18. ECOSYSTEMS

Q 1) Complete the following by using correct option.

a. Air, water, minerals, soil are..... factors of an ecosystem.

(Physical, organic, inorganic)

Ans. Physical

b. River, ponds, ocean are .....ecosystems.

(Land, aquatic, synthetic)

Ans. Aquatic

c. Man is .....in an ecosystem.

(Producer, consumer, decomposer)

Ans. Consumer

Q 2) Match the following.

Producers	Ecosystem
a. Cactus	1. Forest
b. Aquatic plants	2. Creek
c. Mangroves	3. Aquatic
d. Pine	4. Desert

Ans.

Producers	Ecosystem
a. Cactus	Desert
b. Aquatic plants	Aquatic
c. Mangroves	Creek
d. Pine	Forest

Q 3) Give my information

a. Ecosystem

Ans. 1) Our surrounding is made of living and non-living things known as biotic factors which are producers, consumers and abiotic factors which are air, soil, water, etc. 2) A continuous interaction takes place in these factors, that form the ecosystem. 3) The living organisms and their habitat and environment are correlated with each other.4) The biotic factors affect the abiotic factors, so the abiotic factors decide for biotic factors that will survive in an ecosystem.5) Ecosystems are complicated and there is lot of variation in species in terms of quantity and quality.6) Every place has a different ecosystem. e.g. ponds, oceans, rivers,

forests etc. 7) The ecosystems vary according to size, place, climate, types of plants and animals.etc.8) The ecosystem are different but are interlinked and they cannot be separated.

b. Biome

Ans. 1) Biomes -Large ecosystems are on some regions on the earth, that have the same climate, abiotic factors , living organisms etc. A specific ecosystem develops in such area are called Biomes. These ecosystems can also be small.

2) Types of Biomes - i) Aquatic biomes ii) Land biomes.

a) Land biomes: The biomes that exist on land only are land biomes. In these type of biomes, various types of ecosystems are formed because of unequal distribution of abiotic factors. e.g. Evergreen forests, grasslands deserts, Iceland ecosystem, Taiga ecosystem etc.

b) Aquatic biomes: They are spread far as 71 % of the Earth's surface is covered by water. The aquatic biomes contain fresh water, marine and creek ecosystems. e.g. Rivers, ponds, oceans, lakes, etc.

c. Food web:

Ans. 1) An ecosystem has many food chains that are interlinked at different levels. This is called as food web.2) Organisms are consumed by other organisms. 3) Let us take an example, A bird feeds on insects frogs, etc. Frog can also be preyed upon by a snake, and insects are preyed upon by the frog. Thus these biotic components are interlinked. An ecosystem is made of various food chains which are inter linked at different levels forming complex web instead of a liner chain 4)This forms an complicated web ecosystem. This arrangement is called as food web. 5) Food webs can be formed anywhere in nature.6) In a food web, all organisms are interdependent. So if, a change occurs in the number of organisms at different levels it affects the entire food web.

Q 4) Give scientific reasons.

a. Plants in an ecosystem are called producers.

1) Plants produce food by photosynthesis using chlorophyll, they utilize solar energy and convert it into chemical energy.

2) They absorb inorganic substances and produce organic food consumed by primary consumers.

3) Secondary consumers gain nutrition from primary consumers.

4) All consumers directly or indirectly are dependent on plants.

5) So, plants in an ecosystem are called producers

b. Large dams destroy ecosystems.

Ans. 1) Dams are heavy barriers built across the rivers , they cover vast land. They use the water in rivers for producing electricity. 2) For constructing dams forests or grasslands are cleared, these areas convert into aquatic ecosystem.3) Dams reduce the water flow in the lower regions, destroying the local ecosystems in that areas. 4) The prevailing, ecosystems in running water are also destroyed.

c. Rhinos were restored in Dudhwa forest.

Ans. 1) About 150 years ago, Dudhwa forest was the habitat for one horned Rhinos. But in the 20^{th} century the species became extinct due to unremitted hunting. 2) On 1^{st} April

1984, rhinos were bred in captivity and then released in their habitat. 3) A 27 sq. km grassland and forest were made available with water supply for an entire year. 4) 2 observatories were also established and these efforts were also successful.

Q 5) Answer the following.

a. What are effects of increased population on ecosystems?

Ans. 1) Human population growth is very rapid, man kept using natural resources abundantly. 2) Man is completely dependent on ecosystem as other consumers.3) Degradation of environment, changing life style , pollution are the aspects affecting the ecosystem. 4) This factors cause stress on the ecosystems.

b. How is urbanization responsible for destruction of ecosystems?

Ans. 1) Urbanization refers to the movement of people in bulk from rural areas to cities. 2) Due to this massive movement agricultural lands, wetlands, forests and grasslands are destroyed for buildings , roads, dams and

other amenities. 3) For developing transport infrastructure roads and railways, the lands are destroyed that has affected and also destroyed ecosystems.

c. What are the reasons for war?

