

# Management of Natural Resources

## EXERCISE 1.1

### I. Objective Type Questions (MCQs)

(1 Mark)

- Which of the following community in Rajasthan has a religious tenet of conservation of forest and wildlife?  
(a) Agarwal (b) Jaishwal (c) Bishnoi (d) Gujjar
- Which of the following is not an use of forest?  
(a) Controls floods. (b) Used to make paper.  
(c) Causes soil erosion. (d) Resin, gum and drugs are obtained.
- The pH range most conducive for life of fresh water plants and animals is  
(a) 6.5 – 7.5 (b) 2.0 – 3.5 (c) 3.5 – 7.0 (d) 9.0 – 10.5
- Which environmental problem is associated with the construction of high rise dams?  
(a) A large number of human settlements are submerged in the water.  
(b) It contributes to deforestation and loss of biodiversity.  
(c) It involves the spending of huge amounts of money.  
(d) All the above.
- What are the three R's to save the environment?  
(a) Reduce, Recycle, Reuse (b) Replenish, Reduce, Reuse  
(c) Reconstruct, Recycle, Reduce (d) Reduce, Recycle, Remove

### II. Very Short Answer Type Questions

(1 Mark)

- Name any two items which can be easily recycled but thrown in dustbins. [Delhi 2014]
- List two causes of pollution of river Ganga.
- Name the bacteria whose presence in water indicate contamination of water [DOE]
- Name any two inexhaustible resources.
- Define the term 'Conservation of environment?'
- Name two resources which cannot be recycled.
- How can level of water pollution be measured? List any two ways.
- What are coliform bacteria?
- How does inequitable distribution of water affect life of people?
- Where are coliform bacteria found in human beings? [CBSE 2016]
- Write two methods of waste disposal. [CBSE 2015]
- Name any two wastes which can be recycled and reused. [CBSE 2015]
- Mention the action taken by govt. to save river Ganga. [CBSE 2014]

### III. Short Answer Type Questions-I

(2 Marks)

- What would be the advantages of exploiting resources with short term aims? [NCERT]
- Why is reuse better than recycle?

OR

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

- Name two categories of natural resources. [Delhi 2016] [DOE]
- Why do you think there should be equitable distribution of resources? What forces would be working against an equitable distribution of our resources?
- What is sustainable development? How can it be achieved?
- List two main causes of pollution of water of the river Ganga. State how pollution and contamination of river water prove harmful to the health of people of neighbouring areas.
- Identify two local industries which pollute the local water bodies by throwing untreated sewage.
- What do the three R's refer to save environment? Which one of these would be the best for environment?
- Write the harmful effects of polythene bags on the environment. Suggest alternating to plastic bags. [CBSE 2013]

10. Name two fossil fuels. List one product of each forward when these are burnt in (a) sufficient oxygen (b) Insufficient oxygen.
11. 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 2013]

#### IV. Short Answer Type Questions-II

(3 Marks)

1. Explain the interrelationship of population, environment and development.
2. How 3 R's policy help in conservation of natural resources?

#### V. Long Answer Type Questions

(5 Marks)

1. What is Ganga Action Plan? What was the need for it? Give two reason of pollution in Ganga? What are the two ways to check its level?
2. Keeping in mind any five natural resources, discuss the 3 R's ways of conserving them.

### Answers 1.1

- I. 1. (c) 2. (c) 3. (a) 4. (d) 5. (a)
- II. 1. (i) Bits of paper, (ii) Plastic water bottle  
 2. (i) Human remains after death (ii) Industrial waste (iii) Religious festivals (Any two)  
 3. E. Coli bacteria  
 4. Solar energy and bio-mass are inexhaustible resources.  
 5. Conservation of environment refers to activities which can provide individual or commercial benefits, but at the same time, prevent excessive use which are leading to environmental damage.  
 6. Two resources which cannot be recycled are metals and fossil fuels.  
 7. Two ways to check levels of water pollution is Coliform bacteria and pH  
 8. Coliform bacteria are E.coli bacteria which live on organic matter and also found in human intestine. Presence of these bacteria indicates contamination of water by disease causing bacteria.  
 9. Only rich and powerful will become more and more powerful while others will suffer.  
 10. Intestine.  
 11. (i) Recycling of waste (ii) Reuse of waste.  
 12. Old newspapers, waste paper, plastic, metal, glass can be recycled and reused.  
 13. Ganga Action Plan (Namami Ganga Project)
- III. 1. Short term aim means use it today and don't bother about future.  
**Advantages:**  
 (i) It fulfills the immediate requirement of people.  
 (ii) It provides industrial growth.  
 (iii) It is needed for economic development.  
 (iv) It leads to comforts in life.  
 2. Reuse saves energy needed for recycling, therefore it is better than recycling.  
 3. Two categories of natural resources are renewable and nonrenewable.  
 (i) Renewable resources can be regenerated. For example, products from forests, grasslands, soil, groundwater, biological species.  
 (ii) Non-renewable sources cannot be regained or reconstructed once they are used up. For example, fossil fuels, metals, minerals, etc.  
 4. I think there should be equitable distribution of resources as resources are limited and demand is more. It will ensure distribution to all and not to only rich and powerful.  
 Forces would be working against an equitable distribution of our resources may be political and social forces.  
 5. Sustainable development is the form of growth that meets current basic human needs while preserving the resources for needs of the future generations.  
 To maintain balance between environment and human development, it is necessary to strive for sustainable development to meet the needs of present generation and conserving it for the future

