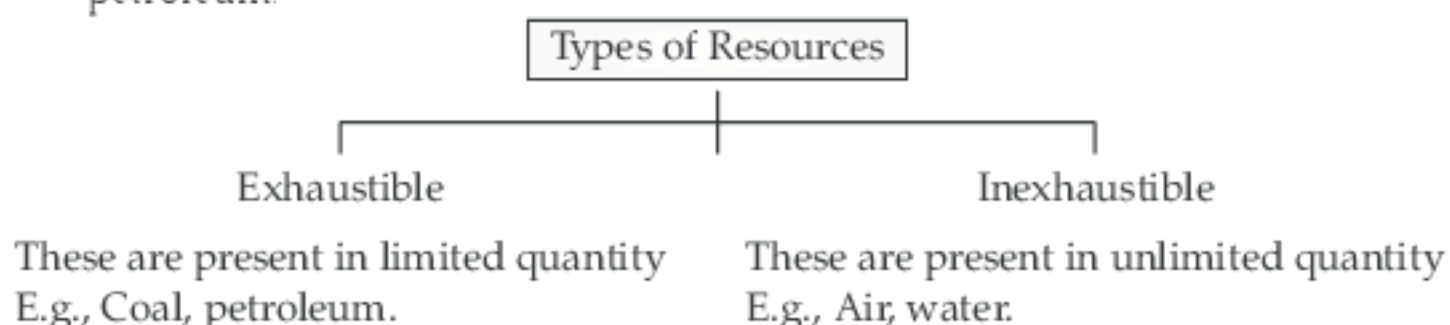


CHAPTER 16 MANAGEMENT OF NATURAL RESOURCES

Quick Review

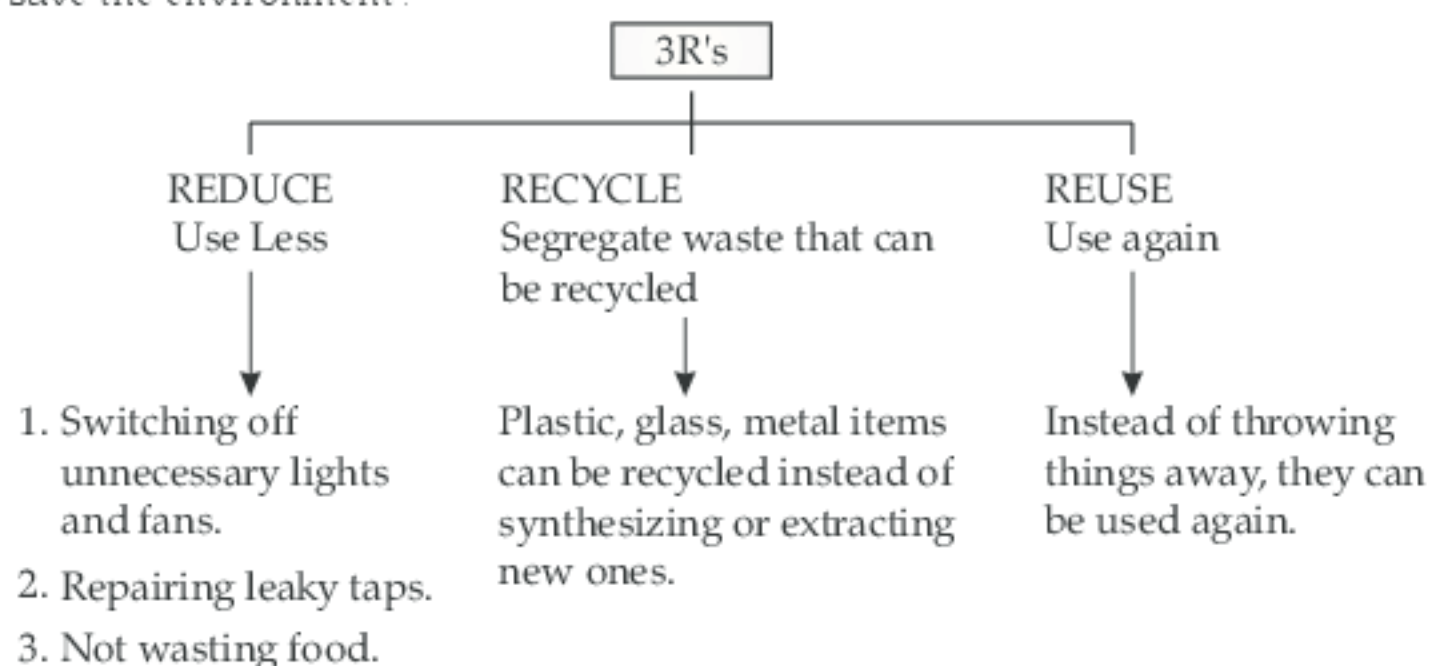
- **Natural Resources** : Anything in the environment 'which can be used' is called natural resource. For example, soil, air, water, forests, wildlife, coal and petroleum.



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 Sustainable Development
 and Biodiversity P. 402

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 Fossil Fuels P. 408

- Coliform is a group of gram-negative rod-shaped bacteria that are found in human intestine. Their presence in water is an indicator of contamination by disease-causing micro-organisms indicating faecal pollution. It includes *Salmonella* and *Escherichia coli*.
- Largely untreated sewage such as garbage and excreta are dumped into Ganga. Pollution is also caused by human activities such as bathing, washing and immersion of ashes or unburnt corpses.
- Industries also contribute in Ganga's pollution by loading chemical effluents and making the water toxic, killing aquatic organisms.
- Ganga Action Plan is a massive multi-core project launched in 1985, which has been undertaken to clean the excess pollution from river Ganga
- **Management of Natural resources**
 Three R's to save the environment :



- **Sustainable Management**
 Management of resource wisely so they meet current basic human needs while preserving them for the needs of future generations.
- The management of natural resources require :
 - (a) Long term perspective so that these will last for generations to come.
 - (b) Ensure equitable distribution of resources so that all economic sections benefit from these resources.
 - (c) Safe disposal of waste.
- The objective of sustainable development is to provide the economic well being to the present and the future generations and to maintain a healthy environment and life support system.
- pH stands for 'Potential of Hydrogen'. It is negative logarithm (base 10) of the hydrogen ion concentration in moles per litres.

- The acidic and basic character of aqueous solutions can be described in terms of hydrogen ion and hydroxide ion concentration.
- Pollutant is the substance that causes a harmful change in the environment, thereby producing adverse effects on living organisms. Some of the common pollutants include pesticides, industrial wastes and emissions, exhaust fumes from vehicles and sewage.
- Biodiversity is the existence of a wide variety of species of plants, animals and micro-organisms in a natural habitat within a particular environment or of genetic variation within a species.
- Forest is a 'biodiversity hotspot' because it is an area where number of species or range of different life form exists.
- Wildlife means all those naturally occurring animals, plants and their species which are not cultivated, domesticated and tamed.
- Conservation is the sensible use of the earth's natural resources in order to avoid excessive degradation and betterment of the environment.
- Afforestation is the practice of transforming an area into forest, usually when trees have not grown there, and involves three types of forestry programmes.
- Social and environmental forestry involves raising of trees for firewood, fodder, agricultural implements for the benefits of rural and tribal community.
- Agro-Forestry is an absolute commercial forestry developed to fulfil the need of various forest-based industries. It is done on the fallow land or free-grazing lands.
- Urban forestry involves growing of ornamental trees along roads, vacant lands and common parts of urban areas.
- Large reservoirs of petroleum have been preserved by nature for millions of years between porous rocks beneath the earth.
- Non-renewable energy sources are energy sources which cannot be replaced easily when they get exhausted and are also called conventional sources of energy. They are used traditionally for many years and take millions of years to form fossil fuels.
- The fossil fuels, coal and petroleum get exhausted and their combustion pollutes our environment, so a judicious use of these resources is necessary.
- Necessity of judicious use of coal and petroleum : The fossil fuels, coal and petroleum will get exhausted and their combustion pollutes our environment, so a judicious use of these resources is necessary.
- When combustion takes place, oxides of carbon, hydrogen, nitrogen and sulphur are formed.
- Carbon monoxide is formed instead of carbon dioxide if there is insufficient air.
- The oxides of sulphur, nitrogen and carbon monoxide are poisonous at high concentrations.
- Carbon dioxide is a greenhouse gas which leads to global warming.
- **Water for all**
 - (a) Water is the basic necessity for all terrestrial forms of life.
 - (b) Rain is an important source of water.
 - (c) Irrigation methods like dams, tanks and canals have been used in various parts of India.
- **Dams**

Dams ensure the storage of adequate water for irrigation and are also used for generating electricity. Various dams have built on rivers to regulate the flow of water.

