	2. Non-renewable sources of energy are available in limited quantity. Example: Coal, petroleum, natural gas, etc.

(b) Renewable sources of energy from the above list are sun and biogas.

Q. 2. Why are forests considered “biodiversity hot spots”? List two ways in which an individual can contribute effectively to the management of forests and wildlife. [CBSE Delhi 2015]

Ans. Forests are considered ‘biodiversity hot spots’ because large number of life forms (such as bacteria, fungi, fern, nematodes, insects, birds, reptiles, mammals, gymnosperms and angiosperms) are found there. These are the regions with large biodiversity of endangered species, many of them being highly endemic. Such regions are being subjected to large scale destruction and hence are called ‘hot spots’ by ecologists.

Ways in which an individual can contribute:

- (i) Not allowing cutting of trees.
- (ii) Promoting or making people aware about the importance of forests and wildlife.
- (iii) Not using wildlife products like fur coat or any other named product. (Any two)

Q. 3. List four measures that can be taken to conserve forests. [CBSE Delhi 2015]

Ans. Measures need to be taken to conserve forests:

- (i) Reforestation of the deforested areas as soon as possible.
- (ii) Ban on the indiscriminate cutting of trees.
- (iii) Felling of trees for fuel and wood should be avoided.
- (iv) Overgrazing in forests should be discouraged.

Q. 4. Why is replenishment of forest necessary? State four reasons.

Ans. The replenishment of forest is necessary because of the following reasons:

- (i) It is used to conserve soil.
- (ii) It provides shelter to wild animals.
- (iii) It reduces atmospheric pollution.
- (iv) It controls flood and increases frequency of rainfall.

Q. 5. Every one of us can do something to reduce our personal consumption of various natural resources. List four such activities based on 3-R approach. [CBSE Delhi 2015]

Ans. Four activities to reduce consumption of natural resources are :

- (i) Reduce excessive use of natural resources like water, fossil fuels, etc.
- (ii) Reuse of some resources instead of wasting (throwing) them, like empty bottles.
- (iii) Recycle the materials like paper to reduce the pressure on existing natural resources.
- (iv) Changes in lifestyle, personal attitudes and practices.

Q. 6. Explain giving example where active involvement of local people lead to efficient management of forest. [CBSE Delhi 2016]

Ans. In West Bengal, the Sal forests had been very badly degraded. A forest officer involved villagers in protection of Sal forest and gave them employment in silviculture and harvesting operations. Villagers were allowed to collect firewood and fodder on a nominal payment. Within a period of 10 years the previously worthless forests became valuable.

Q. 7. What are the causes of pollution of river Ganga?

Ans. The causes of pollution of river Ganga are as follows:

- (i) Dumping of garbage and untreated sewage from all the towns and cities on the banks of the river.
- (ii) Millions of people bathe and wash their clothes, animals and vehicles in the river water.
- (iii) Releasing chemical effluents from industries directly into the river water.
- (iv) Immersion of ashes or even dead bodies in the river, performed as a ritual. (Any three)

Q. 8. List two main causes of the pollution of water of the river Ganga. State how pollution and contamination of river water prove harmful for the health of the people of neighbouring areas. [CBSE (AI) 2015]

Ans. Causes for pollution of water of river Ganga:

- (i) Dumping of untreated sewage
- (ii) Industrial wastes

Effects:

- (a) Growth of disease-causing microorganisms in the river water.
- (b) The river water becomes more acidic which makes the soil acidic and affects the productivity of crops.

Q. 9. Why must we conserve our forests? List any two causes for deforestation taking place.

Ans. We must conserve our forests for the following reasons:

- (i) Forests produce a large number of products of commercial use such as timber, raw materials for the manufacture of paper, bidi leaves, gums, resins, essential oils. Thus, forests helps in economic development.
- (ii) One of the main aims of conservations is to try and preserve the biodiversity we have inherited because loss of biodiversity may lead to a loss of ecological stability.

Two causes of deforestation are:

- (i) Indiscriminate felling (*i.e.*, cutting) of trees for the purpose of timber, fuel and individual demand of wood.
- (ii) Overgrazing by a large livestock population.

Q. 10. List any four measures for conserving forests.

- Ans.**
- (i) Replenish the trees cut down for timber by planting more trees so that there is no scarcity.
 - (ii) Consumption of wood and charcoal should be discouraged. Instead, use conventional sources of energy such as biogas.
 - (iii) Deforestation should either be stopped or reduced to minimum and should be followed by reforestation.
 - (iv) Acute participation of local people need to be taken for the conservation of forests.