generation. To achieve this we have to consider the different aspects of development. Conservation, sustainability and biological diversity are interrelated. In order to survive man has to live in harmony with nature.

6. Causes of water pollution are:

- |                                   |                                     |           |
|-----------------------------------|-------------------------------------|-----------|
| (i) Disposal of industrial wastes | (ii) Dispersion of untreated sewage |           |
| (iii) Bathing, washing            | (iv) Immersion of ashes.            | (Any two) |

Harmful effects are:

- |                        |  |
|------------------------|--|
| (i) Water born disease | (ii) Consumption of contaminated fishes. |
| (i) R                  |  |
7. (i) Paper (ii) Sugar  
(iii) Paint (iv) Chemical and fertilizer.
8. Reuse, recycle, and reduce. Reducing wastage is the best out of these.
9. (i) Plastics are non-biodegradable, therefore, disposal becomes difficult, however can be recycled. Burning of polythene creates lot of pollution.  
(ii) Plastic bags when mixed with soil reduce its fertility and animals eating polythene will die because these are poisonous.
10. Coal and Petroleum.  
(i) Carbon dioxide, water, sulphur dioxide, nitrogen dioxide  
(ii) Carbon monoxide, nitrogen monoxide.

11. Exploiting natural resources with short term gains in mind will lead to unwanted and excessive use of resources, that will lead to the depletion of these resources.

On the other hand managing our resources with a long term perspective involves judicious use of the resources that can conserve resources for the future.

IV. 1. Population explosion is one of the main causes of environmental imbalance. India's population has crossed one billion. In order to meet the basic demands the human beings are forced to encroach upon forests, mountains, seas, rivers for space and food. They need more cultivable and habitable land. They kill more animals for food, money and pleasure, cut trees for fuel, timber and paper industry. They use more fertilizers and pesticides to increase crop production. All these activities of man cause ecological imbalance and pollution. Population explosion causes physical discomfort which in turn causes mental tension hence health and social disorders.

2. Advantage of 3R's policy are:

- Reducing pollution of environment by reducing garbage.
- Reduces stress on industries as they have less demand on them
- Save sources for fresh raw materials
- Helps save energy demand by industries
- Less litter and garbage is generated.

V. 1. Exploitation of resources have led to their depletion and pollution. Once people are made aware some action follow. One such example is Ganga action Plan - A multicore project taken up in 1965 to improve the quality of Ganga water.

Department of environment in December 1984, prepared an action plan for immediate reduction of pollution load on the river Ganga. There was a need of Ganga action plan as quality of Ganga water reduced a lot. Ganga water had shown presence of coliform bacteria which are found in human intestine. Presence of these bacteria indicated contamination of water by disease causing bacteria. Pollution of Ganga water was caused by human activities like releasing domestic and industrial effluents, bathing, defecating, washing, emerging dead bodies or ashes etc.

2. The 3 R's are Reduce, recycle and reuse

**Reduce means using less**

- (i) Electricity by switching lights and fans not in use.
- (ii) Water by repairing leakage in taps, using mugs in place of shower or pipes, using water after bathing or washing utensils to water the plants.
- (iii) Paper by using its both sides, buying things with less packing material.

- (iv) Food by taking small serving at a time, buying only as much as is needed, not buying too many luxury items.
- (v) Carrying shopping bags instead of accepting polythene or paper bags while shopping
- (vi) Managing carpools, using bicycle or even walking small distances instead of using individual vehicles. Nowadays metro service in big cities is helping in this regard a great deal.
- (vii) Buy appliances which economize energy and fuel consumption
- (viii) Buy quality products, which last longer, hence do not get discarded easily.
- (ix) Make less use of disposal items.