E.g., (a) Tehri Dam — On river Ganga
(b) Sardar Sarovar Dam — On river Narmada
(c) Bhakra Nangal Dam — On river Satluj
- **Advantages of Dams**
 - (a) Ensures adequate water for irrigation.
 - (b) To generate electricity.
 - (c) Continuous supply of water to cities and towns.
- **Disadvantages of Dams**
 - (a) **Social problems :**
 - (i) Many tribals and peasants are displaced and rendered homeless.
 - (ii) They do not get adequate compensation or rehabilitation.
 - (a) **Environmental problems :**
 - (i) Deforestation
 - (ii) Loss of biodiversity
 - (iii) Disturb ecological balance
 - (c) **Economic problems :**
 - (i) Huge amount of public money is used.
 - (ii) No proportionate benefit to people.

(iii) No equitable distribution of water.

➤ **Rain Water Harvesting**

Rain water harvesting is to make rain water percolate under the ground so as to recharge 'groundwater'.

Know the Terms

- **Natural resources** : They are the stock of the nature such as air, water, soil, minerals, coal, petroleum, forest and wildlife that are useful to mankind in many ways.
- **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.
- **Pollutant** : It is the substance that causes a harmful change in the environment, thereby producing adverse effects on living organisms. Some of the common pollutants include pesticides, industrial wastes and emissions, exhaust fumes from vehicles and sewage.
- **Sustainable Development** : It is the development which can be maintained for a long time without undue damage to the environment.
- **Biodiversity** : It is the existence of a wide variety of species of plants, animals and micro-organisms in a natural habitat with in a particular environment or of genetic variation with in a species.
- **Wildlife** : It means all those naturally occurring animals, plants and their species that are not cultivated, domesticated and tamed.
- **Conservation** : It is the sensible use of the earth's natural resources in order to avoid excessive degradation and betterment of the environment.

TOPIC-1

Natural Resources, Sustainable Development and Biodiversity

Very Short Answer Type Questions

(1 mark each)

- | | |
|---|--|
| <p>Q. 1. What is Biodiversity ? [DDE 2017]
 Ans. Biodiversity is the existence of a wide variety of species of plants, animals and micro-organisms in a natural habitat within a particular environment or of genetic variation within a species. 1</p> <p>Q. 2. What are the two kinds of natural resources ?
 [Board Term II, Delhi Set C, 2009]
 Ans. Water and forest. $\frac{1}{2} + \frac{1}{2}$</p> <p>Q. 3. Name two fossil fuels. [DDE 2017]
 Ans. Coal and Petroleum. $\frac{1}{2} + \frac{1}{2}$</p> <p>Q. 4. Name any two inexhaustible resources.
 [DDE 2017]
 Ans. Air and Water. $\frac{1}{2} + \frac{1}{2}$</p> <p>Q. 5. Name a clean fuel other than LPG and Natural Gas. [DDE 2017]
 Ans. CNG (Compressed Natural Gas) 1</p> <p>Q. 6. Name any two forest products, each of which is the basis for some industry.
 [Board Term II, Delhi Set C, 2009]
 Ans. (i) Pinewood for match box industry.
 (ii) Bamboo for paper industry. $\frac{1}{2} + \frac{1}{2}$</p> <p>Q. 7. Name the tree for which Amrita Devi Bishnoi and others sacrificed their lives.
 [Board Term II, Set QNA4XWT 2014]
 Ans. Khejri trees. [CBSE Marking Scheme, 2014] 1</p> | <p>Q. 8. State the places that are referred as 'biodiversity hotspots'. [Board Term II, SQP, 2013]
 Ans. Forest. 1</p> <p>Q. 9. Who are called Stakeholders ? [DDE 2017]
 Ans. Persons having interest or concern for something are called stakeholders. 1</p> <p>Q. 10. State an instance where human intervention saved the forests from destruction.
 Ans. Human intervention saved the Arabari forest range of West Bengal from destruction with active and willing participation of local community. The Sal forest of Arabari underwent a remarkable recovery. 1</p> <p>Q. 11. State one reason for the conservation of forest and wildlife. [Board Term II, 2011, Set A1]
 Ans. The conservation of forest and wildlife is necessary to restore the ecological balance. 1</p> <p>Q. 12. Name the dam on the river Narmada, whose height Government wanted to raise ?
 [Board Term II, Set (670011) 2012]
 Ans. Sardar Sarovar Dam. 1
 [CBSE Marking scheme, 2012]</p> <p>Q. 13. List two items which can be easily recycled, but we generally throw them in the dust-bins.
 [Board Term II, Outside Delhi Set II, 2014]
 Ans. Steel cans and paper can be easily recycled, but we generally throw them in dustbins. $\frac{1}{2} + \frac{1}{2}$</p> |
|---|--|

Q. 14. Write one negative effect of affluent lifestyle of few persons on the environment.

[Board Term II, Outside Delhi Set III, 2014]

[Board, Delhi Set III, 2013]

Ans. Exploitation and consumption of natural resources will ultimately result in their scarcity. 1

Q. 15. How is solar energy is made useful to the living world ? [Board Term II, Set A1, 2011]

Ans. Plants carry out photosynthesis, which converts the energy of the sun into a form which can be used by the rest of the living world. 1

Q. 16. What does presence of coliform in water indicate ?

Ans. The presence of coliform in water indicates contamination by disease causing micro-organisms. 1

Q. 17. Name the group of bacteria that confirms the contamination of water. [DDE 2017]

Ans. Coliform. 1

Q. 18. Give one example each from your daily life where the domestic waste can be effectively reused and recycled.

[Board Term II, Outside Delhi Set I, 2014]

Ans. Reuse : We can reuse the empty bottles of jam, pickles etc. for the storage purposes.

Recycle : We can recycle old newspapers, aluminium cans etc. $\frac{1}{2} + \frac{1}{2}$

Q. 19. How does increasing demand for energy adversely affect our environment ? [Delhi 2010]

Ans. To meet the increased demand for energy, more and more natural resources are exploited. Pollutants are emitted during exploitation and use of natural resources which affect our environment. 1

Q. 20. "We need to manage our resources". List two reasons to justify this statement.

[Board Term, Delhi Set III, 2014]

Ans. We need to manage natural resources because of the reasons listed below :

- A majority of natural resources is limited.
- Human population is increasing at a tremendous rate.
- Utilization of natural resources is increasing at an exponential rate.
- Need to conserve resources for future generations.

(Any two) $\frac{1}{2} + \frac{1}{2}$

Short Answer Type Questions-I

(2 marks each)

Q. 1. What is sustainable development ? State its two main objectives. [Board Term II, Foreign I, 2016]

Ans. The development which can be maintained for a long time without undue damage to the environment. 1

Two objectives :

- To provide the economic well being to the present and future generation. $\frac{1}{2}$
- To maintain a healthy environment and life support system. [CBSE Marking Scheme, 2016] $\frac{1}{2}$

Q. 2. What is meant by "Sustainable management" ? Why is reuse considered better than recycling.

[Board Term II, Delhi I, 2015]

Ans. "Sustainable development is the development which can be maintained for a longtime without undue damage to the environment. Ways to achieve sustainable development are to plant more trees. Recycling needs additional energy to make a usable item. Reuse does not require additional energy and hence, is better than recycle. 1+1 [CBSE Marking Scheme, 2015]

Q. 3. What is sustainable management ? Why is reuse considered better in comparison to recycle ?

[Delhi 31/1/1 2017]

Ans. Since natural resources are limited, if they are over exploited for short term gains, future generation will suffer heavily. 1

Reuse does not consume energy. 1

[CBSE Marking Scheme, 2017]

Detailed Answer:

Sustainable management is a resource management technique which aims to conserve the resources, use them efficiently and avoid their misuse for individual purpose such that they are conserved for future.

