Chapter :- Our Environment

Environment :- Everything which surrounds us. It may include living (biotic) and non-living (abiotic) components.

Biotic :- Plants and animals.

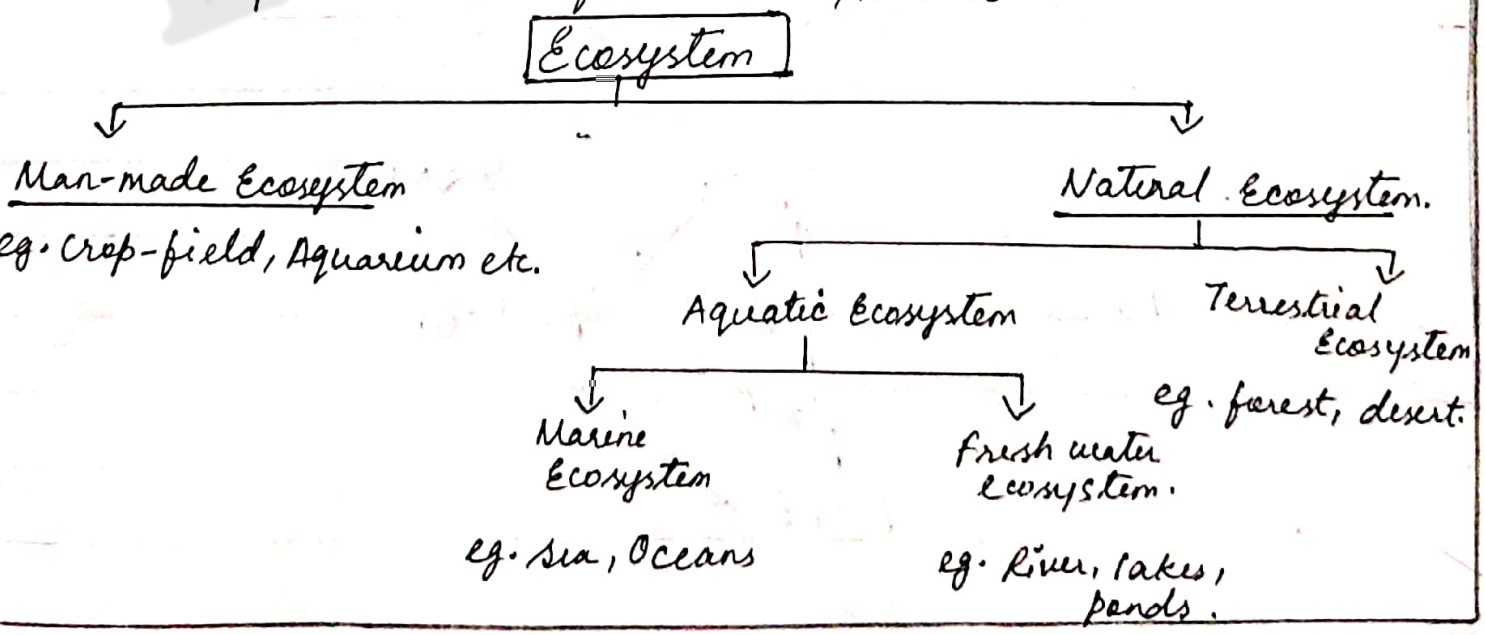
Abiotic :- Air, water etc.

Bio-Degradable :- Substance that can be decomposed by the action of micro-organism like bacteria are called bio-degradable. Eg. Organic wastes.

Non-Biodegredable :- Substances which cannot be decomposed by the action of microorganisms are called non-biodegradable. ex :- polythene bags, metals, radioactive wastes etc.

Eco System and its components.

- All the interacting living organisms in an area together with non-living components form an ecosystem. So an ecosystem consists of both biotic and non living (abiotic) components like temperature, rainfall, wind, soil etc.



All organisms are classified on the basis of nutrition.

Producers:- All green plants, blue green algae can produce their food (Sugar and starch) from inorganic substance using light energy (photosynthesis).

Consumers:- Include Organisms which depend on the producer directly or indirectly for their substance.

Consumers

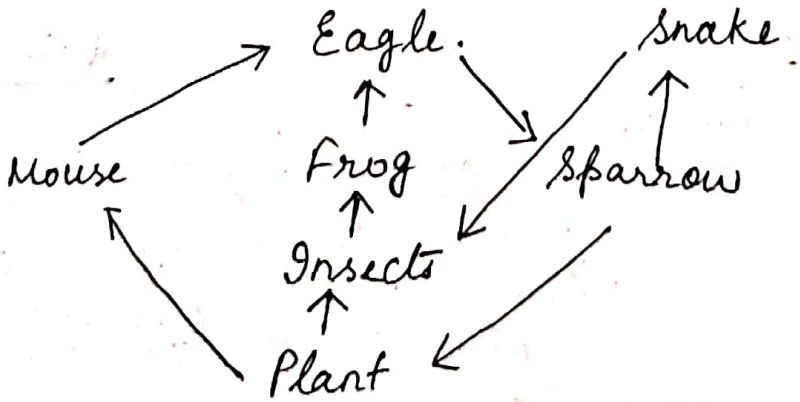
Herbivores	Carnivores	Parasites	Omnivores
eg. Cow, goat	eg. Lion, tiger	eg. Plasmodium	eg. Crow.