**Recycle** means converting waste to something useful. It means avoiding wastage of raw material and energy to produce fresh things. We can recycle

- (i) Domestic and farm wastes to produce compost, farmyard manure and biogas.
- (ii) Metal, plastic, glass and paper can be segregated to be converted to recycled items,
- (iii) Leftover food can be converted to tasty snacks.
- (iv) Card, gift-wraps and other waste can be made into useful and beautiful household items

**Reuse** means making something useful even after it has served its actual purpose. Since it means not wasting least of energy it is better than recycling. Some examples are

- (i) Using envelopes, bags, cans, bottles etc. once the product packed in them has been used up.
- (ii) As far as possible, repair rubber tyres, bicycle and household appliances and use them for longer instead of buying new ones.
- (iii) Use the clothes till they can be used in household even they are not being worn. They can be made into bags, napkins etc.

## EXERCISE 1.2

### I. Objective Type Questions

(1 Mark)

#### I. Fill in the Blanks

1. The bacteria present in contaminated water is \_\_\_\_\_.
2. Sanctuaries are established to \_\_\_\_\_.
3. Red Data book provides a list of \_\_\_\_\_.
4. Tehri Dam is being constructed on \_\_\_\_\_.
5. Kulhs system of irrigation is common in \_\_\_\_\_.

#### II. True or False

1. Soil and water are non-renewable natural resources. [True/False]
2. Revival of ancient systems of water harvesting is better than big dams. [True/False]
3. Monoculture forestry is more suitable for industries but it is not good for the environment. [True/False]
4. Control of local people over their own water resources may cause mismanagement and over-exploitation of these resources. [True/False]
5. The river water is said to be polluted with acidic wastes when the pH of river water above 7. [True/False]

#### III. Match the following:

Direction (Q1 and Q2): Match Column I with Column II.

##### 1. Column I

- (i) Reduce
- (ii) Recycle
- (iii) Reuse
- (iv) Safe disposal of waste

##### Column II

- (a) Reprocess to make desired things
- (b) Use again and again.
- (c) Sustainable development.
- (d) Less use of things.

##### 2. Column I

- (i) Himachal Pradesh
- (ii) Rajasthan
- (iii) Bihar
- (iv) Karnataka

##### Column II

- (a) Surangams
- (b) Bandharas
- (c) Kulhs
- (d) Khadins
- (e) Kattas
- (f) Ahars

### II. Very Short Answer Type Questions

(1 Mark)

1. What is biodiversity? [DOE]
2. Write the full form of GAP?
3. Name the person who is remembered for the protection of Khejri trees in Rajasthan. [DOE]
4. Who are called stake holders? [DOE]
5. Name two exhaustible natural resources.
6. List two measures that you would suggest for the better management of water resources. [Delhi 2014]
7. Give one example each from your daily life where the domestic waste can be effectively reused and recycled.
8. Write one negative effect of affluent lifestyle of few persons on the environment. [Delhi 2014]
9. A person lives near a forest. Make a list of four items which he can get from forest to meet his daily needs. [Delhi 2010]
10. Name the state in which Indira Gandhi Canal has brought greenery? [Delhi 2015]
11. Mention two renewable sources of energy.
12. Mention the action taken by Government to save river Ganga? [Delhi 2014]
13. Write the context in which Amrita Devi Bishnoi National award is given? [Delhi 2014]
14. What are ways to conserve natural resources? [Delhi 2015]
15. List two advantages of building dams? [Delhi 2013]
16. List any two industries based on forest produce. [Delhi 2010] [NCERT]
17. Name a programme which was started to avoid alienation of common man from trees. Who started it?

18. Name the ancient water harvesting structures in Maharashtra. [CBSE 2016]
19. Give one protective function of forest. [CBSE 2015]
20. Mention any two reasons for failure to sustain underground water.
21. Why do we need alternate sources of energy?
22. What is meant by bio diversity hot spots? [CBSE 2015]
23. State one reason for conservation of forest and wild life. [CBSE 2011, 13]

### III. Short Answer Type Questions-I

(2 Marks)

