Natural Resources: In-Text Questions

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Q.1 How is our atmosphere different from the atmospheres on Venus and Mars?

Sol. Earth's atmosphere is different from the atmosphere on Venus and Mars. Earth's atmosphere consists of nitrogen (78%), oxygen (21%), and a small fraction of carbon dioxide, water vapours and other gases (1%). This composition makes the existence of life possible on Earth. While, the atmospheres on Venus and Mars mainly consist of carbon dioxide range from 95% to 97% which make the existence of life impossible.

Q.2 How does the atmosphere act as a blanket?

Sol. The Earth's atmosphere acts as a blanket by performing the various functions:

(a) It keeps the consistency in temperature of the Earth during the daytime and makes it a comfortable place to stay.

(b) It prevents the escape of all heat from the surface of the Earth into outer space and keeps the earth warm during the night time.

(c) It protects us from the harmful ultra violets rays come from the sun.

Q.3 What causes winds?

Sol. The wind blows due to the uneven heating of the Earth's atmosphere. On being heated more the air becomes lighter and rises up. Due to this, a region of low pressure is created. Then, air moves from a high-pressure region to a low-pressure region, and as a result, the wind blows.

Q.4 How are clouds formed?

Sol. During day time, on being heated more a large amount of water evaporates from water bodies like well, lake, ponds, sea and river etc and this water vapour rises up with hot air. At certain height, air cools and water vapour condenses to form water droplets. The formation of water droplets leads to the formation of clouds.

Q.5 List any three human activities that you think would lead to air pollution.

Sol. The three human activities would lead to air pollution are:

(i) Burning of fossil fuels such as coal and petroleum in the atmosphere.

(ii) Released smoke from the manufacturing and chemical factories.

(iii) Deforestation of forests.

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Q.1 Why do organisms need water?

Sol. Organisms need water. It is very essential for life because of the many reasons:

(i) Plants needs water for make food by the process of photosynthesis.

(ii) the most biological activities like respiration, digestion etc. occur when nutrients are dissolved in water.

(iii) Transportation of biological substances from one part to another part needs water as a medium.

(iv) All living beings are composed of 70% of water.

Q.2 What is the major source of fresh water in the city/town/village where you live?

Sol. River, rainfall, underground water, pond and lake are the major sources of fresh water.

Q.3 Do you know of any activity which may be polluting this water source?

Sol. The discharge of waste water and waste materials from homes, chemical wastes from industries, used syringe and cottons from hospitals, etc. into the river pollutes this fresh water source.

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Q.1 How is soil formed?

Sol. Over the period of times, the rocks at or near the surface of the Earth are broken down through various physical, chemical, and biological processes by various factors such as the sun, water, wind, and living organisms.

(i) Sun: During day time, the rocks heat in presence of sunlight. Due to this, rocks expand. While during night time, these rocks cool down and contract. So, due to uneven expansion and contraction of rocks, cracks are formed in the rocks. These cracks lead to the breaking up of huge rocks into smaller pieces.

(ii) Water: The formation of soil through water occurs in two ways.

(a) Water gets into the cracks and crevices of the rocks. When water freezes, its volume increases. Due to this, the size of the cracks also increases. This helps in the breakdown of rocks.

(b) Fast running water wears away hard rocks over long periods of time. This running water carries big and small particles of rock downstream. These particles rub against each other and break down.

(iii) Wind: Strong blowing winds carry away small and big particles of rocks, which causes rubbing of each other. In this way, the rocks break down into smaller and smaller particles.

(iv) Living organisms: Some living organisms like lichens and moss help in the formation of soil. Lichens and moss also grow on rock surface. During their growth, lichens release certain substances, due to which the rock surface to powder down forming a thin layer of soil.

Q.2 What is soil erosion?

Sol. The blowing away or washing away of top soil by wind or water is known as soil erosion.

Q.3 What are the methods of preventing or reducing soil erosion?

Sol. The methods of preventing or reducing soil erosion are:

(i) Prevention of deforestation

(ii) Afforestation

(iii) Prevention of overgrazing

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Q.1 What are the different states in which water is found during the water cycle?

Sol. During the water cycle, water is found in three states. These states are solid state (snow, ice, etc.), liquid state (ground water, river water, etc.), and gaseous state (water vapours).

Q.2 Name two biologically important compounds that contain both oxygen and nitrogen.

Sol. Two biologically important compounds that contain both oxygen and nitrogen are:

(i) Amino acids

(ii) Nucleic acid (DNA and RNA)

Q.3 List any three human activities which would lead to an increase in the carbon dioxide content of air.

Sol. (i) Burning of fossil fuels for heating, cooking, transportation, and industry etc. produce the carbon dioxide in environment.

(ii) Forest fires due to human, produces the carbon di oxide in environment.

(iii) The process of deforestation decreases the uptake of carbon dioxide by plants for photosynthesis. This will increase the carbon dioxide in environment.

Q.4 What is the greenhouse effect?

Sol. Some gases like carbon dioxide, methane, nitrous oxide prevent the escape of heat in to the space from the Earth's surface. These gasses trap the heat and. increase the average temperature of the Earth. This process is called the greenhouse effect.

Q.5 What are the two forms of oxygen found in the atmosphere

Sol. Two forms of oxygen found in the atmosphere are:

(i) Diatomic molecular form with chemical formula O_2 is found in the lower regions of the atmosphere to extent of 21%. It is non-posionous.

(ii) Triatomic molecular form with chemical formula O_3 known as ozone is found in upper part of atmosphere. It is poisonous.