Reuse is better than recycle because :

- Reuse saves energy by using material again without any changes
- Reuse prevents environmental pollution.
- Reuse saves time as same material is used again.

(Any two) 2

Q. 4. What is meant by biodiversity ? List two advantages of conserving forests and wildlife.

[Board Term II, O.D. Set II, 2015]

Ans. Biodiversity is the existence of a variety of species of plants, animals and micro-organisms in a natural habitat within a particular environment.

Two reasons each for conserving

- Forest :** (i) It helps in retaining the sub-soil water
(ii) It checks flood.
- Wildlife :** (i) To maintain ecological equilibrium,
(ii) To protect the nature. 1+1

Q. 5. 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 ?

[Delhi 31/1/1 2017]

Ans. Former leads to huge immediate profits/selfish gains while latter leads to sustainable approach so that the resource may last for future generations too. 1 + 1

[CBSE Marking Scheme, 2017]

Detailed Answer.

Exploitation of natural resources with short term gains aims at providing all the benefits to the current generation for their growth and development without any consideration for the future.

In case of long term perspective, the resources are utilised in a more judicious manner so that they are also conserved for the future generations. It ensures uniform distribution among the people. 1 + 1

[A] Q. 6. What is meant by three types of 'R' (3-R's) to save the environment? Explain with example how would you follow the 3-R's in your School to save the environment.

[Board Term II, Foreign Set I, 2015]

Ans. Reduce, Reuse, Recycle (for all the three) 1
(only $\frac{1}{2}$ mark if two are mentioned)

Examples :

- (i) Switch off the fans and bulbs when not in use,
- (ii) Reuse of paper, polythene bags, etc.,
- (iii) Reduce the wastage of water / paper or any other item

(Or any other relevant example) (Any two) $\frac{1}{2} \times 2$

[CBSE Marking Scheme, 2015]

[A] Q. 7. Why is sustainable management of natural resources necessary? Out of the two methods reuse and recycle which one would you suggest to practice and why?

[Board Term II, Outside Delhi Set I, 2014]

Ans. Sustainable management of natural resources is necessary to increase the overall life of natural resources especially non-renewable resources and also to control the environmental pollution.

Both reuse and recycle are the good choices.

Reuse : If we reuse something then the cost of recycle will be saved.

Recycle: It is not necessary that each and everything can be reused, so after getting recycled the life of the resource will be enhanced. $\frac{1}{2} + \frac{1}{2} + 1$

[U] Q. 8. Management of forest and wild life resources is a very challenging task. Why? Give any two reasons. [Delhi 31/1/2017]

Ans. Local people are dependent on forest produce for various aspects of their life, therefore they develop practices to ensure that the resources are used in sustainable manner. 1 + 1

[CBSE Marking Scheme, 2017]

Detailed Answer.

Management of forest and wildlife resources are considered as a challenging task because :

- (i) There are many stakeholders of forest. Management of forest and wildlife has to take into account the interests of all these stakeholders which become a challenging task.

- (ii) Industries would consider the forest as merely a source of raw material for its factories and huge interest groups lobby the government for access to these raw materials at artificially low manage the forest and wildlife resources. 2

[U] Q. 9. Explain how would the involvement of local people be useful for successful management of forests. [Delhi 31/1/2017]

Ans. The involvement of local people is useful for successful management of forests in the following ways :

- (i) People should be aware of the fact that diminishing forest cover would disturb the ecological balance.
- (ii) Phenomena like forest fires must be reported immediately to the forest officers. The sooner the action taken more will be the area which can be protected. Forest fires purposely caused by local people must not be practiced. 1 + 1

[A] Q. 10. Write two advantages of sustainable management of natural resources. Out of the two—reuse and recycle—Which is better and why? [Board Term II, Foreign Set III, 2015]

Ans. Two advantages :

- (i) Provides the resources for the present generation. $\frac{1}{2}$

- (ii) Preserve the resources for the future generation as well. $\frac{1}{2}$

Reuse is better than recycling because it does not involve use of energy. $\frac{1}{2} + \frac{1}{2}$

[CBSE Marking Scheme, 2015]

[A] Q. 11. Why is sustainable management of natural resources necessary? Which one out of reuse and recycle would you suggest to practice and why? [Board Term II, O.D. Set I, 2013]

Ans. 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. Sustainable management is necessary to provide the economic well being to the present and the future generations and to maintain a healthy environment and life support system.

Reuse can be practised by use, i.e., as we can reuse plastic bottles and envelopes. 2

[R] Q. 12. (i) What is Chipko movement?

(ii) Why should we conserve forests?

[Board Term II, Set (2022) 2012]

Ans. (i) Chipko movement was started in early 1970s in village Reni in Garhwal by the women of Uttarakhand to stop felling of forest trees of their area. 1

- (ii) We should conserve forests because they maintain biological diversity, provide food and safeguard the future of the tribals besides providing ecological balance of ecosystems. 1

[CBSE Marking Scheme, 2012]

Q. 13. List four stakeholders of forests.

[Board Term II, O.D. Set III, 2016]

[Board Term II, Set (2024), 2012]

OR

List four stakeholders which may be helpful in the conservation of forests.

[Board Term II, O.D. Set III, 2016]

Ans. (i) The people living in or around the forests who are directly dependent on forest product.

(ii) The Forest Department of the government which owns the land and controls the resources from forests.

(iii) The industrialists who use the forest produce, but are not dependent on the forest of a particular area.

(iv) The wildlife and nature enthusiasts who want to conserve nature in its present form.

4 × ½ = 2

[CBSE Marking Scheme, 2016]

OR

[Topper Answer, 2016]

Q. 14. Why do we need alternative sources of energy ?

Give two reasons. [Board Term II, SQP, 2013]

Ans. (i) Fossil fuels are conventional sources of energy that will not last longer.

(ii) To reduce air pollution.

1 + 1

Q. 15. What is the role of wildlife and nature enthusiasts as stakeholders with reference to forests ?

[Board Term II, SQP, 2013]

Ans. They are in no way dependent on forests, but have a considerable stake in their management. They recognize the need to preserve biodiversity as a whole.

Q. 16. Which natural resource are the 'biodiversity hot spots' ? Suggest what happens when there is a loss of biodiversity ? [Board Term II, SQP 2016]

Ans. Forest are the natural resources known as biodiversity hot spots.

When there is a loss of biodiversity there is a loss of ecological stability.

1 + 1

Q. 17. How did 'Chipko Andolan' ultimately benefit the local people ? Explain briefly.

[Board Term II, Foreign II, 2016]

[O.D. Set I, 2016]

Ans. The Government had to rethink their priorities in the use of forest produce and change their forest policies, this ensured a stable availability of the forest produce to the villagers.

1

It led to efficient management of forest and also resulted in conservation of soil and water which ultimately benefitted the local people.

1

[CBSE Marking Scheme, 2016]

Q. 18. Explain giving example where active involvement of local people lead to efficient management of forest.

[Board Term II, Delhi Set I, 2016]

Ans. (i) In West Bengal the Sal forests had been very badly degraded.

½

(ii) A forest officer involved villagers in protection of Sal forest and gave them employment in silviculture and harvesting operations.

½

(iii) Villagers were allowed to collect firewood and fodder on a nominal payment.

½

(iv) Within a period of 10 years the previously worthless forests became valuable.

½

[CBSE Marking Scheme, 2016]

Q. 19. "Reuse is better than recycling of materials". Give reason to justify this statement.

[Board Term II, Delhi Set II, 2016]

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

½

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

½

(iii) In recycling certain used materials are converted into other useful materials.