1. Write any two ways that you can suggest at home to save water which is a valuable resource?  
[Delhi 2013, 2014]
2. Give two uses of coal.
3. "We need to manage our resources". List two reasons to justify this statement. [Delhi 2014]
4. What will happen if biodiversity of an area is not preserved? Mention one effect of it.  
[Delhi 2015] [HOTS]
5. In what ways poor tribals are affected by dam development projects? [Delhi, 2016] [HOTS]
6. What changes can you make in your habits to become more environment-friendly?  
[Delhi, 2016] [HOTS]
7. What is sustainable developmental? State its two main objectives. [Delhi, 2016] [HOTS]
8. What is water harvesting? What is its importance? [NCERT]
9. Why do we need to resort to water harvesting when we can just collect rain water and use it?
10. What are the advantages of groundwater over surface water?
11. List some traditional ways used by local organizations for water harvesting.
12. Can you suggest some changes in your school which would make it environment friendly?
13. List any two advantages associated with water stored in the ground.
14. We often observe domestic waste decomposing in the by lanes of our homes. List two ways to make the residents aware that the improper disposal of wastes is harmful to the environment and also for their own health.
15. State the main purpose of water harvesting management and mention the source which fills the ponds besides harvesting structures.
16. Though the Kulhads are made up of clay which is an ecofriendly substances but their use has been continued in the trains these days. Explain two reasons which lead to discontinuance of this practice.  
[CBSE 2015]
17. Industrialisation are one of the major causes of deforestation. State two reasons. [CBSE 2015]
18. Mention the steps taken by west Bengal Govt. to protect badly degraded sal forests. [CBSE 2013]
19. List two measures to conserve the natural resources of the environment.
20. What is sustainable management? Why is reuse considered better in comparison to recycle?  
[Delhi 2017]
21. Why is sustainable management of natural resources necessary? Why is reuse better as compared to recycle?  
[Delhi 2017]
22. Explain how would the involvement of local people be useful for successful management of forests.  
[Delhi 2017]
23. State two advantages of conserving (i) forests, (ii) wild life. [CBSE 2017]
24. What is meant by wildlife? How is it important for us? [Delhi 2017]
25. Management of forest and wild life resources is a very challenging task. Why? Give any two reasons.  
[Delhi 2017]
26. Explain two main advantages associated with water harvesting at the community level. [CBSE 2017]

#### IV. Short Answer Type Questions-II

(3 Marks)

1. After the examination Rakesh with his friends went on a picnic to a nearby park. All friends carried cooked food packed in plastic bags or plastic cans. After eating the food some friends collected the leftover food and plastic bags etc and planned to dispose them off by burning. Rakesh immediately checked them and suggested to segregate the leftover food and peels of fruits from the plastic materials and respectively dispose them off separately in the green and blue dustbins placed in the corner of the park.
  - (i) In your opinion, is burning plastic an eco-friendly method of waste disposal? Why? State the advantage of method suggested by Rakesh.
  - (ii) How can we contribute in maintaining the parks and roads neat and clean?
2. What are 'biodiversity hot spots'? What is the measure of biodiversity in an area? How is it being affected?
3. What are the reasons of destruction of forests?
4. Why should we conserve forests and wild life?
5. Suggest some approaches towards the conservation of forests [NCERT]
6. Describe the structure of a traditional water harvesting system with the help of a diagram.
7. Name the terms used in different states and languages that is used for water harvesting structures.
8. What changes would you suggest in your home in order to be environment friendly?
9. Dams are bane or boon? Justify your answer.

OR

Give three points to justify that dams can have advantages or disadvantages.

10. What were main reasons behind 'Ganga Action Plan' which was initiated in 1985? What values can be learnt from such plans? [CBSE 2016]

#### V. Long Answer Type Questions

(5 Marks)

1. How degraded Sal forests of Arabari forest range in Midnapore district were protected? What ways were followed to save them? Who was the person behind it? What conclusion do you derive from it?
2. What is the meaning of Chipko Movement? Who started it? State any three objectives of starting it?
3. We saw in this chapter that there are four main stake holders when it comes to forests and wildlife. Which among these should get the maximum benefit of forest produce? Why do you think so? [NCERT]



