



NEET Chemistry

Short Notes

Environmental Chemistry

Powered by :



gradeup



ENVIRONMENT Chemistry is one of the important part in NEET exam. Always very easy question is asked from this part so there is quick revision and some important points to remember in environmental chemistry.

INTRODUCTION

It is the branch of chemistry which deal with study of transportation, bad effect and propagation of pollutant into the environment. To discuss environmental pollution, we should know about environmental segments.

Environment is composer of four segments:

Lithosphere: Earth, minerals, rocks

Atmosphere: consist of several gases and lies at 500 m from the sea level.

- Troposphere (0-11) km from earth
- Stratosphere (11-50) km from earth
- Mesosphere (50-85) km from earth
- Thermosphere (85-500) km from earth

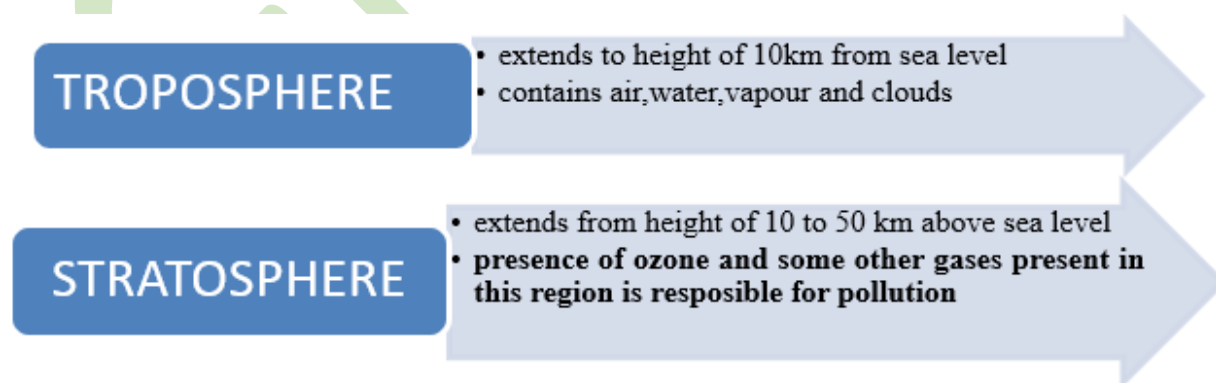
Biosphere: It involves living things which are present on water, earth, and plants.

Hydrosphere: The water present in sea, lakes, ponds and underground water lies in hydrosphere

Atmosphere

1. Any substance present in environment in greater proportion than its natural abundance and resting in harmful effect is called pollutant and this phenomenon is known as pollution.

The atmosphere surrounds us divided into two parts:



TROPOSPHERIC POLLUTION

High concentration results in respiratory problems in human beings as well as harmful effects to plants resulting in leaf spotting and also suppress vegetation growth.



No.1 site & app

for JEE, BITSAT, NEET, SSC, Banking
& other competitive exams preparation

ATTEMPT NOW

- Responsible for photo chemical fog.

OXIDES OF CARBON:

1. Carbon Monoxide (CO)

- Released by combustion of diesel & petrol
- React with hemoglobin and form carboxy hemoglobin. This will cause suffocation and ultimately lead to death

2. Carbon dioxide (CO₂)

- Present in air in about 0.03% by volume.
- Released into atmosphere by combustion of fossil fuel such as coal and oil and regularly by green plants and forests.
- Affects respiratory system and main gas for green house effect

OXIDES OF SULPHUR:

- Sulphur dioxide (SO₂), Sulphur trioxide (SO₃), and vapour of Sulphuric acid (H₂SO₄) act as major pollutants in air.
- SO₂ is a major source of irritation of eyes and respiratory tract and leads to serious disease like bronchitis and lung cancer.
- Sulphur trioxide is more harmful than sulphur dioxide.
- Sulphur dioxide has harmful effects on buildings and statues made of marble and lime stone.

HYDROCARBON:

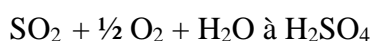
- They continuously emitted into atmosphere as methane and ethylene from marshes and paddy fields.
- Hydrocarbon react with ozone and oxides of nitrogen to form aldehydes and peroxy acyl nitrate which constitute photochemical smog.

CHLOROFLUOROCARBONS:

- These are also known as **freons** and mostly used as refrigerants solvents and foaming agents.

ACID RAIN :

- The PH of normal rain varies from 5.6 to 6. But in highly industrialized area oxides of nitrogen and sulphur formed as combustion of coal and oil are released to atmosphere and not dissolve in water and form nitric acid and sulphuric acid.



No.1 site & app

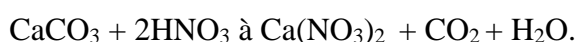
for JEE, BITSAT, NEET, SSC, Banking
& other competitive exams preparation

ATTEMPT NOW

- The presence of carbon particles speed up oxidation process and pH reduces to 3 to 4.5. The rain has given special name **ACID RAIN**.