½

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

½

[CBSE Marking Scheme, 2016]

Q. 20. Forests are "biodiversity hot spots." Justify this statement. [Board Term II, O.D. Set II, 2016]

Ans. The measure of biodiversity of an area is the number of species found there. Since, in a forest we can find a range of different life forms of plants and animals the forests are the biodiversity hot spots.

[CBSE Marking Scheme, 2016] 1 + 1

Q. 21. Why are forest considered "biodiversity hot spots"? List two ways in which an individual can contribute effectively to the management of forests and wildlife?

[Board Term II, Delhi Set II, 2015]

Ans. Biodiversity is measured by the number of different life forms found in an area. In a forest, various species are available which include bacteria, fungi, ferns, plants, nematodes, insects, birds, reptiles and mammals. Forests are therefore, called biodiversity hot spots.

An individual can contribute in management of forest and wildlife by

- (i) Avoiding cutting of forest and killing of wildlife.
- (ii) Educating people about the importance of forest and wildlife in our life.

1 + 1

[CBSE Marking Scheme, 2015]

Q. 22. Mention the steps taken by West Bengal Government to protect badly degraded Sal forests.

[Board Term II, Set (2008), 2012]

Ans. (i) Involvement of local people by giving them employment in sericulture and harvesting operation.

1

- (ii) Allowing collection of fuel, wood and fodder on payment of normal fee.

1

[CBSE Marking Scheme, 2012]

Q. 23. What damage is caused to forests by the following:

- (i) Building rest houses for tourist in national parks.
- (ii) Grazing domestic animals in national parks.

[Board Term II, Set-FF7NBE6, 2015]

Ans. (i) Disturbance in natural habitat. Waste disposal, restriction in movement, poaching / hunting.

- (ii) Ecological imbalance less food for herbivores, overgrazing might result in loss of habitat.

1 + 1

[CBSE Marking Scheme, 2015]

Q. 24. List four measures that can be taken to conserve forests.

[Board Term II, Delhi Set I, 2015]

Ans. Four measures taken to conserve forest are :

- (i) Deforestation should be banned.
- (ii) Forest resources should be used in an environmentally and developmentally sound manner.
- (iii) We should use natural resources cautiously.
- (iv) Afforestation should be done.

$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

[CBSE Marking Scheme, 2015]

Q. 25. Everyone of us can do something to reduce our personal consumption of various natural resources. List four such activities based on 3-R approach.

[Board Term II, Delhi Set III, 2015]

Ans. (i) By switching off unnecessary light and fans to save electricity.

- (ii) By repairing leaky taps to save water.

(iii) Not to dump the materials that can be recycled like paper.

(iv) Plastic bottles of food items can be used to store things.

$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

[CBSE Marking Scheme, 2015]

Q. 26. (i) Why do we need to manage our resources carefully?

(ii) Why management of natural resources requires a long term perspective?

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

(ii) Management of natural resources requires long term perspective to fulfil the needs and aspiration of future generation.

1 + 1

Q. 27. List four causes of damage to forests.

[Board Term II, Foreign Set I, 2016]

Ans. (i) By the local people for the fulfilment of their daily needs.

$\frac{1}{2}$

(ii) By industrialists—deforestation for industrial needs.

$\frac{1}{2}$

(iii) Deforestation for developmental projects – building, roads, dams etc.

$\frac{1}{2}$

(iv) By tourists or in making arrangements for tourists.

[CBSE Marking Scheme, 2016] $\frac{1}{2}$

Q. 28. List two problems that may arise by planting trees of single variety over vast tracts of a forest.

[Board Term II, Foreign Set II, 2015]

Ans. (i) Loss of biodiversity.

(ii) Varied needs of the local people can no longer be met.

(iii) Degradation of soil.

(Any two) 1 + 1

[CBSE Marking Scheme, 2015]

Q. 29. "Industrialisation has adversely deteriorated the environment" Give four reasons in support of this statement.

[Board Term II, Foreign Set II, 2016]

Ans. (i) Air / water / noise / soil pollution.

(ii) Loss of biodiversity because of deforestation.

(iii) Nuclear radiation emitted by nuclear power plants.

(iv) Acid rain / global warming.

$4 \times \frac{1}{2}$

[CBSE Marking Scheme, 2016]

Q. 30. List four disadvantages of burning fossil fuels.

[Board Term II, Set (2024) 2012]

Ans. (i) Air pollution is caused by burning of fossil fuels.

$\frac{1}{2}$

(ii) CO_2 produced by burning fossil fuels produces greenhouse effect.

$\frac{1}{2}$

(iii) They are non-renewable sources of energy.

$\frac{1}{2}$

(iv) The oxides of carbon, nitrogen and sulphur that are released on burning fossil fuels are acidic oxides which lead to acid rain.

$\frac{1}{2}$

[CBSE Marking Scheme, 2012]

Short Answer Type Questions-II

(3 marks each)

- Q.1.** Why must we conserve our forests ? List any three causes for deforestation to take place.

[Board Term II, Set (67001), 2012]

Ans. We must conserve our forest because :

- (i) They are source of raw materials for our industries.
- (ii) They provide us with wood to make furniture and buildings.
- (iii) They are source of medicine.
- (iv) They provide firewood and food. (Any three) $1\frac{1}{2}$

Causes of deforestation are :

- (i) Overgrazing
- (ii) Building roads and dams
- (iii) Natural calamities like forest fire. (Any three) $1\frac{1}{2}$

[CBSE Marking Scheme, 2012]

- Q.2.** How does recycling of waste materials help in ecological balance ?

Ans. Recycling of waste materials can help in maintaining ecological balance in the following ways :

- (i) By recycling the biodegradable wastes the nutrients present in them are returned to the nutrients pool of the environment like water and soil. These are reabsorbed by plants and utilised *e.g.* biogas from cow dung provide large amount of energy and the residue acts as a good manure.

- (ii) Certain non-biodegradable waste like rubber and plastic pose serious disposal problems. Such substances can be recycled to manufacture usable articles. *e.g.* recycling of used polythene and aluminium foils. $1\frac{1}{2} + 1\frac{1}{2}$

- Q.3.** What change can you make in your habits to become more environment friendly ?

Ans. The change in our habits that can be made to become more environment friendly are as follows :

- (i) Save water by repairing the leaked taps.
- (ii) Switch off unnecessary light and fans.
- (iii) Say 'No' to plastic bags, disposable plastic cups.
- (iv) Reuse the things again and again.

(Any three) $1+1+1$

- Q.4.** Suggest three ways to maintain a balance between environment and development to survive. [Board Term II, Delhi 2010]

Ans. The three ways to maintain a balance between environment and development to survive are :

- (i) Forest resources should be used in an environmentally and developmentally sound manner.
- (ii) Instead of using non-renewable natural resources use of renewable natural resources should be preferred.
- (iii) Waste water generated by industries should be recycled. $1+1+1$

Long Answer Type Questions

(5 marks each)

- Q.1.** Write any five ways in which the locals and tribal are dependent on the forest ?

Ans. (i) The local people obtain large quantities of firewood, timber and thatch from the forests. 1

(ii) Bamboo is used to make slats for huts and baskets for collecting and storing food materials. 1

(iii) Implements for agriculture, fishing and hunting are largely made of wood. 1

(iv) Forests are sites for fishing and hunting. 1

(v) Also they gather fruits, nuts and medicines from the forests. 1

- Q.2.** (i) Why is reusing even better than recycling ? List any two reasons.

(ii) Give any three examples of human activities leading to destruction of forests.

Ans. (i) Reusing is even better than recycling because the process of recycling uses some energy. In the 'reuse' strategy, you simply use things again and again, without using any energy for generating something new. 2

(ii) (a) Clearing of forest land for agriculture.

(b) Building of roads through forests.

(c) Felling of large number of trees for furniture.

