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Environment It is defined as the sum total of air, water and land and inter relationships among them, with human beings, other living organisms and materials.

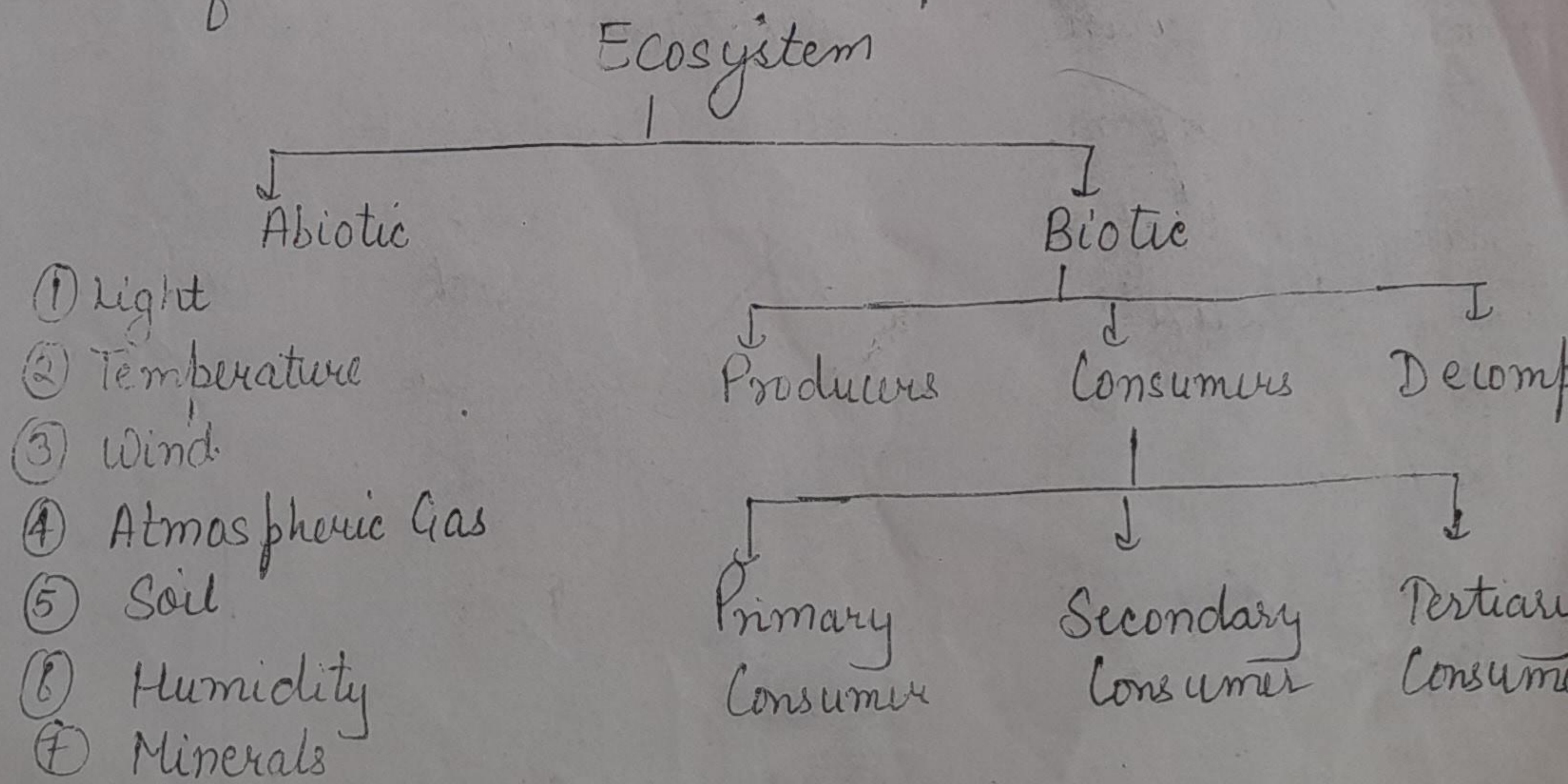
Environmental Science: The scientific study of basic components of our surroundings and their interactions is called environmental science.

Environmental Education: Educating people about environment and its problem is called environmental education.

● Ecology: Ecology is the study of organisms in their natural home interacting with their surroundings.

Ecosystem: An ecosystem includes all of the living things (plants, animals and organisms) in a given area that interact with each other as well as the non-living environment (weather, earth, sun, climate) that surround living thing.

Structure of an Ecosystem: The structure of any ecosystem consists of biotic and abiotic components



A) Biotic components:- Biotic components include all living organisms present in the ecosystem such as plants, animals and microorganisms.

1. Producers:- These are mainly green plants which synthesize their food themselves by using CO_2 present in the air and water in the presence of sunlight by involving chlorophyll through the process of photosynthesis.

2. Consumers:- All organisms which get their organic food by feeding upon other organisms are called consumers.

- (a) Herbivores
- (b) Carnivores
- (c) Omnivores
- (d) Detritivores

3. Decomposers:- A decomposer is an organism that decomposes, or break down, organic material such as the remains of dead organisms.
e.g. Bacteria and Fungi.

These organisms carry out the process of decomposition, which all living organisms undergo after death.

B) Abiotic Components:- Abiotic components are the non living part of an environment. These include things such as sunlight, temperature and naturally occurring events such as storms, fires and volcanic eruptions.

(a) Physical Components:- Water, Sunlight, Temperature, Rainfall, Soil etc.

(b) Chemical Components:- Carbon, Hydrogen, Nitrogen present in water and soil.

① Importance of Ecosystem:- Ecosystem are important to human life because they provide a lot of valuable services which include clean air, water, food and fuel. Ecosystems clean and store fresh water, maintain air quality, provide medicines etc.

Sustainable Development:- Sustainable development is a way for people to use resources without the resources running out. It is defined as development with sustainability that meets the needs of the present without compromising the ability of future generations to meet their own needs.

To obtain sustainable development, the following action strategies are following

- ① Control the population growth.
- ② Reduce the wastage of matter and energy resources.
- ③ Conserve natural resources e.g water, soil, forests etc.
- ④ Make things that last longer and can be easily reduced, reused, recycled and repaired.
- ⑤ Use potentially renewable resources less faster than they are renewed.

Sources of Energy:- Sources of energy may be classified into two categories

- ① Conventional Sources of Energy.
- ② Non-Conventional Sources of Energy.

Conventional Sources of Energy:- Conventional Sources of Energy are natural energy resources which are regularly used for many years.

Conventional Sources of Energy:- These are natural resources or resources which are present in a limited quantity and are being used for a long time. They are called non-renewable sources.
e.g. coal, oil, Natural Gas.

Non-Conventional Sources of Energy:- These are natural energy resources that can be used again and again. These cannot be exhausted easily.
e.g. Bio-energy, solar energy.

Advantages of Renewable Sources of Energy:-

- ① Renewable sources of energy e.g. wind, sun are available in more quantity and free to use.
- ② Renewable sources have low carbon emissions.
- ③ It saves money and creates job & opportunities.
- ④ Maintenance requirements are low.
- ⑤ Renewable energy has numerous health and environmental benefits.

Disadvantages of Renewable Sources of Energy:-

- ① It is not easy to set up a plant as the initial costs are quite high.
- ② Many forms of renewable energy require storage capabilities.
- ③ Solar energy can be used during the day time and not during night or rainy season.

(5)
(4) ~~many pollution as~~ Hydroelectric provide pure form of energy, but building dams across river is expensive.

(5) Geothermal energy bring toxic chemical to the earth surface