## Answers 1.2

- I. I. 1. Coliform 2. Protect 3. Rare, endangered or endemic species 4. Ganga 5. Himachal Pradesh
- II. 1. False 2. True 3. True 4. False 5. False
- III. 1. (i) (d) (ii) (a) (iii) (b) (iv) (c)  
2. (i) (c) (ii) (d) (iii) (f) (iv) (e)
- II. 1. The existence of variety of life in a natural ecosystem is called biodiversity.  
2. GAP stands for Ganga Action Plan. Nowadays it is named as 'Namami Ganga Project.'  
3. Amrita Devi Bishnoi  
4. Those people who are affected by a project are called stake holders.  
5. Coal and petroleum  
6. (i) Wastewater treatment (ii) Drip irrigation (iii) Avoid leakage (Any two)  
7. Domestic waste should be converted into compost and used in the kitchen garden.  
8. Air pollution and acid rain are negative effects on environment by the excessive use of vehicles and generators.  
9. (i) Food, (ii) Fuel (iii) fodder for animals (iv) cotton for making clothes.  
10. Rajasthan  
11. (i) Solar Energy, (ii) Wind Energy.  
12. Ganga Action Plan to prevent pollution of Ganga.  
13. Amrita Devi Bishnoi National award is given for wild life conservation in honour of Amrita Devi Bishnoi who sacrificed her life along with 363 others for the protection of Khejri trees in a village of Rajasthan in 1731.  
14. (i) Reduce, (ii) Reuse, (iii) Recycling of non-biodegradable wastes.  
15. (i) Dams control floods (ii) They help to produce electricity.  
16. (i) Timber (Furniture) industry (ii) Sports good (iii) Paper (Any two)  
17. Chipko movement started by Sunder Lal Bahuguna to avoid alienation of common man from trees.  
18. Bandharas and Tals.  
19. Forest is habitat of large number of animal and plants which are not found anywhere else. It provides bio-diversity to our environment.  
20. (i) Loss of vegetation cover (ii) Water demanding crops  
(iii) Wastage of water (iv) Leakage  
21. (i) Increase in demand (ii) Non-renewable source of energy are limited.



22. It is region where there is significant reservoir of biodiversity.

23. Restoring of ecological balance.

III. 1. (i) Use bucket instead of shower.

(ii) Use mug for shaving or washing hands instead of running water.

(iii) Get repaired all type of leakage in water pipes.

(Any two)

2. (i) Coal is used as a fuel.

(ii) It is used to make coke which acts as reducing agents.

3. (i) Fossil fuels are limited. Their use must be reduced to meet future needs.

(ii) Plant more trees to prevent air pollution and soil erosion. Trees absorb noise and keep the area cool.

4. Loss of biodiversity will lead to ecological imbalance, *e.g.* on cutting trees in forest, lions, tigers will not get food and enter human population and will harm them.

5. (i) Poor tribals lose their fertile land which they use for their livelihood.

(ii) They lose their residences and are allotted new places where they start their life all over again.

6. (i) Walk or go to school on bicycle if it is not far way. If it is far away use Metro or school bus instead of personal car.

(ii) Switch off car engine at red light.

(iii) Recycle all items which can be recycled.

(iv) Reuse the discarded items if possible.

(v) Reduce the use of non-renewable sources of energy, *e.g.* solar energy can be used for heating water.

7. The development which can be maintained for a long time without causing any damage to the environment is called sustainable development.

Two objectives are:

(i) The purpose is to provide comfortable life to people and future generation.

(ii) It helps to meet present needs and also saves resources for future needs *e.g.* metro trains are making sustainable development for people in Delhi and other states.

8. Water harvesting is a technique to catch every drop that falls on land as rain or snow to recharge ground water. It helps in conservation of soil and water in order to increase biomass production.

9. Collecting rain water in water bodies is possible only in rainy season but retaining it throughout the year may not be possible as it will evaporate. It may also get contaminated and mosquitoes may also breed in it. Groundwater recharged due to water harvesting will be cleaner and available throughout the year.

10. The advantages of groundwater over surface water are:

(i) Ground water does not evaporate.

(ii) Spreads out to recharge wells, provides moisture to vegetation over a wide area.

(iii) It does not provide breeding ground for mosquitoes like stagnant water.

(iv) It is protected from contamination and pollution by human and animal waste.

11. Some traditional ways used by local organizations for water harvesting are

(i) Digging small pits and lakes (ii) Simple watershed systems

(iii) Building small earthen dams (iv) Constructing dykes, sand and limestone reservoirs

(v) Set up rooftop water collecting units.

12. (i) Making a compost pit at the backyard of garden

(ii) Switching on fans and light in the rooms which are not being used

(iii) Throwing organic and recyclable waste in separate bins

(iv) Growing more plants

(v) Using paper on both side.

13. Two advantages of water stored in the ground are:

(i) Recharges the ground water. (ii) Prevents evaporation of water.

14. (i) Distributing leaflets to residents

(ii) Calling meeting and organising waste disposal system.

15. Water harvesting management will recharge ground water and raise underground water level. Monsoon rain also fills the ponds beside harvesting structures.

16. (i) Use of clay for making Kulhards removes top fertile soil.  
(ii) Reuse of Kulhard is unhygienic.
17. (i) Industries consider forest produce as a raw material.  
(ii) They are not keen for sustainability of forest which is essential for getting raw materials for long time.
18. (i) Involvement of local people by giving employment in silviculture and harvesting operation.  
(ii) Collection of fuel, wood and fodder by paying nominal fees.
19. (i) Maintain green grassy patches between concrete building  
(ii) Use more of environment friendly (biodegradable) materials.
20. Sustainable management is a resource management technique which aims to conserve the resources and use them efficiently to avoid their misuse for individual purposes such that they are conserved for the future.