 $1 \times 3 = 3$

- Q.3.** (i) By 1983, what was the value of the previously worthless Sal forests in the Arabari forest range of Midnapore district ?

(ii) Name the way to capture the rain water when it rains, store that water above ground or charge the underground and use it latter.

(iii) Write any three negative effects caused by deforestation.

Ans. (i) By 1983, the value of the previously worthless Sal forests in the Arabari forest range of Midnapore district was estimated to be about 12.5 crores. 1

(ii) Rain water harvesting. 1

(iii) (a) Reduced availability of forest products.

(b) Deterioration in the quality of soil.

(c) Reduction in the sources of water. $1 \times 3 = 3$

TOPIC-2

Water Conservation and Fossil Fuels

Very Short Answer Type Questions

(1 mark each)

- [R] Q.1. What is Coliform ? [KVS 2017]
[Board Term II, Set (2008) A1, 2012]

Ans. It is a group of bacteria found in human intestine whose presence in water indicates contamination by disease causing micro-organisms. 1
[CBSE Marking Scheme, 2012]

- [R] Q.2. Define non-renewable sources of energy.
Ans. Non-renewable energy sources are which cannot be replaced easily when they get exhausted and are also called conventional sources of energy.

Example : Fossil Fuels. 1

- [R] Q.3. Name the most common practice used to recharge ground water. [DDE 2017]
Ans. Rain water harvesting.

- [A] Q.4. How does mining cause environmental pollution ?
[Board Term II, Set-67003 B1, 2012]

Ans. Mining causes pollution because of the large amount of the slag which is discarded for every tone of the metal extracted. 1
[CBSE Marking Scheme, 2012]

- [R] Q.5. Name two indigenous water saving methods.
[Board Term II, Set FF7NBE6, 2015]

Ans. Digging small pits and lakes. 1
[CBSE Marking Scheme, 2015]

- [R] Q.6. List two measures that you would suggest for the better management of water resources.
[Board Term II, Delhi Set II, 2014]

Ans. Two measures for the better management of water resources are :

- (i) Rainwater harvesting
- (ii) Construction of dams. $\frac{1}{2} + \frac{1}{2}$

- [A] Q.7. Mention one reason of discontentment among the people who have been displaced by building dams. [Board Term II, Set 8 XSVHLC, 2014]

Ans. It displaces large number of local people without adequate compensation and rehabilitation. 1

- [R] Q.8. List two causes of pollution of river Ganga.
[Board Term II, Foreign Set II, 2014]

Ans. Major causes of pollution of river Ganga :
(i) Release of industrial waste into the river.

- (ii) People use river water for domestic purposes and add pollutants like surf, detergents, soap to the river.

- (iii) People flow food items, images of gods and goddesses into the river due to ritualistic reasons. (Any two) $\frac{1}{2} + \frac{1}{2}$

- [A] Q.9. Water is a valuable resource. List two ways, that you would suggest every family member to save this resource.

[Board Term II, Delhi Set I, 2015]

Ans. Turning-off the taps when not in use.
Checking the leaking water pipelines and getting them repaired. $\frac{1}{2} + \frac{1}{2}$

- [U] Q.10. Why is reuse better than recycle ? [DDE 2017]
Ans. Reuse is better than recycle as it saves energy. 1

- [A] Q.11. List any two measures that you suggest for better management of water resources.
[Board Term II, Delhi III, 2013]

Ans. (i) Roof top rain water harvesting. $\frac{1}{2}$
(ii) Watershed management. $\frac{1}{2}$

Ans. Two change that can be made in our habits to reduce the consumption of electricity or water are :

- (i) Switch off light and fans when not in use.
- (ii) Leaked taps should be repaired immediately. $\frac{1}{2} + \frac{1}{2}$

- [R] Q.12. List any two traditional systems of water harvesting. [Board Term II, Foreign, 2008]

Ans. Two traditional systems of water harvesting are :
(i) Collection of water in ponds.
(ii) Construction of small earthen dams. $\frac{1}{2} + \frac{1}{2}$

- [A] Q.13. State two change that you can make in your habits to reduce the consumption of electricity or water. [Board Term II, Set A1, 2010]

OR

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

Ans. We can be eco-friendly by :

- (i) Using the principal of 3 R's i.e., Reduce, Reuse and Recycle.
- (ii) Putting off unnecessary light and fans.
- (iii) Practice rainwater harvesting. $\frac{1}{2} + \frac{1}{2}$

- [R] Q.14. Give two uses of coal.
Ans. Coal is used in the thermal power stations and in steam engine. 1

Short Answer Type Questions-I

(2 marks each)

- [U] Q.1. What is water harvesting ? How can this technique help in the conservation of water ?

[Board Term II, O.D. Set II, 2016]

[Board Term II, O.D. Set III, 2014]

Ans. (i) Water harvesting is a technique of capturing rain water when it falls and taking measure to keep the water clean. 1

- (ii) Water is stored underground that remains unpolluted, it recharges wells and provides moisture for vegetation over a wide area. 1

[CBSE Marking Scheme, 2016]

U Q.2. Explain two main advantages associated with water harvesting at the community level. [OD 31/1 2017] 2

Ans,

[Topper Answer, 2017]

Detailed Answer :

Two main advantages associated with water harvesting at the community level are :

- (i) Water does not evaporate instead it percolates into the ground. Therefore, results in the recharging of wells.
- (ii) The stored water provides moisture to the vegetation in and around the area. 1 + 1 = 2

U Q.3. State the main purpose of water harvesting system and also mention the source which fills the pond behind harvesting structures.

[Board Term II, Set-QNA4XWT 2014]

Ans. The main purpose of water harvesting system is to help in recharge of ground water.

Rain is the source which fills the pond behind harvesting structures. 1 + 1

A Q.4. List and explain any two advantages associated with water harvesting at community level.

[Board Term II, Delhi I, 2013]

Ans. Water harvesting at the community level is capturing, collection and storage of rain water and surface run off for filling either small water bodies or recharging ground water. This is carried out through water shed management, check dams, earthen dams, roof top harvesting and filter wells in flood drains. 1

Benefits :

- (i) It ensures water availability in non-rainy season.
- (ii) Water becomes available for drinking as well as irrigation. $\frac{1}{2} + \frac{1}{2}$

U Q.5. "Management of natural resources requires a long-term perspective." Comment on the statement. [Board Term II, Set-2025, 2012]

Ans. (i) Ground water level increases. $\frac{1}{2}$

- (ii) Ground water keeps the layers of soil above it moist and prevents loss of water by evaporation. $\frac{1}{2}$

So that they can last for generations to come since their source is limited. To ensure equal distribution of natural resources to all people. 1

[CBSE Marking Scheme, 2012]

U Q.6. (a) What is an elixir of life, a very important natural resources. Your Science teacher wants you to prepare a plan for a formative assessment activity, "How to save water, the vital natural resource". Write any two ways that you will suggest to bring awareness in your neighbourhood, on 'how to save water'.

- (b) Name and explain any one way by which the underground water table does not go down further. [OD 31/1 2017]

Ans. (a) Two ways of creating awareness.

Door to door campaigning

Nukkad Natak/ any other method. 1 + 1

- (b) Rain water harvesting with explanation/ preventing over extraction of underground water/ any other method. $\frac{1}{2} + \frac{1}{2}$

[CBSE Marking Scheme, 2017]

Detailed Answer :

- (a) Two ways to bring awareness on "how to save water" are :

- (i) By organising a demonstration of the practices in the households on how we can minimize the wastage of water.
- (ii) By organising an awareness week every year with poster competitions on "how to save water. 2
- (b) One way by which the underground water table does not go down further is by rainwater harvesting. We can collect rainwater and store it in the form of pits and lakes ensuring that the water seeps through the soil and recharges the aquifers.

U Q.7. What is watershed management system ? List two benefits derived by the communities that participate in this system.

[Board Term II, OD Set II, 2014]

Ans. Watershed management is the study of the characteristics of a watershed. It helps to manage water quality, water supply, and drainage and rainwater flow. It also ensures sustainable maintenance planning of a watershed.

