ASSIGNMENT

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Subject - Environmental & Ecology
Subject code: ECE-154
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Unit-1

Qu-1 Define ecosystem. Discuss also the structure and concept of ecosystem.

Ans. An ecosystem consists of all the organisms and the physical environment with which they interact. These biotic and abiotic components are linked together through nutrient cycles and energy flows. Ecosystems are controlled by external and internal factors. In general ecosystem is an interconnected or a complex network system.

Concept and Ecosystem and Structure of an ecosystem :-

Living organisms cannot live isolated from their non-living environment because the latter provides materials and energy for the survival of the former i.e. there is interaction between a biotic community and its environment to produce a stable system.

Ecosystem has two main components.

(1) Abiotic
(2) Biotic

(1) Abiatic components :-

The non-living factors or the physical environment prevailing in an ecosystem form the abiotic components. They have a strong influence on the structure, distribution, behaviour and inter-relationships of organisms.

They are two types
(i) Climatic Factors
(ii) Edaphic Factors

(i) Climatic Factors:-
Which include rain, temperature, light, wind, humidity etc are generally Climatic Factors.

(ii) Edaphic Factors:-
Which include soil, PH, topography, minerals etc are generally Edaphic factors.

(2) BIOTIC COMPONENTS -
The living organisms including plants, animals and micro organisms (Bacteria and Fungi) that are present in an ecosystem form the biotic components.

On the basis of their role in the ecosystem the biotic components can be classified into three main groups -

(A) Producers – The green plants have chlorophyll with the help of which they trap solar energy and change it into chemical energy. The chemical energy stored by producers and partially used by them and remaining used by plants.

(B) Consumers – The animals lack chlorophyll and are unable to synthesise their own food. Therefore they depends on the producers for their growth. They are known as heterotrophs.

Que (2) Discuss about the ecological succession.

Ans Ecological succession is the process that describes how the structure of a biological community (that is, an interacting group of various species in a desert, forest, grassland, marine environm and so on) changes over time. The structure of this community becomes more complex as new species arrive on the scene.

There are generally two types of succession.

(1) Primary succession – It is the series of community changes which occur on an entirely new habitat which has never been colonized before

2) Secondary succession – It is the series of community changes which take place on a previously colonized, but disturbed or damaged habitat.

UNIT-2

Que 1 Discuss about the water borne disease. Write down about water borne disease and water induced disease.

Ans Water borne disease is the illnesses caused by micro-organisms in untreated or contaminated water. Water borne diseases are conditions caused by pathogenic micro-organisms that are transmitted in water. These disease can be spread while bathing, washing, drinking water or by eating food exposed to contaminated water. While diarrhea and vomiting are the most commonly reported symptoms of waterborne illness, other symptoms can include skin, ear, respiratory or eye problem. Protozoa and bacteria are microorganism causes water borne disease.