Reuse is better than recycle because of the following reasons:

- (i) Recycling needs some processes to use the same material again.
  - (ii) Reuse saves energy by using material again without any changes.
  - (iii) Reuse prevents environmental pollution by not creating any waste.
  - (iv) Reuse saves cost as same material is used again without any process.
21. Natural resources are an integral part of our life. As some resources are exhaustible, non-judicious use of such resources will lead to their depletion and ultimate banishment, which will affect the life on Earth. By sustainable use of these natural resources, we are able to conserve our environment. Hence, sustainable management of resources is very necessary.

Reuse is better than recycle because

- (i) Recycling needs some energy consuming processes to use the same material again.
  - (ii) Reuse saves energy by using material again without any change.
  - (iii) Reuse prevents environmental pollution by not creating any waste.
  - (iv) It also saves cost as same material is used again without any processing.
22. The involvement of local people will be useful for the successful management of forests in the following ways:
    - (i) They should be aware of the fact that diminishing forest cover would disturb the ecological balance. If they show their objection against any such illegal activity that would destroy the forests, it can lead to a massive effect that will help in management of forests more effectively as it happened during *Chipko Andolan*.
    - (ii) Phenomenon forest fires must be reported immediately to the forest officers. The sooner the action is taken, more the area will be protected. Forest fires purposely caused by local people must not be practiced.
  23. There are innumerable advantages of conserving forests, such as:
    - (i) It supports life, helps in maintaining the quality of air, water and basic essentials of existence of life.
    - (ii) Stability in soil is possible by trees. It enables the land based plants and animals to live.
    - (iii) Forests also supply raw materials to many industries, such as wood, spices, medicinal herbs, etc.

(Any two)

Advantages of conserving wildlife:

- (i) It helps in maintaining ecological balance and biodiversity.
  - (ii) We depend upon wildlife for food, clothing, medicines and many other products.
24. All the living forms, including both plants and animals that live in their natural environment, i.e. forests is wildlife.
- Wildlife is of great importance for us:
- (i) It maintains the ecological balance of the nature.
  - (ii) It provides us with many useful resources.
25. Management of forest and wildlife resources is considered as a challenging task because:
    - (i) There are many stakeholders of forest. They are those people who are directly or indirectly involved in 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 rates which further poses a challenge to manage the forest and wildlife resources.

26. Two advantages associated with water harvesting at community level are:

- (i) Water harvesting is an ideal solution to water problems in areas having inadequate water resources. It mitigates the effect of drought.
- (ii) It improves the quality of water and helps in raising groundwater level.

IV. 1. (i) No, burning plastic creates lot of pollution and has health hazards.

Rakesh separated biodegradable and non-biodegradable wastes which saves time and energy for separation in green and blue dustbins respectively. Green dustbin waste is sent to compost forming unit or waste to energy conversion plant whereas wastes from blue dust bin is sent for recycling.

- (iii) We should not throw anything in the park. We should not use polythene.

2. Forests are a store house of biodiversity (hotspots of biodiversity). One measure of biodiversity of an area is the types and number of species found there. Biodiversity of an area is being affected by destruction of forests.

3. Forests are destroyed:

- (i) For Cultivation of crops (Deforestation.)
- (ii) For firewood, charcoal, mineral ores, timber, bamboo, fodder and raw materials for paper, rubber and other forest products like gum, resin, medicinal plants, spices, oils, 'etc. Due to extensive deforestation animals and birds migrate to other places or die of hunger and their number decreases.
- (iii) Because of water, land and air pollution caused by industries resulting in the death of wild animals and plants.
- (iv) Because of urbanization (building cities and establishment of estates) leads to the death of wildlife.
- (v) Because of forest fires, heavy floods, etc. kill the wildlife, extensive hunting of animals for food, money and luxury items decreases the number of wildlife.

4. (i) Forests purify the air and also prevent pollution of air.

- (ii) Forests regulate the climate by maintaining the level of rainfall necessary for their own existence.