Benefits of a watershed management system :

- (i) Water quality is strictly maintained.
- (ii) Distribution of water is equal and sustainable.
- (iii) Controlling the flow of rain water can help to protect the land in flood conditions.

(Any two) $1 + \frac{1}{2} + \frac{1}{2}$

A Q.8. List four advantages of properly managed watershed management.

[Board Term II, Delhi Set I, 2016]

Ans. Advantages of watershed management :

- (i) mitigates drought and floods.
 - (ii) increase the life of the dams and reservoirs downstream.
 - (iii) increases the biomass production and thereby the income of the watershed community.
 - (iv) helps in maintaining ecological balance by scientific conservation of soil and water. (Or any other)
- [CBSE Marking scheme, 2016] $4 \times \frac{1}{2} = 2$

A Q.9. List four advantage of water stored in the ground. [Board Term II, Set-2021, 2012]

- Ans.** (i) Water spreads to recharge wells. $\frac{1}{2}$
 (ii) Provides moisture to vegetation over a wide area. $\frac{1}{2}$
 (iii) Does not provide breeding ground to mosquitoes. $\frac{1}{2}$
 (iv) Protected from contamination. $\frac{1}{2}$
- [CBSE Marking Scheme, 2012]

A Q.10. List four advantages of conserving water in the form of ground water.

[Board Term II, Delhi I, 2015]
 [Board Term II, O.D. Set II, 2015]

Ans. Advantages of ground water :

- (i) It does not evaporate.
- (ii) Spreads out to recharge wells.
- (iii) Provides moisture for vegetation over a large area.
- (iv) Does not provide breeding ground for mosquitoes.

[CBSE Marking Scheme, 2015] $\frac{1}{2} \times 4 = 2$

R Q.11. List any two advantages associated with water stored in the ground.

[Board Term II, Set O.D. Set, II, 2015]

Ans. Two advantages associated with water stored in the ground are :

- (i) It does not evaporate and provides moisture for vegetation.
- (ii) It is relatively protected from contamination by human and animal waste. $1+1$

[CBSE Marking Scheme, 2015]

A Q.12. You being an environmentalist are interested in contribution towards the conservation natural resources. List four activities that you can do on your own. [OD 31/3 2017]

Ans. The four activities that we can do on our own are :

A Q.17. Why do we seek construction of dams ? Mention any two problems faced with the construction of large dams ? [KVS-2014]

OR

A The construction of large dams leads to social and environment problems. List two problems of each category. [Board Term II, O.D. Set III, 2016]

Ans. Social problems :

- (i) Many people are rendered homeless.
- (ii) Displacement of large number of tribals without due compensation.
- (iii) Migration into the cities for settlements.

(Any two) $2 \times \frac{1}{2} = 1$

Environmental problems :

- (i) Deforestation / loss of biodiversity
- (ii) Soil erosion / ecological imbalance

[CBSE Marking Scheme, 2016] $2 \times \frac{1}{2} = 1$

- (i) Reduce the use of water.
- (ii) Recycle the waste materials like paper.
- (iii) Avoid the use of non-renewable sources of energy.
- (iv) Planting trees. 2

A Q.13. Why is an equitable distribution of resources essential in a Society ? List two forces which are against such distribution. [OD 31/2 2017]

Ans. Equitable distribution of resources is essential in a society because there will be continuous flow of sufficient resources to, every section of the society. Also, the resources will not be exploited at the hands of a few persons. 1

Two forces which are against such distribution are :

- (i) Limited amount of resources in nature. 1
- (ii) Excessive consumption by the rich. 1

R Q.14. Why are coal and petroleum categorised as natural resources ? Give a reason as to why they should be used judiciously. [OD 31/3 2017]

Ans. Coal and petroleum are formed from the degradation of bio-mass subjected to various biological and geological process over a million of years. Thus, cannot be manufactured by humans. Therefore, coal and petroleum are categorised as natural resource. 1

They should be used judiciously as they cannot be manufactured by humans and naturally it takes million of years to form. 1

A Q.15. "Burning of fossil fuels results in global warming". Give reasons to justify this statement. [Board Term II, O.D. Set I, 2016]
 [Foreign 2017]

Ans. Burning of fossil fuels produces green house gases (CO , CO_2 , water vapour, oxides of nitrogen, sulphur). High concentration of CO_2 causes global warming.
 [CBSE Marking Scheme, 2016] $1 + 1$

A Q.16. Burning of fossil fuel is causing great environmental concern. Mention the consequences of combustion of fossil fuels. [Board Term II, Set GFUTB86, 2015]

Ans. Combustion of fossil fuels release oxides of carbon, nitrogen and sulphur. $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$
 [CBSE Marking Scheme, 2015]

OR

[Topper Answer, 2016]

Q. 18. What is meant by wildlife ? How is it important for us ? [Delhi 31/1/3 2017]

Ans. Wildlife — All naturally occurring plants, animals and their species which are not cultivated / domesticated / trained

Importance :

- (i) Help in maintaining ecological balance
 - (ii) Provide great aesthetic value for human beings
 - (iii) They have economical importance also (any two)
- [CBSE Marking Scheme, 2017] $\frac{1}{2} + 2$

Detailed Answer :

Wildlife refers to all naturally occurring plants, animals, birds and other life forms which are found in the forests and are not domesticated.

Importance of wildlife :

- (i) It is essential to maintain the ecological balance of the nature.
- (ii) It provides a great biological diversity in an area.
- (iii) It serves as a source of various valuable products such as drugs, lac, honey, ivory, etc. (Any two) 1+1

Q. 19. State two advantages of conserving (i) forests, and (ii) wild-life.

[OD 31/1 2017]

Ans.

[Topper Answer, 2017]

- Q.20. 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. [Board Term II, Foreign Set II, 2015]**

Ans. (i) Social problems

(ii) Economic problems

(iii) Environmental problems.

Solution : (i) Adequate rehabilitation.

(ii) Compensation to the displaced persons.

(iii) Afforestation. [CBSE Marking Scheme, 2015] 1 + 1

- Q.21. List three problems which arise due to construction of big dams. Suggest a solution of these problems.**

[Board Term II, Delhi Set II, 2014]

Ans. The three types of problems that arise because of the construction of big dams are :

(i) Environmental problems : Construction of dams across rivers leads to deforestation, which results in the loss of biodiversity. This disturbs the natural ecosystem.

Solution : We should plant more and more trees.

(ii) Social problems : Construction of dams involves the building of large reservoirs. In some cases, constructing a reservoir may result in the flooding of nearby towns and villages. A large number of people get displaced as a direct consequence of the construction of reservoirs. In such cases, the government has to rehabilitate the people living in these areas, which, in itself, is a huge task.

Solution : The government should first relocate the people to a safer place where they can continue with their daily work. If, in case, the life of the people gets affected, the government should provide proper compensation to those people.

(iii) Economic problems : Construction of dams requires a huge amount of monetary investments.

Solution : Construction of dams can be profitable if they are used for the generation of electricity.

(Any two) 2

- Q.22. 'Narmada Bachao Andolan' raised issues of how constructions of big dams create environmental problems. Discuss two such issues.**

[Board Term II, Set-2045, 2012]

Ans. (i) Flooding of neighbouring areas.

(ii) Displacement of locals.

(iii) Increased soil salinity. (Any two points) 1+1

[CBSE Marking Scheme, 2012]

- Q.23. "Affluent life style has a negative effect on the environment". Justify this statement with the help of an example.**

[Board Term II, Delhi Set III, 2014]

Ans. Affluence can have both positive and negative effects on the environment. As people become more affluent they demand more goods and services, the production of these goods and services in turn damages the environment. At the same time these affluent people are able to spend money to restore the environmental damage done by their consumerism. 2

Short Answer Type Questions-II

(3 marks each)

- Q.1. (i) Name any two fossil fuels. Why are they so-called ?**

(ii) Mention the role of forests in conserving the environment. How do the forest get depleted ?