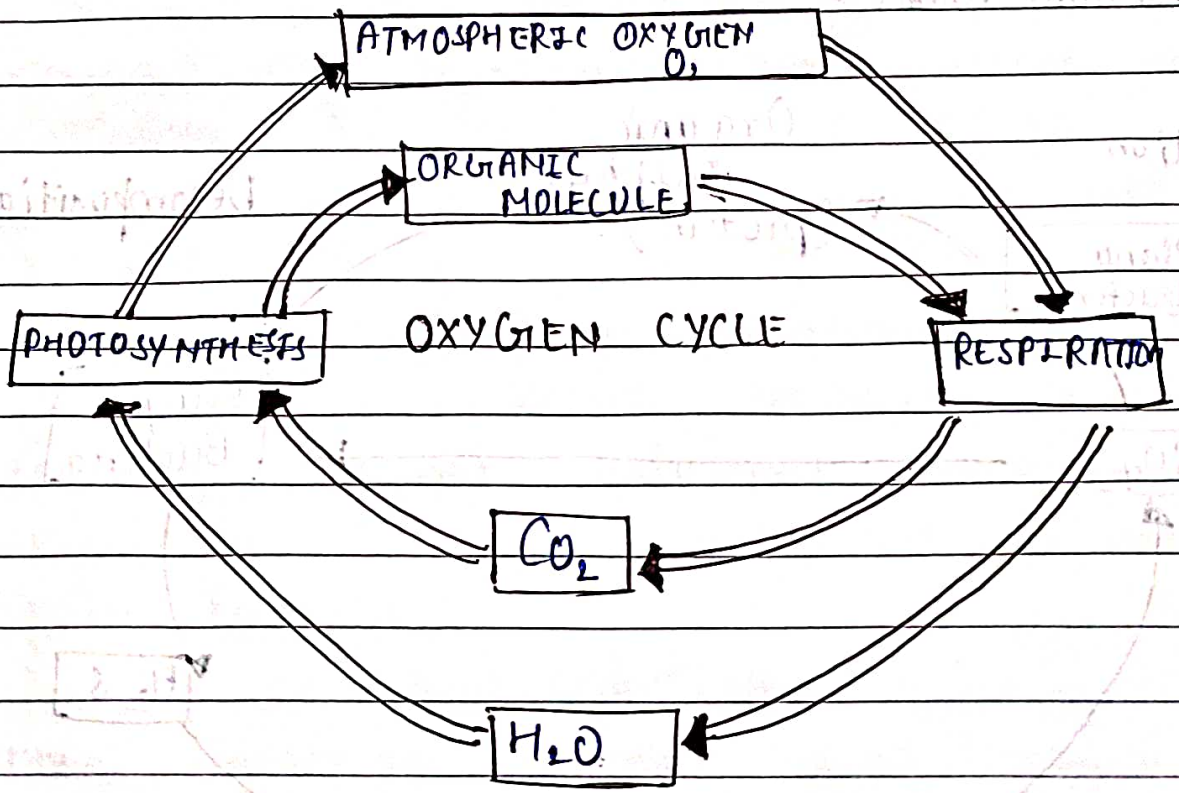
1. Water Induced Disease :- Various disorders can be related to water quality problems. Deterioration in water quality will affect the entire aquarium population, resulting in rapid fish mortalities. Some causing factors are-
   (1) Pesticides
   (2) Heavy Metals
   (3) Chlorine and Chloramines
   (4) Nitrogen Compounds.

② Water borne Diseases :-

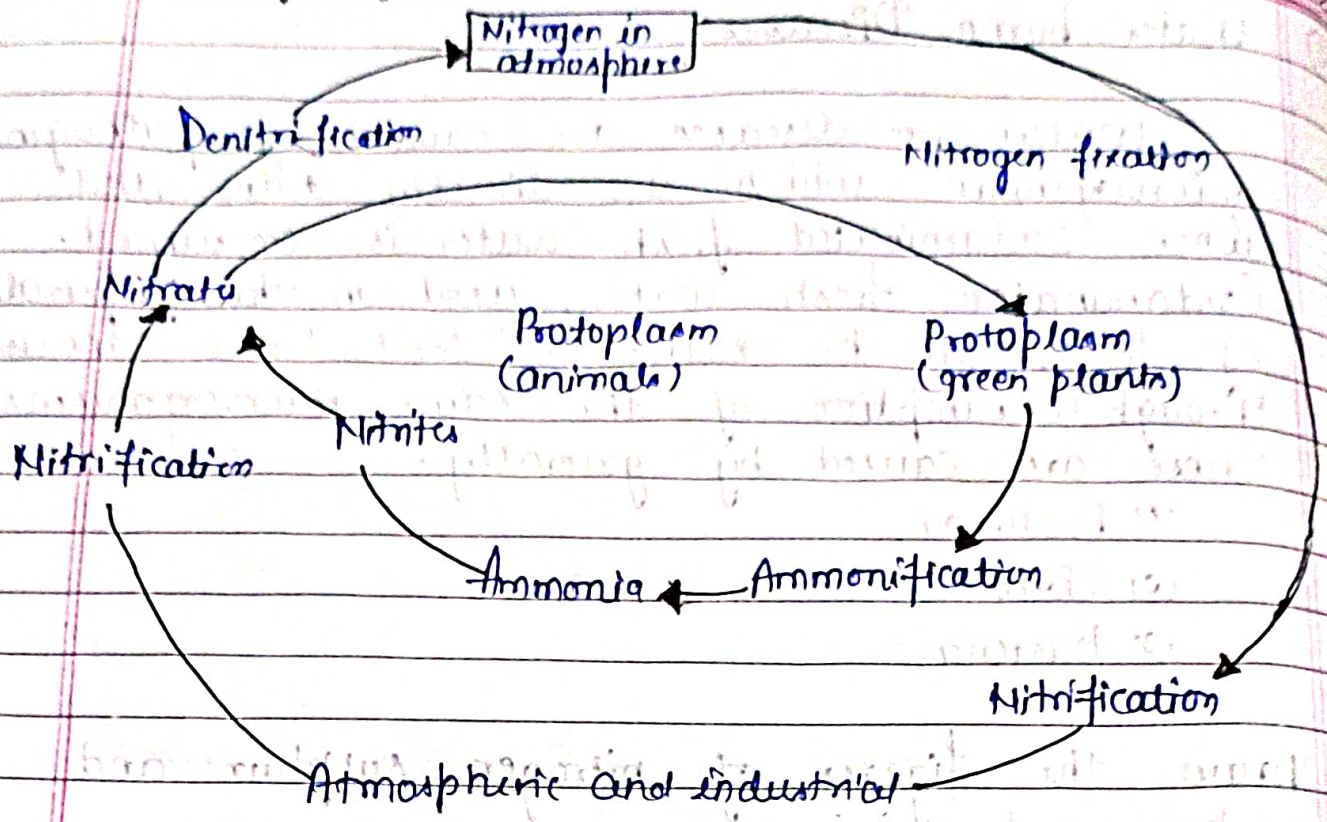
Waterborne diseases are caused by pathogenic microorganism which are directly transmitted when contaminated fresh water is consumed. Contaminated fresh water, used in the preparation of food, can be source of food borne disease through consumption of the same microorganisms. These are caused by generally -

