SHIKSHA CLASSES

Sub. : Science **Answer Paper** **Total Marks : 30**

Std. IX (CBSE) **13. Natural Resources**

Section A (Each 1 marks)

Q.1 : Which of the following is not a factor responsible for the occurrence of erosion of soil?

Ans : c) Cyclones

OR

An inexhaustible resource is ------

Ans : c) Solar energy

Q.2 : Air is a mixture of :

Ans : d) Nitrogen, oxygen, water vapours, carbon dioxide.

OR

Which of the following is not a renewable resource?

Ans : b) Minerals

For question numbers 3 two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

b) Both A and R are true, but R is not the correct explanation of the assertion.

c) A is true, but R is false.

d) A is false, but R is true

Q.3 : Assertion (A): Ozone layer works as a shield for earth.

Reason (R): Ozone layer reduces the amount of ultraviolet rays reaching the earth.

Ans : a) Both A and R are true, and R is correct explanation of the assertion.

Q.4 : Assertion: Smog is formed from smoke and fog.

Reason: Smog is an opaque fog.

Ans : b) Both A and R are true, but R is not the correct explanation of the assertion.

Q.5 : Assertion: There is an adverse effect of pollutants on Taj Mahal.

Reason: Discolorations of Taj Mahal is due to nitrogen oxides.

Ans : c) A is true, but R is false.

Q6) **Read the paragraph and answer the following questions. (Any Two)** 2

Acid rain is the rainwater which ---------- by the process of combustion.

i) In acid rain which acid is present in excessive amount?

Ans : c) Both a and b

ii) The Oxides of sulphur and nitrogen are formed by the process of————

Ans : c) Both a and b

iii) Write the name of the pollution due to which acid rain fall?

Ans : a) Air

Q.7 : The two forms of oxygen found in the atmosphere are

Ans : c) ozone and oxygen

Q.8 : The process of nitrogen-fixation by bacteria does not take place in the presence of

Ans : b) elemental form of oxygen

Q.9 Among the given options, which one is not correct for the use of a large amount of fertilisers and pesticides?

Ans : a) They are eco-friendly

Q.10 : One of the following processes is not a step involved in the water-cycle operating in nature

Ans : d) photosynthesis

Q.11 : The atmosphere of the earth is heated by radiations which are mainly

Ans : d) re-radiated by land and water

Q.12 : If there were no atmosphere around the earth, the temperature of the earth will

Ans : c) increase during day and decrease during night

Q.13 : One of the following factors does not lead to soil formation in nature

Ans : d) polythene bags

Q.14 : The process of nitrogen-fixation by bacteria does not take place in the presence of

Ans : b) elemental form of oxygen

Section B (Each 2 marks)

Q.15 : Define weathering. Write the different means which cause weathering.

Ans : The process of breaking down of rocks into small, fine mineral particles is called weathering. The weathering may occur due to physical, chemical or biological means.

Q.16 : Combustion of fossil fuels results in the increase of suspended particles in the air. What are these particles ?

Ans : The suspended particles in the air could be unburnt carbon particles or hydrocarbons which lead to smog.

OR

Define biogeochemical cycle.

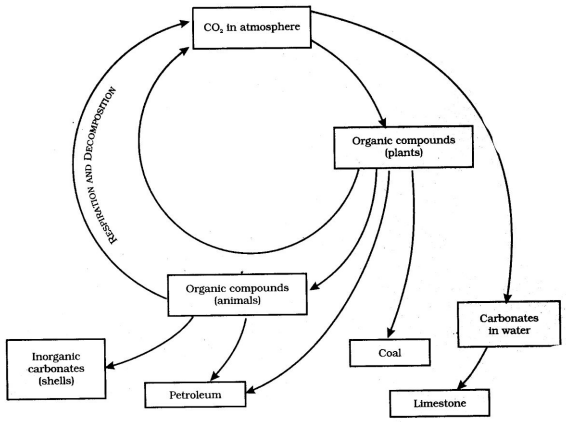
Ans : Biogeochemical cycle is the constant interaction between biotic and abiotic components of the biosphere that causes the exchange of matter and energy between them.

Section C (Each 3 marks)

Q.17 : With the help of a labelled diagram show the cycling of carbon in nature.

What are the two ways in which carbon dioxide is fixed in the environment?