Q. 11. Explain the role of forests in conserving the environment. How do the forests get depleted? What are its consequences?

Ans. Role of forests in conservation of environment:

- (i) Prevent soil erosion and help in maintaining fertility of soil.
- (ii) They provide shelter to wild animals and are areas that sustain biodiversity.
- (iii) They reduce atmospheric pollution.
- (iv) They increase humidity and frequency of rainfall.

The forests get depleted due to forest fires, urbanisation, industrialisation, overgrazing by animals, etc.

The consequences of deforestation will be:

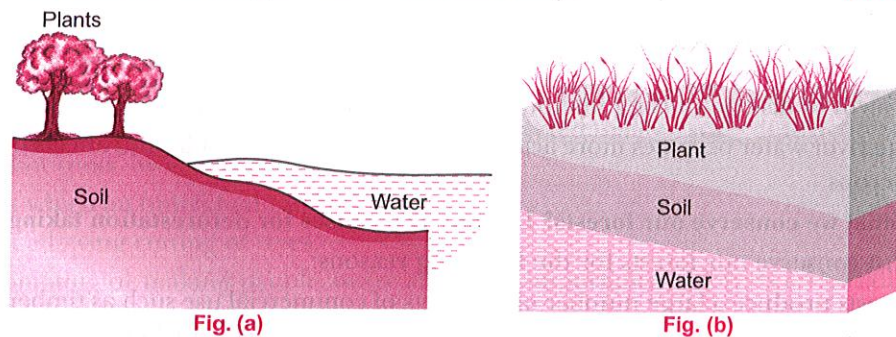
- (i) Change in climate and global warming.
- (ii) Soil erosion and floods.
- (iii) Extinction of wildlife, etc.

Q. 12. Suggest a few measures for controlling carbon dioxide levels in the atmosphere. [NCERT Exemplar]

- Ans.**
- (a) Reduce the consumption of petrol in the automobiles.
 - (b) Use of CNG or clean fuel.
 - (c) Instead of burning litter prepare manure out of it.
 - (d) Treatment of smoke to remove harmful gases before discharging into the atmosphere.
 - (e) Plant more trees.

- Q. 13. (a) Locate and name the water reservoirs in Figure (a) and (b).
 (b) Which has an advantage over the other and why?

[NCERT Exemplar]



- Ans. (a) The water reservoir is a pond in Figure (a) and underground water body in Figure (b).
 (b) Figure (b) has more advantage than Figure (a) because the advantages of water stored in the ground is more than water stored in a pond. For example:
- It does not evaporate.
 - It spreads out to recharge wells.
 - Provides moisture for vegetation over a wide area.
 - It is protected from contamination by animal and human wastes.
 - It prevents breeding of insects.

- Q. 14. List four stakeholders which may be helpful in the conservation of forests. [CBSE (AI) 2016]

Ans. The four stakeholders are:

- Local people living in villages near the forest.
- Industrialists who use forest produce as raw materials.
- Wild life and nature enthusiasts.
- Forest department of the government.

- Q. 15. List any four changes you would like to incorporate in your lifestyle in a move towards a sustainable use of available resources in our country.

- Ans. (i) Save electricity by switching off unnecessary lights and fans.
 (ii) Reuse of used envelopes, plastic bottles.
 (iii) Opt for carpool.
 (iv) Cycling to school.

- Q. 16. In a village in Karnataka, people started cultivating crops all around a lake which was always filled with water. They added fertilisers to their field in order to enhance the yield. Soon they discovered that the water body was completely covered with green floating plants and fishes started dying in large numbers.

Analyse the situation and give reasons for excessive growth of plants and death of fish in the lake.

[NCERT Exemplar]

- Ans. Since people used excessive fertilisers in the fields, they were carried down to the lake during rains. As many fertilisers contain phosphates and nitrates, the water body became enriched with these chemicals. These chemicals promote excessive growth of aquatic plants and the surface of water was completely covered with plants (eutrophication). Depletion of light in the water body and insufficient availability of dissolved oxygen and nutrients resulted in the death of fish.

- Q. 17. We often observe domestic waste decomposing in the bylanes of our homes. List four ways to make the residents aware that the improper disposal of wastes is harmful to the environment and also for their own health. [CBSE (AI) 2015]

Ans. Residents can be made aware by following ways:

- Organising street plays,
- Distributing pamphlets to the residents,
- Reuse/recycle of the waste products,
- Calling meeting of residents, welfare society/association of the locality,
- Advertisements through TV/radio,
- Putting posters/hoardings,
- Segregation of the wastes as per the nature of the waste.