(1) Protozoa
(2) Viruses
(3) Bacteria.

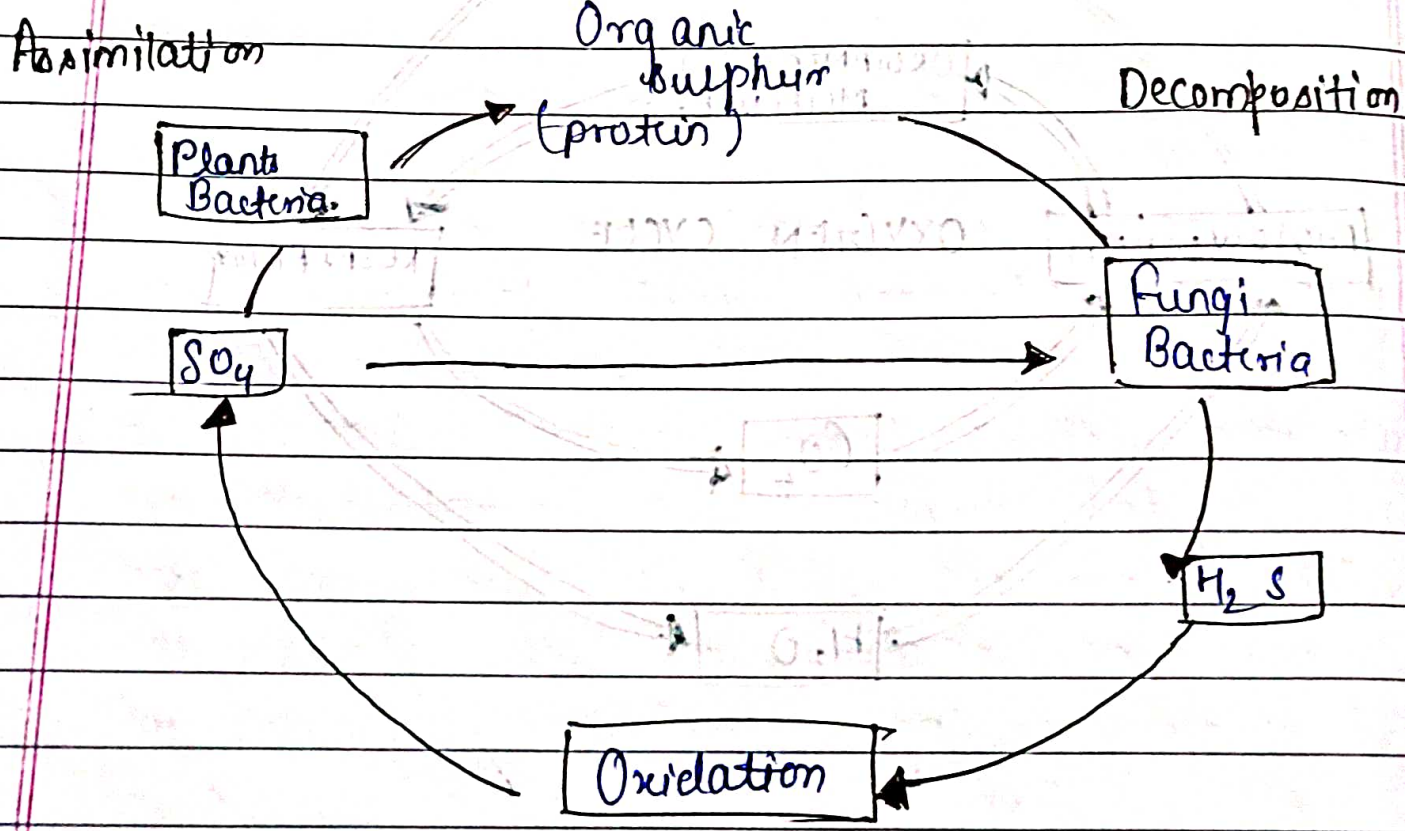
Qu ② Draw the figures of nitrogen, sulphur and carbon cycle.