Ans :



There are two different ways by which carbon dioxide can be fixed in the environment. they are:

i) Green plants convert CO_2 into glucose in the presence sunlight by the process of Photosynthesis.

ii) Many marine animals use carbonates dissolved in sea - water to make their cells.

OR

Write a short note on ozone layer and effect of ozone depletion.

Ans : The part of atmosphere rich in ozone concentration is known as ozone layer, ozonosphere or ozone shield.

Ozone layer holds a vital role in the protection of the earth's surface. It acts as a filter restricting entry of high energy ultraviolet rays of the Sun. This high energy splits ozone into molecular and atomic oxygen.

Ozone Depleting Substances : These are the chemicals that reduce the concentration of ozone in the atmosphere. Examples : Chlorofluorocarbons (CFCs), halogens, methyl bromide, nitrogen oxides, chlorine.

Q.18 : Explain the following terms:

i) Nitrogen fixation ii) Nitrification iii) Denitrification.

Ans : 1) The process in which atmospheric nitrogen is converted into usable forms like ammonia, nitrates, nitrites or NO_2 etc. is called nitrogen fixation.

2) The process of formation of nitrites and then to nitrates from ammonium compounds is called nitrification.

3) The process of conversion of some ammonium compounds, nitrites and nitrates into molecular nitrogen is called denitrification.

Section D (5 marks)

Q.19 : What are the causes of water pollution? Discuss how you can contribute in reducing water pollution.

Ans : Causes of water pollution :

i) **Industrial waste :** Industries produce huge amount of waste which contains toxic chemicals and pollutants which can cause air pollution and damage to us and our environment.

ii) **Sewage and waste water :** The sewage and waste water that is produced by each households is chemically treated and released into a sea with fresh water.

iii) **Mining activities :** Mining is the process of crushing the rock and extracting coal and other minerals from under ground.

iv) **Marine dumping :** The garbage produce by each household in the form of paper, aluminium, rubber glass, plastic food if collected and deposited into the sea in some countries.

Contribute in reducing water pollution :

i) Do not pour fat from cooking or any other type of fat, oil or grease down the sink

ii) Do not dispose of household chemicals or cleaning agents down the sink or toilet.

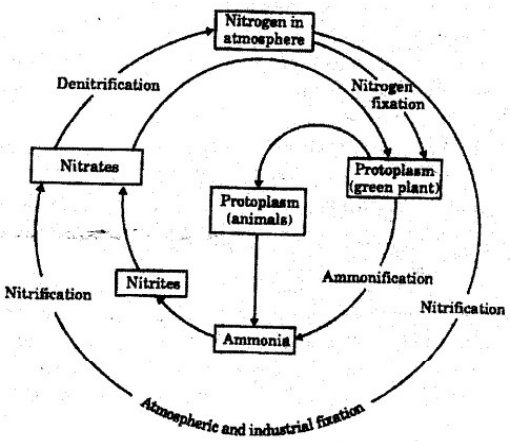
iii) Do not flush, pills, liquid or powder medications or drugs down the toilet.

iv) Avoid using the toilet as a waste basket most tissues, wrappers, dust cloths and other paper goods should be properly discarded in a waste basket.

OR

How does nitrogen fixation take place during lightning ? How do plants make use of the nitrates and nitrites present in soil ?

Ans : Nitrogen fixing bacteria mostly found in the root nodules of leguminous plants convert atmospheric nitrogen molecules into nitrates. During lightning, the high temperatures and pressure created in the air convert nitrogen into oxides of nitrogen. These oxides dissolve in water to give nitrous and nitric acids that fall on land along with rain.



Nitrogen Cycle in Nature

- Nitrogen fixing bacteria which are found in the roots of leguminous plants convert atmospheric nitrogen into nitrate (the usable form by plants).
- During lightning and thunder, the high temperature and pressure help to convert atmospheric nitrogen into oxides of nitrogen and to give nitric and nitrous acids which fall along with rain.
- The plants use nitrogen in the form of nitrates and nitrites to form amino acids and proteins.
- The plants are used as food by animals.
- After the death of plants and animals, the bacteria convert these compounds of nitrogen into nitrates and nitrites, which are used by new plants to grow.
- Some other types of bacteria convert nitrites and nitrates into molecular nitrogen, which escapes into atmosphere and becomes a part of it.

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