[Board Term II, Foreign Set III, 2014]

[Board Term II, Set-67007, 2012]

Ans. (i) Coal and Petroleum. $\frac{1}{2}$

Formed from the degradation of biomass millions of years ago. $\frac{1}{2}$

(ii) (a) Preservation of biodiversity. $\frac{1}{2}$

(b) Forest products $\frac{1}{2}$

Reasons for depletion :

(a) Indiscriminate felling of trees. $\frac{1}{2}$

(b) Destroying biodiversity to produce one particular kind of trees. $\frac{1}{2}$

- Q.2. (i) Name four main components of coal and petroleum.**

(ii) List the benefits which Chipko movement brought to local population. [Board Term II, Set-67004, 2012]

Ans. (i) Petroleum and coal are composed of carbon, hydrogen, nitrogen and sulphur. $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

(ii) (a) Local people gets benefit from forest produce.

(b) Wild life and nature can be conserved. $\frac{1}{2} + \frac{1}{2}$

[CBSE Marking Scheme, 2012]

- Q.3. Name any two ancient water harvesting structures for each of the following states :**

(i) Rajasthan, **(ii)** Maharashtra, **(iii)** Bihar.

Ans. (i) Khadins and Tanks 1

(ii) Bandharas and Tails 1

(iii) Ahars and Pynes. 1

- Q.4. What are the advantages of watershed management ?**

Ans. The advantages are :

(i) Watershed management only increases the production and income of the watershed community.

(ii) It also mitigates droughts and floods.

(iii) It increases the life of the downstream dam and reservoirs. 1+1+1

- Q.5. (i) Although coal and petroleum are produced by degradation of biomass, yet we need to conserve them. Why ?**

(ii) List any two causes for the failure of sustained availability of ground water.

[Board Term II, Set-67005, 2012]

Ans. (i) As their formation is extremely slow, hence these resources may get exhausted. 1

(ii) Two causes are :

- (a) Loss of vegetation cover and dumping of urban waste. 1

- (b) Diversion for high water demanding crops and pollution from industrial effluents.

[CBSE Marking Scheme, 2012] 1v

Long Answer Type Questions

(5 marks each)

Q. 1. (a) What is sustainable development ? Why is it necessary ?

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

[Delhi Comptt. 31/1/1 2017]

Ans. (a) **Sustainable development** : Development which meets the current basic human needs, while preserving the resources for the needs of future generation. 1

It is necessary for environment conservation. 1

(b) **Water harvesting** — It is method to capture every trickle of water that falls on the land. 1

(i) Recharges wells/ Ground water

(ii) Provides moisture for vegetation

(iii) It is not lost by evaporation

(iv) It does not provide a breeding place for mosquitoes

(v) Prevents ground water from contamination due to human and animal wastes. (any four) $\frac{1}{4} \times 4$

[CBSE Marking Scheme, 2012]

Q. 2. (a) In the context of conservation of natural resources, explain the terms reduce, recycle and reuse.

(b) Why is conservation of water necessary ? State any four reasons. [OD 31/1 Comptt. 2017]

Ans. (a) (i) **Reduce** : Less use of natural resources/ avoid wastage of food, water, electricity etc.

(ii) **Recycle** : Collection of materials like plastic, glass, metals, paper etc. and recycle these materials to make required items instead of synthesizing fresh ones. This would save natural resources.

(iii) **Reuse** : Still better than recycling as no energy is required here and the already used things/ items are used again and again. 1

(b) (i) Essential for living organisms.

(ii) It has limited availability.

(iii) Conservation of water allows its equitable distribution.

(iv) Essential for sustainable development.

(Any other relevant point) $\frac{1}{2} \times 4$

[CBSE Marking Scheme, 2012]

Q. 3. Define the following terms :

- (i) Coliform, (ii) Recycling, (iii) Sustainable development (iv) Chipko Andolan, (v) Watershed management.

Ans. (i) **Coliform** : A group of bacteria found in human intestines, whose presence in water indicates contamination by disease-causing microorganisms.

(ii) **Recycling** : The act of processing used or abandoned materials for creating new products.

(iii) **Sustainable development** : A pattern of resources used for obtaining economic and social growth of the present generation while preserving the resources for the needs of future generations.

(iv) **Chipko Andolan** : A grass root level movement in which the villagers hugged the forest trees and prevented their mass felling by the contractors.

(v) **Watershed management** : A scientific method of developing land and water resources to increase the biomass production without causing ecological imbalance. $1 \times 5 = 5$

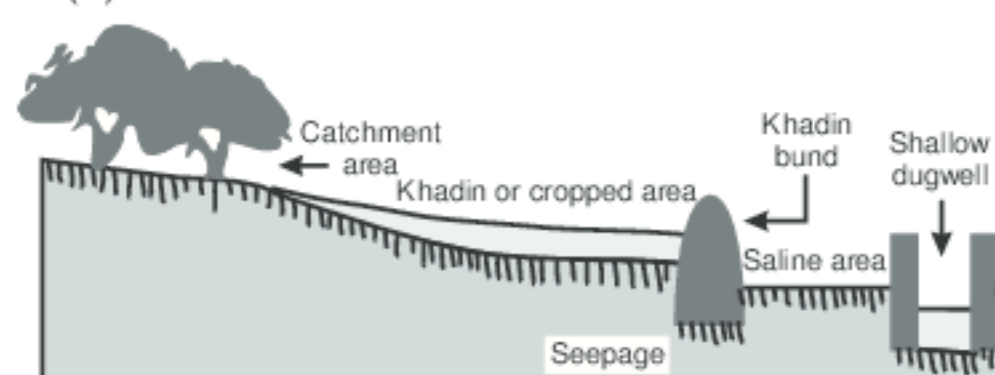
Q. 4. (i) What are fossil fuels ? Give two examples.

(ii) Diagrammatically represent the Khadin System of Water harvesting.

Ans. (i) Fuels formed from the decomposition of ancient animal and plant remains millions of years ago and which provide energy by combustion are called fossil fuels. 1

For example : Coal and petroleum. 1

(ii)



Khadin system of water harvesting

3

Q. 5. Eco-club of your school is organising a debate on the topic 'Nature's Fury Unleashed by Human's Greed' (Uttarakhand Disaster).

(i) List three arguments that you will use to convince the audience that humans are responsible for this disaster.

(ii) List any three values that will be inculcated with this debate. [Board Term II, Set-GFUTB86, 2015]

Ans. (i) Mining, unnecessary use of resources, cutting of trees, building concrete jungle. (Any three) 3

(ii) To protect and improve the natural environment, social awareness, environmental conservation, eco-friendly approach, value for life. (Any three)

[CBSE Marking Scheme, 2015] 2

High Order Thinking Skills (HOTS) Questions

Q.1. How do advantages of exploiting natural resources with short-term aims differ from the advantages of managing our resources with a long-term perspective ? 3

OR

What would be the advantages of exploiting resources with short term aims ? 3

Ans. Exploiting resources with short-term aim is just to reap huge profit while using with a long-term perspective is to reap the benefit in a sustainable manner so that these will last for generations to come. 3

Q.2. What is meant by wildlife ? How is wildlife important for us ? 3

Ans. Wildlife means all those naturally occurring animals, plants and their species which are not cultivated, domesticated and tamed. 1

Wildlife is important for us because

- (i) They provide great aesthetic value for human beings.
- (ii) They help in maintaining ecological balance.

1 + 1

Q.3. List any four characteristics of a good fuel. 3

Ans. Characteristics of a good fuel are.

- (i) Higher calorific value
- (ii) Lesser pollution
- (iii) Sustainable for longer period
- (iv) Easily transportable 3

Q.4. What are three R's used to save the environment? 5

Ans. The three R's are Reduce, Recycle and Reuse.