Decomposers:- Fungi & Bacterias which break down the dead plant, animals complex compounds into simpler substances. Thus decomposers help in the replenishment.

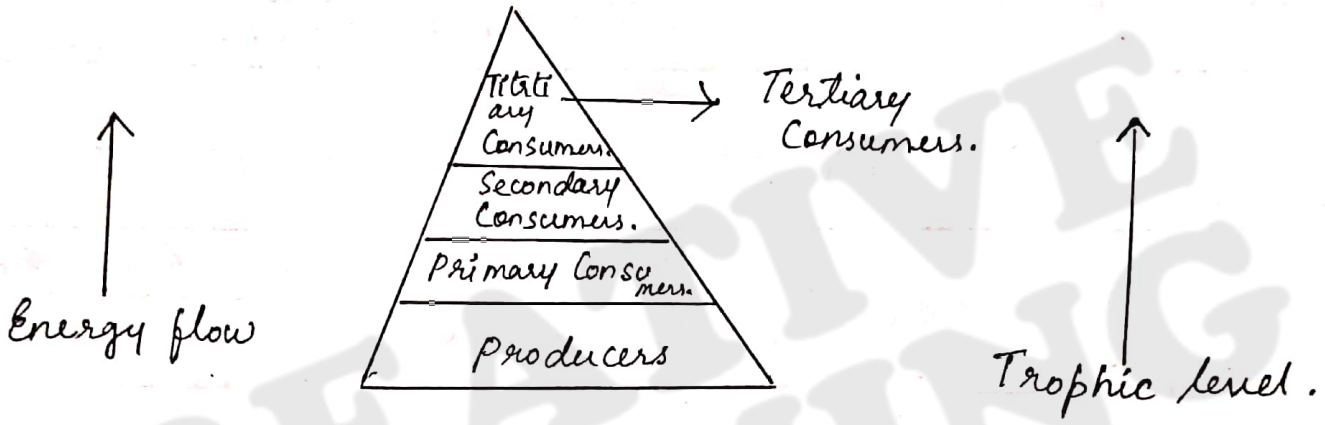
Eg:- T_1 T_2 T_3

Grass → Dear → Lion.

Food Chain:- It is the sequence of living organism in which one organism consumes other organism for energy. It is unidirectional.



- In a food chain, various steps while trasfer of energy takes place called a trophic level.
- The green plants capture 1% of suns energy.
- The flow of energy is undirectional in a food chain.
- There is gradual decrease in the amount of energy from one trophic level to next trophic level in a food chain.



10 percent law:- The energy is transferred to next level while 90% energy is used by present trophic level in its life processes.

- The concentration of harmful chemicals increases with every next trophic level in a food chain. It is called Bio-magnification.
- Maximum concentration of such chemicals get accumulated in human bodies. Since, humans occupy the top of level in any food chain.

Environmental Problems:-

Changes in environment affect us and our activities change the environment around us. Environmental problems caused by humans are:-

(a) depletion of Ozone layer and waste disposal.

(b) Pollution due to mismanagement of waste disposal.

1. **Depletion of Ozone Layer:-**

- (O_3) layer is largely found in the stratosphere which is a part of our atmosphere from 12km - 50km above sea level.
- Ozone is a deadly poison at the ground level.
- Ozone is formed as a result of photochemical reaction:-

$O_2 \xrightarrow{UV} O + O$ (splitting of molecular oxygen).

$O_2 + O \longrightarrow O_3$

- Ozone layer is a protective blanket around earth which absorbs most of the harmful U.V (ultraviolet) radiation of the ~~sky~~ sun.
- Ozone layer emits harmful ozone gases which causes skin cancer, cataract in eyes, weaker immune system etc.
- The decline of Ozone layer thickness in Antartica was first observed in 1985 and was termed as "Ozone Hole"

Garbage Disposal:- Industrialization and rise in demand of consumer goods have created a major problem in the form of wastes and its disposal. The different ways of solid waste disposal commonly around us are:-

Methods for Garbage Disposal :-

1. **Open Dumping** :- It is a conventional method in which solid wastes dumped in selected area of a town.

2. **Land fillings** :- Wastes are dumped in low living areas and are compacted by rolling with bulldozers.

3. **Composting** :- Organic wastes are filled into a compost pit (2m x 1m x 1m). It is then covered with a thin layer of soil. After about three months the same garbage filled inside the pit changes into organic manure.

4. **Recycling** :- The solid waste is broken down into its constituent simpler materials. These materials are then used to make new items.

5. **Reuse** :- A very simple conventional technique of using an item again and again.
   For eg. paper can be reused for making envelops etc.

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