- Q. 18. Why is sustainable management of natural resources necessary? Out of the two—reuse and recycle—which, in your opinion, is better to practise? Give reason. [CBSE (AI) 2015]

- Ans. Sustainable management of natural resources is necessary to sustain the resources for future generation and current basic needs of the population. Reuse is a better practice because it can be done at household level with no expense of energy. It does not cause pollution and is an ecofriendly practice.

- Q. 19. What was Chipko Andolan? How did this Andolan ultimately benefit the local people and the environment? [CBSE (F) 2017, CBSE (AI) 2016]

- Ans. 'Chipko Andolan' (Hug the Trees Movement) was a movement started by women of Reni village in Garhwal, who hugged the tree trunks preventing the contractors from felling the trees. This Andolan quickly spread to other parts of the country and forced the government to rethink their priorities in the use of forest produce. Consequently, the local people were benefitted. The environment was saved from permanent damage. It affected the quality of soil and the sources of water were affected in a good way.

LONG ANSWER QUESTIONS

[5 marks]

- Q. 1. Prepare a list of five activities that you perform daily in which natural resources can be conserved or energy utilisation can be minimised. [NCERT Exemplar]

- Ans. (i) Unused water in the water bottle may be used for watering plants.
 (ii) Close all the taps before you go to sleep.
 (iii) Avoid using a hose pipe for watering plants and instead use a mug.
 (iv) Wash vehicles only when they are dirty.
 (v) Use fan and light only when required.
 (vi) Use solar water heating devices.
 (vii) Use CFL in place of conventional bulbs/tubes.

(Any five)

- Q. 2. What is the importance of forest as a resource? [NCERT Exemplar]

Ans. Forests are renewable resources which

- provide habitat, food and protection to wildlife.
- help in balancing CO₂ and O₂ of atmosphere.
- improve water holding capacity of soil.
- regulate water cycle.

(v) are the source for all essential commodities like fuel wood, timber, pulp and paper, etc., for human beings.

(vi) provide useful products like fruits, resins, gums, essential oils, etc.

Q. 3. Suggest a few useful ways of utilising waste water.

[NCERT Exemplar]

Ans. Waste water can be used for the following ways:

(i) For recharging the ground water.

(ii) Can be used for irrigation.

(iii) Treated municipal water can be used for washing cars or watering the gardens.

(iv) Certain pollutants in sewage water can become fertiliser for various crops.

Q. 4. Explain some harmful effects of agricultural practices on the environment.

Ans. (i) Excessive use of fertilisers changes the chemistry of soil and kills useful microbes.

(ii) Excessive use of non-biodegradable chemical pesticides leads to biological magnification.

(iii) Extensive cropping causes loss of soil fertility.

(iv) Damage to natural ecosystem or habitat.

(v) Excessive use of ground water for agriculture lowers the water table.

Q. 5. (a) What is sustainable development? Why is it necessary?

(b) What is water harvesting? List its four benefits.

[NCERT Delhi (Comp.) 2017]

Ans. Four advantages of water harvesting are

(i) Water collected in ground does not evaporate, but spreads out to recharge wells and provides moisture for vegetation over a wide area.

(ii) The groundwater is also relatively protected from contamination by human and animal waste.

(iii) It provides year round supply of drinking water.

(iv) It does not provide breeding grounds for mosquitoes like stagnant water collected in ponds or artificial lakes.

Q. 6. In the context of conservation of natural resources, explain the terms reduce, recycle and reuse. From among the materials that we use in daily life, identify two materials for each category.

[NCERT Exemplar]

Ans. **Reduce** means to use a material or commodity in lesser quantity, e.g., electricity and water

Recycle means a material that is used once is collected and set back to a manufacturer so that they can make some other useful material from it.

E.g., plastic cups and buckets, glass tumbler paper, metal objects

Reuse means using a thing over and over again instead of throwing it away. It does not involve the process of recycling either in small or in large scale. e.g., used envelopes, plastic carry bags, bottles of jam.

HOTS (Higher Order Thinking Skills)

Q. 1. What is the slogan of Chipko Movement?

Ans. The slogan of 'Chipko movement' is 'Ecology is permanent economy.'

Q. 2. List any four changes you would like to incorporate in your lifestyle in a move towards a sustainable use of available resources in our country.

Ans. Four changes I would like to incorporate in our lifestyle in a move towards a sustainable use of available resources are:

(i) I will collect plastic, paper, glass and metal items and recycle them to use again.

