General Science & Ability

CSS-2017 Section-I

Q. No. 2.

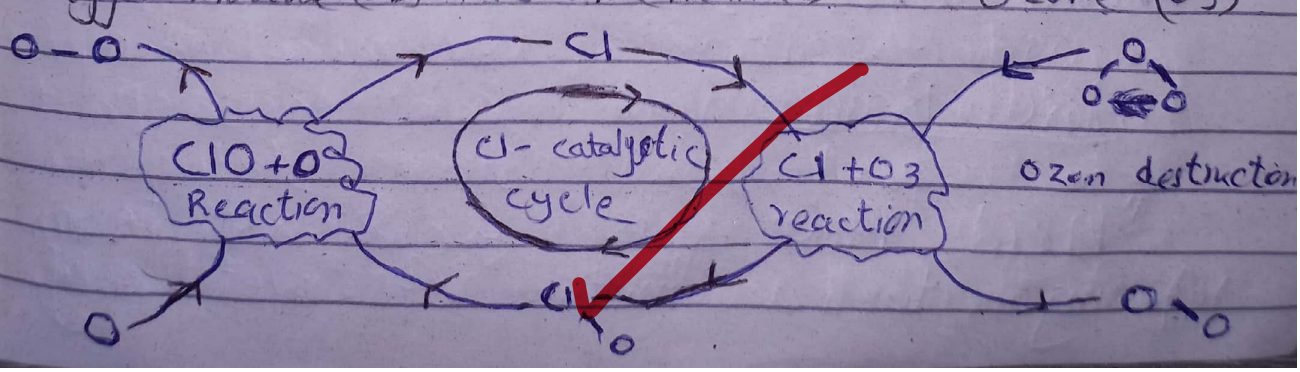
improve paper presentation.

work on the other mentioned areas for improvement.

(B) What do you mean by Ozone depletion and how we can prevent its depletion?

Ozone depletion:

In the 1970s, Scientists became concerned when they discovered that chemicals called chlorofluorocarbons, or CFCs, posed a possible threat to the ozone layer. These chlorine containing chemicals rise into the upper stratosphere and are broken down by sunlight where upon the chlorine reacts with destroys ozone molecule. About 100,000 molecules ~~Broken~~ of ozone are broken down per CFC molecule. The so-called ozone "hole," is a thinned region of the ozone layer that develops in the Antaretic spring and continues for several monti before thickening again.



$ClO + O \rightarrow Cl + O_2$

$Cl + O_3 \rightarrow ClO + O_2$

Net $O + O_3 \rightarrow 2O_2$

How we can prevents its depletion?

Growing concerns for ozone depletion led to the adoption of the Montreal Protocol in 1987, in order to reduce and control industrial emission of Chlorofluorocarbons (CFCs). We too can do our bit to save the ozone. Use/buy more recycled products, save energy take public transport, and most importantly, spread awaness, our individual efforts can go a long way in saving the ozone layer.

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try to divide into subheadings and cover comprehensively.

(D) What is an Acid rain and how it is produced. Breifly describes the dangers associated with it?

Acid Rain:

"Acid Rain" is a broad term referring to a mixture of wet and

dry deposition (deposited material) from the atomsphere containing higher than normal amounts of nitric and sulfuric acids. Sulphur dioxide and nitrogen oxides react with water and other pollutants.

$SO_2 + H_2O \rightarrow H_2SO_3$ (Sulphorous Acid)

$2NO_2 + H_2O \rightarrow HNO_2$ (Nitrous acid) + (HNO_3 nitric acid)

These acid pollutants reach high into atomsphere, travel with the wind for hundreds of miles and eventually return to the ground by way of rain, snow or fog.

Wet Deposition:- If the acid chemicals in air are blown into areas where the weather wet, the acids can fall to the ground in the form of ~~ground~~ rain, snow, fog, or mist.

Dry deposition:- In areas where the weather is dry, the acid chemicals may become incorporated into dust or smoke and fall to the ground through dry deposition, sticking to the ground, buildings, homes, cars and trees. About half of the acidity in the atomsphere falls back to earth through dry deposition.

Briefly describes the dangers associated with it?

Air pollution like SO_2 and nitrogen oxides can cause respiratory diseases, or can make these diseases worse. Rispiratory diseases like asthma or chronic bronchitis make it hard for people to breathe. The pollution that causes acid rain can also create tiny particles. when these particles get into people's lungs, they can cause health problems, or can make existing heath problems worse. Acid rain can be extremely harmful to forests. Acid rain that seeps into the ground can dissolve nutrients such as "Mg" and "Ca" that trees need to be healthy. Acid rain can also causes "Al" to be released into the soil, which makes it difficult for trees to take up water. Acid rain can also have a damaging effect on many objects, including buildings, statues, monuments and cars. The chemical found in acid rain can cause paint to peel and stone statues to begin to appear old and worn down, which reduce their values and beauty.

discuss this part in detail as well by giving subheadings.

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(B) Briefly explain the main reasons of water logging in Pakistan.

Water-logging:-

The condition of soil when it becomes 100% saturated with water and becomes unfit for the growth of plants is called water logging. In such soils, the space between the soil particles is occupied by water instead of air.

Reasons of Water Logging:-

(1) Rainfall: After heavy rainfall, rain water percolates down the pores between the soil particles under the action of gravity and finally reaches the aquifer which causes the water table to rise towards the soil surface. During rainy season, the upper layers of soil become highly saturated with water.

(2) Floods:- After heavy rainfall, the flood water spreads on the surface of the soil in the plains. Due to inappropriate drainage system, this water percolates in soil and raise the water table which ultimately results in water logging.

of what? use specific and self explanatory headings.

3) Poor Management system:-

Sometimes farmer use their land unscientifically. They have been depending on excessive irrigation in cultivating certain crops. Excessive irrigation and lack of adequate drainage system cause increase in water logging.

4) By breaking hardpan at a canal bed

During cleaning season, the digging of canals breaks down the hardpan of the soil at canal bed. It also enhances the seepage of water to adjacent soil and results in water logging.

5) Seepage from canals:-

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The canals are constructed in such a way that the water level in them is much above the surface of the soil to be irrigated. This level of water is maintained for smooth flow of water from canals to the distributaries and finally to the field. The canal water percolates outward to neighbouring soil by seepage and is then infiltrated down to the water table.