Reduce : This means that we should use the resources judiciously and check their misuse. We should save electricity by switching off unnecessary lights and fans. We should save water by repairing leak taps. 2

Recycle : This means that we should collect plastic, paper, glass and metal items and recycle this material to make required things instead of synthesising fresh plastic, paper, glass or metal. 2

Reuse : This is even better than recycling because it saves the energy which is spent at recycling a product. Things are used over and over again. For example, envelopes can be reused by reversing them. 1

Q.5. How does the water of Ganga get polluted ? 3

Ans. The river Ganga runs from Gangotri in Himalayas to Ganga Sagar in the Bay of Bengal. On its course, it is being turned into a drain by more than a hundred towns and cities that pour their garbage and excreta into it. It also gets polluted by other human activities like bathing, washing of clothes etc. 3

Q.6. "Economic growth and ecological conservation should go hand in hand". Explain why ? 5

Ans. Forest resources should be used in an environmentally and developmentally sound manner. The benefits of controlled exploitation of resources goes to the people and the environment is also preserved. If the exploitation is too high, economic and social development will be faster but the environment will further deteriorate. Therefore, we should use natural resources cautiously so that economic growth and ecological conservation go hand in hand. 5

Value Based Questions

Q.1. There is a garbage bin installed near your school gate where children and other staff of the school throw waste food, tetra pack, plastic, waste paper, empty mineral water bottle, etc. The bin is cleared by municipality everyday which they dump in a landfill area.

- (i) Can you suggest any improvement in this waste disposal system of your school ?
- (ii) What action will you take in your school to conserve energy ?
- (iii) Give an idea which can discourage travelling of students by personal car. 3

Ans. (i) There should be a different coloured garbage bins so that biodegradable waste and recyclable waste can be disposed separately. 1

- (ii) To conserve energy in school, one should make way for natural sunlight in the classrooms as much as possible to reduce consumption of electricity. 1
- (iii) Cars carrying only one child should not be allowed to come near the school gate. Only school buses,

bicycles and cars carrying three or more children should be allowed to come near the gate. 1

Q.2. Rapid industrialisation of the world is associated with rapid deforestation and extinction of various species. Large scale felling of trees, poaching, etc. have disturbed the ecological balance. Total forest coverage in the world is decreasing at an alarming rate and combined effort of all the stake holders to stop deforestation, is the need of the hours. Unless forest cover is restored, biodiversity is preserved, the civilisation will not last long.

- (i) Who is your favourite environmentalist ?
- (ii) What are the environmental issues he is associated with ?
- (iii) How would you like to contribute towards conservation of nature ? 3

Ans. (i) Sunderlal Bahuguna is my favourite environmentalist. 1

- (ii) Chipko movement and Anti Tehri Dam movement. 1

- (iii) By creating awareness among public for conservation of forest and wildlife to achieve sustainable development. 1

Q.3. Conservation is the sensible use of the earth's natural resources in order to avoid excessive degradation and betterment of the environment. It includes the search for alternative food and fuel supplies when these are endangered, an awareness of the dangers of pollution and the maintenance and preservation of natural habitats and its biodiversity.

- (i) What does conservation mean ? 1
(ii) Mention any four various practices which can help in conserving and protecting our environment. 2

- Ans. (i)** Conservation means to keep safe. 1
(ii) (a) Afforestation. $\frac{1}{2}$
(b) Judicious use of fertilisers. $\frac{1}{2}$
(c) Rainwater harvesting. $\frac{1}{2}$
(d) Practice of crop rotation. $\frac{1}{2}$

Q.4. Wildlife means all those naturally occurring animals, plants and their species which are not cultivated, domesticated and tamed. India's the tiger is an iconic species, and tiger conservation is involved in attempts to prevent the animal from becoming extinct and preserving its natural habitat. In Gujarat only 5 tigers were left and now there are up to 500. This is one of the main objectives of international animal conservation charities. These Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has played a crucial role in improving international efforts for tiger conservation.

- (i) What role is played by the wildlife activist in conserving wildlife ?
(ii) Comment your suggestions and importance on the Topic 'Save Tigers.' 3

- Ans. (i)** (a) The natural habitats of wild animals and birds should be preserved by establishing national parks and sanctuaries.
(b) To conduct a periodic surveys of national parks and bio-reserves. 1
(ii) (a) Hunting of tigers should be banned.
(b) A campaign like paper dipping should be arranged for the awareness of the people.
(c) The survival of captive-bred animals in the wild life is more. 2

Q.5. While discussing about coal and petroleum a teacher told his students about PCRA's (Petroleum Conservation Research Association) guidelines to save the fossil fuels while driving vehicles. Deepa was going to her school with her mother who was driving car. At the traffic signal, when the light was red, Deepa suggested her mother to switch off the engine.

After reading the above passage, answer the following questions :

- (i) Fossil fuels are natural resources, then why do we need to conserve them ?
(ii) List any two ways of saving the fossil fuels.
(iii) State two values exhibited by Deepa. 3

[Board Term II, Foreign Set-I, 2016]

Ans. (i) Fossil fuels take millions of years in their formation, hence are exhaustible/need to be conserved to provide energy for a longer duration /sustainable development.

- (ii) Walking short distances / use of public transport / where possible / switch off unnecessary lights / repair of faulty water taps/use of efficient appliances / promotion of solar energy/any other correct option. (Any two)

- (iii) Concerned about natural resources /environment / assertive (Or any other) (Any two) 1 + 1 + 1

[CBSE Marking Scheme, 2016]

Q.6. An estimated 50 million tons of E-waste are produced each year. The USA discards 30 million computers each year and 100 million phones are disposed off in Europe each year. The Environmental Protection Agency estimates that only 15-20% of e-waste is recycled, the rest of these electronics go directly into landfills and incinerators.

- (i) Mention any two possible reasons for generation of E-waste in large amount.
(ii) Suggest any two ways by which you can help in reducing the e-waste in the environment ?
(iii) Mention the associated values.

[Board Term II, Set-FF7NBE6, 2015] 3

Ans. (i) Improvement in our life style has led to use of more of electronic gadgets like computers, laptops, mobile phones etc.

The companies in order to increase their sales keep on launching new upgraded versions which attract the buyers and increase the waste.

- (ii) Think about the utility and then only buy the upgraded models not just because friends are having so I should also buy it.

Try to reuse the old TV, computers, mobile phones or other electronic gadgets if it is in working condition by selling/giving it to the needy.

- (iii) Concern towards the society, environment friendly [CBSE Marking Scheme, 2015] 3

Q.7. Fossil fuels are obtained from the remains of plants and animals, which get 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. These are energy sources which cannot be replaced easily when they get exhausted and are also called conventional sources of energy. They are used traditionally for many years and take millions of years to form.

- (i) 'Necessity of judicious use of coal and petroleum'. Give a reason behind this statement. 1
(ii) As a citizen, what significant role you play in regard to conserve fossil fuels by using other alternate sources of energy. 2

Ans. (i) Excessive burning of coal and petroleum pollutes the environment and they get exhausted. 1

- (ii) (a) Use of natural gas.
(b) Solar energy, wind energy, biomass energy should be promoted for use. 1+1=2

Q.8. The objective of Ganga Action Plan (GAP) was to restore the river water quality. It meant that there should be dissolved oxygen (DO) not less than 5 mg/litre, and biochemical oxygen demand (BOD) not more than 3 mg/litre and pH value of 6.5 to 8.5. The river is more polluted now, then it was when the project was launched two decades ago. The availability of the natural water in the river has reduced drastically. In addition, sewage is being discharged into the Ganga directly.

- (i) 'The quality of water has changed during the last 25 years.' Give a reason behind the statement.

- (ii) Enlist the factors responsible for pollution of river Ganga.

- (iii) Group of student took an initiative to make people aware to 'Save Water'. Enumerate their suggestions. 3

Ans. (i) Industries cause pollution by loading chemical effluents and makes the water toxic, killing aquatic organisms, and is harmful for people. 1

- (ii) (a) Drainage of household sewage into rivers.

- (b) Washing clothes and flowing pesticides into water. 1

- (iii) (a) They organise a camp to tell people about water conservation.

- (b) They tell people about rainwater harvesting. 1

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