(ii) I will save electricity by switching off unnecessary lights and fans.

(iii) I will prefer walking or cycling than using vehicles.

(iv) I will use potable water for drinking purpose only.

Q. 3. Prejudice against traditional use of forest areas has no basis. Explain giving an example.

Ans. In many forests, the local population may not be allowed to use forests in the manner they have been using them for generations.

This may sometimes be harmful for the sustainability of forests.

When the nomadic shepherds were not allowed in the alpine meadows of the great Himalayan National Park to graze their sheep, it had an adverse effect on the growth of grass. Without regular grazing by sheep, the grass grew very tall and then fell over preventing fresh growth.

Q. 4. Why are local needs and local knowledge of forest dwellers important for maintaining forests?

Ans. Needs and knowledge of the local people needs to be given due consideration for maintaining forests. This gives an insight on how the resources can be used in a sustainable manner.

When vast area of forest land was converted to monocultures of pine, teak, eucalyptus, etc., a large amount of biodiversity was destroyed and needs of local people (leaves for fodder, herbs for medicines, fruits and nuts for food) could no longer be met from such forests.

Q. 5. Is water conservation necessary? Give reasons.

[NCERT Exemplar]

Ans. The total amount of fresh water is more than enough to meet the needs of human beings. But its uneven distribution, wide seasonal as well as yearly fluctuation in rainfalls and water shortage are chronic problems in most parts of the world. To overcome these issues, water conservation is a necessity.

Q. 6. Why are the Arabari forests of Bengal known to be a good example of conserved forest?

[NCERT Exemplar]

Ans. The forest department developed a strategy in which the villagers were involved in the protection of the forest. In return for the labour, the villagers were paid and also had some benefit in harvesting operations. They were allowed to collect wood and fodder on payment of nominal fee. In this way, by the active and willing participation of the local people, the Sal forests of Arabari were conserved.

Q. 7. "Reuse is better than recycling of materials". Give reason to justify this statement.

[CBSE Delhi 2016]

Ans. Reuse refers to the use of the same material again and again.

In reuse of materials no energy is consumed and the resources are saved.

In recycling certain used materials are converted into other useful materials.

In recycling of materials, energy is consumed and the resources may be wasted.

Thus, it can be said that reuse is better than recycling.

Proficiency Exercise

Very Short Answer Questions

[1 mark]

1. "Forests are biodiversity hotspots." Justify this statement. [CBSE (AI) 2016]
2. Name the two elements which are present both in CNG and petroleum.
3. Give an example each from daily life where the household waste can be effectively used and recycled respectively.
4. What does *Chipko* Movement refer to?
5. What important message is conveyed by Amrita Devi Bishnoi Award for wildlife conservation?
6. List four causes of damage to forests.

Short Answer Questions-I

[2 marks]

7. Fossil fuels are being increasingly used as source of energy. List any two reasons for replacing them by alternate sources of energy.
8. List any two reasons due to which construction of large dams is opposed.
9. Although coal and petroleum are produced by degradation of biomass, yet we need to conserve them. Why? Mention two reasons. [NCERT Exemplar]
10. "Narmada Bachao Aandolan" raised issues of how constructions of big dams create environmental problems. Discuss two such issues.
11. Which natural resource are the 'biodiversity hotspots'? Suggest what happens when there is a loss of biodiversity. [CBSE Sample Paper 2016]
12. Why is sustainable management of natural resources necessary? Why is reuse better as compared to recycle? [CBSE Delhi 2017]

Short Answer Questions-II

[3 marks]

13. Why do you think there should be equitable distribution of resources? What forces would be working against an equitable distribution of our resources?
14. Why are the Arabari forests of Bengal known to be a good example of conserved forest?
15. "The prejudice against the traditional use of forest areas have no basis." Explain.
16. Why are environmentalists insisting upon 'sustainable natural resource management'? Give any four reasons.
17. List four advantages of properly managed watershed management. [CBSE Delhi 2016]

PART-B

PERIODIC TEST PAPERS

- PRE-MID TERM TEST PAPER
- MID TERM TEST PAPER
- POST-MID TERM TEST PAPER

CBSE SAMPLE QUESTION PAPER-2018

CBSE EXAMINATION PAPER-2018

MODEL QUESTION PAPERS

- BLUE PRINTS
- MODEL QUESTION PAPERS-1 TO 10 (UNSOLVED)

PRACTICAL BASED QUESTIONS

SCIENCE