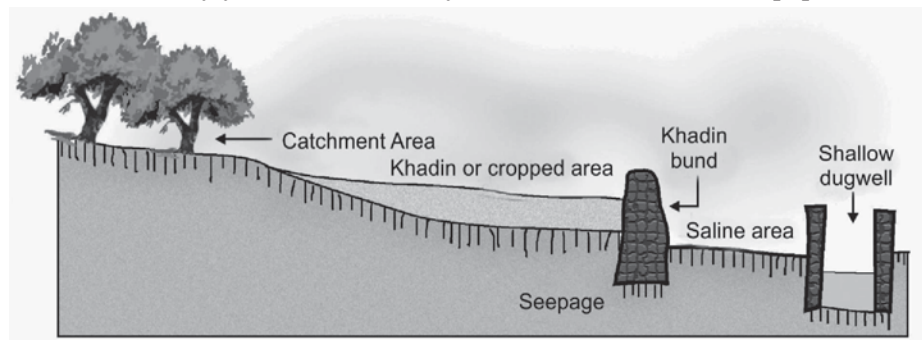
(iii) Forests also provide rubber, wood, timber, fuel, wood, paper, fodder, gum, resin, kattha, edible fruits and medicinal plants for industries as well as local people.

- (iv) Forests serve as a source of income to tribal societies even today

5. Following steps should be taken to conserve forests:

- (i) Silviculture is one of the major programme started to replenish forests. Some of the benefits achieved through this programme are
  - It has helped in preserving the environment by bringing more and more area under forests
  - It produces large quantities of raw materials for various industries
- (ii) Afforestation should be there in the areas which are unfit for agriculture, along the highways and rivers
- (iii) Awareness programme should be there. A special programme of tree plantation called Van Mahotsava is held every year in our country. It should be made more popular.

6.



*Traditional water harvesting system – an ideal setting of the khadin system*

In largely level terrain, water harvesting system are generally crescent shaped, earthen embankments or low, straight, concrete- and rubble check dams built across a seasonally flooded gullies. Monsoon rains fill the ponds behind structures. Only the largest structure hold the water year round. Most of them dry up six months or less after the monsoon.

7. The terms used in different states and languages that is used for water harvesting structures

- |                              |   |                      |
|------------------------------|---|----------------------|
| (i) Khadins, tanks and nadis | – | Rajasthan.           |
| (ii) Bandharas and tals      | – | Maharashtra          |
| (iii) Bundhis                | – | MP and UP            |
| (iv) Ahars and pynes         | – | Bihar                |
| (v) Kulhs                    | – | HP                   |
| (vi) Ponds                   | – | kandli belt of Jammu |
| (vii) Eris                   | – | Tamilnadu            |
| (viii) Surangams             | – | Kerala               |
| (ix) Kattas                  | – | Karnataka.           |

8. Changes that I would suggest at my home in order to be environment friendly are

- (i) Using a jute bag instead of plastic or polythene bag.
- (ii) Switching off fans and light in the rooms which are not being used
- (iii) Avoiding AC as far as possible and using fans or coolers.
- (iv) Using water again and again like water after washing vegetable can be used to water the plants.
- (v) Recycling clothes till they can be used for different purposes
- (vi) Throwing organic and recyclable waste in separate bins

9. Dams are useful in producing hydroelectricity, fishing, irrigation and tourism

If their construction is not planned properly it may lead to

- (i) Economic problems
- (ii) Ecological problems
- (iii) Social problems

Example: Tehri Dam, Tawa Dam.

10. Main aims of Ganga Action Plan were:

- (i) To improve quality of river water
- (ii) To check growth of E.coli bacteria and other micro-organism.
- (iii) To prevent disposal of industrial, domestic, sewage waste.
- (iv) To prevent immersion dead remains of human beings.

**Values:**

- (i) Conservation of most important natural resource *i.e.* water.
- (ii) Preservation of cultural values
- (iii) Cleanliness

V. 1. In 1972, West Bengal forest department recognized its failures in the revival of the degraded sal forest in southwestern districts of the state. This had led to alienation of people by the administration. Result was clash between forest officials and villagers. These conflicts were major factor in fueling the militant peasant movements led by the nexalities. Later the department changed its strategy. In the Arbari forest range of Midnapore district, far seeing forest officer A.K. Banerjee and villager got involved in the protection of 1,272 hectares of badly degraded Sal forest.

- (i) Villager were given employment in the programme of replenishment of forests *i.e.*, silviculture and harvesting operations
- (ii) 25 percent of the final harvest.
- (iii) Allowed fuel, wood and fodder collection on payment of nominal fee.

As a result of active participation of people mainly the local community, the Sal forests of Arbari underwent recovery by the year 1983.

From above example we can reach to the conclusion that by keeping local people out and using forests cannot prove to be successful in the long run. Forest has to be used sensibly keeping both environment and development sound.