Ans. Differences and competition over lands, water, mineral resources or some economic and political reasons are the causes of war. Wars are life threatening , but also may change or destroy the natural ecosystems. The impacts of war on the environment as well as on humans are dreadful, so wars should always be prevented.

d. Explain the interactions among the factors of an ecosystem.

Ans. 1) Ecosystem are made of biotic and abiotic factors. Both these factors are interlinked and interact continuously with each other. 2) These interactions between them form an ecosystem. 3) Biotic (living) factors are producers, consumers and decomposers, and the abiotic (non-living)

factors include chemical factors like organic and inorganic substances and other physical factors like sunlight, water, etc. 4) In an ecosystem, the survival of biotic factors is dependent on the abiotic factors. 5)Producers (plants) are autotrophic they are dependent on abiotic factors like sunlight, water, soil, minerals, etc. for process of photosynthesis. Energy produced during this process enters the ecosystem by these producers. 6) Primary consumers (herbivores) are dependent on producers for their food and the secondary consumers are dependent on the primary consumers. The tertiary consumers are dependent on secondary consumers. 7) The primary consumers are very important for transferring energy from plants to other biotic factors in an ecosystem. 8)Decomposers depend on remains of plants and animals and supply nutrients to the ecosystem. 9) The sequence of energy transfer from producers to

decomposer forms a food chain and disturbance in any of these factors or removal can disturbs the entire food chain.

9) Thus, biotic and abiotic factors interact and maintain the ecosystem.

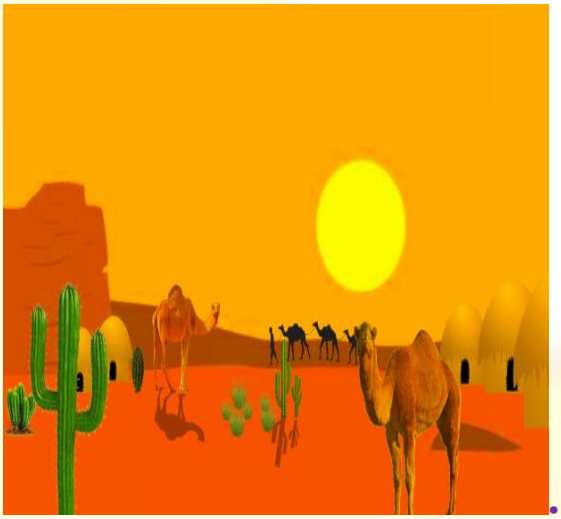
e. Differentiate between evergreen forests and grasslands.

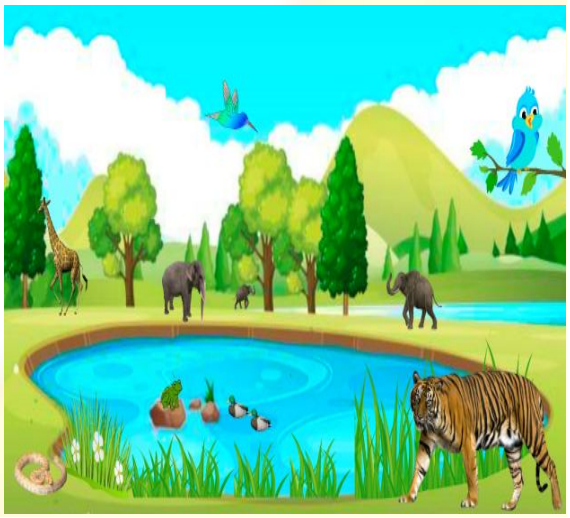
Ans.

Evergreen forests	Grasslands
1. Evergreen forests develop it rains throughout the year and thus variety of plants are grown.	1. Grasslands develop where rainfall is insufficient to grow big trees.
2. The leaves of trees in this forest are broad and green.	2. The leaves grow extensively are thin and elongated.
3. They shed their leaves at specific time.	3. During dormant season grassland plants shed their leaves.

4. The forests are dense and trees complete to get sunlight, thus they grow tall.	4. Leaves are thin and elongated.
5. Hard wood species like bamboo, rubber,sandalwood, etc. grow in forest.	5. Only dwarf plant grows in grasslands.

Q 6. Describe the following pictures.

1. 

2. 

Ans. 1) The first picture is represents a desert ecosystem, with few trees and scarce water, cactus plants specifically grow in deserts. Animals as camels, spiders, lizards and rats

etc have adapted to survive with less water. Camel has thick skin and can survive long without food and water. Scarce rainfall almost 25 cm is observed, the days are very hot and nights are very cold. The plants grown here are prickly pear, cactus, desert palm trees, etc 2) The second picture represents forest area with abundant trees and a healthy natural ecosystem for the animals living in it. The birds are moving, water body has plenty water abundant sources will be available for biotic factors in a healthy eco system.

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