Nitrogen Cycle →



SULPHUR CYCLE ⇒



UNIT - 3

Qu Discuss about the water pollution and noise pollution.

Ans Water pollution.

Water pollution is the contamination of water bodies, usually as a result of human activities in such a manner that negatively affects its legitimate uses. Water bodies include for example lakes, rivers, oceans, and groud water and reservoirs.

Water pollution results when contaminants are introduced into these water bodies. For example, releasing inadequately treated waste water into natural water can lead to degradation of these aquatic ecosystems. Water Pollution can be classified as surface water pollution, or ground water pollution.

The causes of water pollution includ a wide range of chemicals and pathogens as well as physical parameters. Technology solutions can include improving sanitation, sewage treatment, industrial wastewater treatmen

Noise Pollution:-

Noise pollution, also known as environment noise or sound pollution, is the propagation of noise with ranging impacts on the activity of human or animal life, most of them harmful to a degree. The source of outdoor noise world

is mainly caused by machines, transport and propagation systems. Poor urban planning may give rise to noise dis integration or pollution, side by side industrial and residential buildings can result in noise pollution.

High noise levels can contribute to cardiovascular effects in humans and an increased incidence of coronary artery disease. Three main causes of noise pollution are

i) Air traffic noise
ii) Construction sites
iii) Catering and night life.

Noise is more than a mere nuisance. At certain levels and durations of exposure, it can cause physical damage to the eardrum and the sensitive hair cells of the inner ear.

Que-① Write down the permeable limits of noise pollution.

Ans Undoubtedly, generators have become indispensable in the present times. Generators are applicable almost everywhere from homes, offices to industries. However, most of the generators are accompanied by a noise that is produced due to its operation. This noise can be detrimental for the human ear and lead to several problems. That is why the Central Pollution Control Board (CPCB) has laid down the permissible noise level in India for different regions/areas.

Zone	Permissible noise level standards in the daytime (dB)	Permissible noise level standards at night (dB)
Industrial Zone	75	70
Commercial Zone	65	55
Residential Zone	55	45
Silent Zone	50	40

According to CPCB guidelines, the maximum permissible diesel generator noise level for new generators with up to 1000 kVA rated capacity is 75 dB (A). Noise level refers to the decibel levels of noise that is produced by any appliance or machine. In general human ear can tolerate noise levels up to 85 dB and anything beyond that can affect their productivity as well as their quality of life. The decibel levels of common sounds between 100 - 125 dB are termed as 'uncomfortable.'