2. Chipko movement *i.e.* “hug the trees movement” is one of the movements in India to conserve biodiversity and to end the alienation of people from their forests which started in March 1973. **Sunderlal Bahuguna of Tehri** and **Chandi Prasad Bhatt of Gopeshwar** are prominent leaders of this movement. It was Sunderlal Bahugana who was able to transfer ecological perspective to Chipko Movement are:

- (i) To protect existing forest cover.

- (ii) Afforestation
  - (iii) To utilize forest wealth keeping in mind its conservation.
  - (iv) Leaders of Chipko movement believes in food, fodder, fuel, fertilizers and fibers
3. Stakeholders are:
- (i) People living in or around forests who are fully dependent on forests for their life
  - (ii) The forests Department of Government, owners of the land are working to control the resources from forests
  - (iii) The industrialists using forest produce but not dependent on the forests in any one area.
  - (iv) People involved in wild life and nature conservation.
- Each of the above groups depends on forests in a different way

#### **I. Local people Around Forests Used**

- (i) Use of bamboo to make huts
- (ii) Use of baskets for collecting and storing food materials
- (iii) Use of wood to make implements for agriculture, fishing and hunting
- (iv) Do fishing and hunting for forest
- (v) Gather fruits, nuts and medicines from forests
- (vi) Graze cattle in forests

These people lived in forests for centuries and ensured sustainable use of resources

#### **II. The forest department of government**

- (i) Later British took over most of the forest areas and exploited forests ruthlessly for their needs
- (ii) Local people were forced to depend on smaller areas
- (iii) Forests started becoming over exploited due to monoculture (growing same crop again and again on a piece of land).
- (iv) After India became independent, forest department took over
- (v) Management practices ignored local needs and knowledge
- (vi) Large areas were cleared and were converted to monoculture of pine, teak or eucalyptus.
- (vii) This lead to destruction of biodiversity in the area
- (viii) Needs of local people could no longer be met from such forests
- (ix) But these plantations worked as an important source of revenue for the forest of department
- (x) These plantations are being used by industrialists to reveal timber, paper, lac and sports equipment.

#### **III. The industrialists**

- (i) Forests provide raw material for various industries
- (ii) Industrialists have access to these raw materials at artificially low rates
- (iii) Industries have greater reach than local people
- (iv) Industrialists are not interested in sustainability of forests
- (v) After cutting teak trees in one area, they shift to another.

They do not ensure that one particular area should yield optimal amount of some produce for all coming up generations.

#### **IV. Nature and wildlife enthusiastic**

- (i) They are not dependent on the forests
- (ii) They have realized the need to preserve bio-diversity
- (iii) For example, Bishnoi community in Rajasthan take forests and wildlife conservation as a religious tenet

Out of all stakeholders, local people should be involved in management of forests and get maximum benefit from them as they look after them as their own sustenance is dependent on them.

## **ASSIGNMENT**

### **I. Very Short Answer Type Questions**

**(1 Mark)**

1. Mention the two areas emphasized by watershed management.
2. Why are diesel vehicles 15 years old or more are banned in Delhi?
3. Why is biodiversity. Essential?
4. List any two traditional systems of water harvesting.
5. Name two industries which are affected due to fast depletion of forest resources.

### **II. Short Answer Type Questions-I**

**(2 Marks)**

6. Coal produces energy on burning, but we do not get energy by eating it while eating an apple gives us energy. Explain why is it so. **[HOTS]**
7. You being an environmentalist is interested in contributing towards the conservation of natural resources. List four activities that you can do on your own. *[Delhi 2017]*
8. List any four suggestions you would recommend to your friends to make them more environment friendly.

### **III. Short Answer Type Questions-II**

**(3 Marks)**

9. What are dams? Give two advantages and two disadvantages of dams.
10. Discuss three ways for safe disposal of waste materials.
11. (a) Water is an elixir of life, a very important natural resource. Your science teacher wants you to prepare a plan, "How to save water, a vital resource". Write any two ways that you will suggest to bring awareness in your neighborhood on how to save water.  
(b) Name and explain any one way by which underground water table does not go down further.  
(c) State one advantage of disposable paper cups over disposable plastic cups. *[Delhi 2017]*
12. Explain why does need to manage our natural resources? *[Delhi 2017]*
13. Fresh water, forest products and clean air are for everyone. We must have equal right over them. But everyone is not getting their share. If no then what are the forces working against it.

### **IV. Long Answer Type Questions**

**(5 Marks)**

14. In Rajasthan, unlike earlier people do not face so much shortage of ground water. How has it been made possible. Discuss the role of gram panchyats and villagers in bringing about this change.
15. How does people's participation may save a precious natural resources. Elaborate on it by taking a suitable example.