HARMFUL EFFECTS:

- The statues made of marble and lime stone are slowly corroded as rain water containing acid falls on them. Both sulphuric acid and nitric acid dissolve calcium carbonate to form calcium sulphate and calcium nitrate respectively.



- Acid rain washes number of essential minerals from soil and latter depleted of these minerals is not good enough for growth of plants. Acid also damage leaves of plants and trees and retard the growth of plants.

GREEN HOUSE EFFECT AND GLOBAL WARMING :

GREEN HOUSE EFFECT :

The human being are living in green house which is blanket of air called atmosphere which surround us. Its job is to keep temperature of earth constant. Sun is major source of energy and 75 percent of solar energy is absorbed by the earth and reat radiated back and some gases like methane, carbon dioxide, ozone have capacity to trap some heat radiation these gases are **known as green house gases and effect is green house effect and this leads to global warming.**

- **Because of global warming glaciers will melt at higher rate and this will lead to rise sea level on floods and loss of soil particularly in coastel areas.**
- **Global warming leads to forest fires which is very common over the years.**

ROLES OF PARTICULATE IN ATMOSPHERIC POLLUTION:

- Particulates are small and tiny particles suspended in atmosphere which may either solid or liquid and mostly invisible to naked eye.
- These are of two types:
 1. Viable particulates : these are bacteria, moulds, algae, fungi etc dispersed in atmosphere.
 2. Non viable particulates : these are four types: mist, smoke, fume, dust.
- The fine particles of size less than 5 microns can penetrate into lungs and has carcinogenic effects and can lead to serious lungs disease.
- Particle size more than 5 micron are comparatively coarser resulting problems related to breathing and sometimes block sun rays from reaching surface of earth.

SMOG: air pollution is commonly in big and industrial cities in form of smog which is quite often termed as SMOKE-SMOG. These are of two types:



No.1 site & app

for JEE, BITSAT, NEET, SSC, Banking
& other competitive exams preparation

ATTEMPT NOW

- CLASSICAL SMOG: this may result in cold climate as a result of the condensation of vapours and sulphur dioxides and particles of fuel combustion.
- PHOTOCHEMICAL SMOG:

Chemical smog	Photochemical smog
It is formed due to condensation of SO ₂ vapours on particles of carbon in cold climate	It is formed as a result of photochemical decomposition of nitrogen dioxide and chemical reaction involving hydrocarbon
It is form of smoke or fog	There is no smoke or fog in this case
It is form in winter when there is severe cold particularly in morning hours	Since photochemical reactions take place in sunlight therefore sunny weather is always favourable
It is known as London smog	It is quite often named as Angeles Smog

STRATOSPHERIC POLLUTION:

- Stratosphere extends to height between 10 to 50 km above sea level.
- It is mainly because of oxides of nitrogen and chlorofluorocarbons which undergo dissociation in presence of high energy ultraviolet radiations which are mainly present here.
- This leads to depletion of ozone layer because it takes part in chemical combination with species that are formed.
- Because of destruction of ozone in the ozoneosphere high radiation U.V. rays will lead to health hazard and which causes diseases like : **SKIN CANCER, LOSS OF SIGHT, EFFECT OF IMMUNE SYSTEM.**

WATER POLLUTION :

- The change in normal properties of water (physical, chemical and biological) by presence of foreign materials is known as water pollution.
- The waste like rags, paper discard, decaying plants are organic waste and decomposed by organic bacteria into carbon dioxide, nitrate, sulphates phosphate etc. they take dissolved oxygen from water and as a result oxygen content in water decreases.
- Biological oxygen demand is the amount of oxygen in milligrams dissolved in water needed to break down organic matter present in one litre of water for five days at 20^o
- BOD 0-3 → PURE WATER
- BOD > 5 → Water is somewhat contaminated
- If in addition to organic product some other chemical substances react with oxygen dissolved in water this is known as CHEMICAL OXYGEN DEMAND.
- COD is always greater than BOD.
- The chemical industries waste like lead, mercury cadmium and nickel also pollute the water and causes many diseases.

SOIL POLLUTION:



No.1 site & app

for JEE, BITSAT, NEET, SSC, Banking & other competitive exams preparation

ATTEMPT NOW

www.gradeup.co

- Main cause is dumping of solid and semi – solid waste from agriculture, industry and urban areas in the soil.
- It also results because of washing down of air pollutants by rain and faulty sanitation in soil.

All the best!!

Team Gradeup

Download Gradeup, the best [NEET Preparation App](#)

Attempt subject wise questions in our [new practice section](#) and complete [previous year papers of NEET](#)

Gradeup



No.1 site & app

for JEE, BITSAT, NEET, SSC, Banking
& other competitive exams preparation

ATTEMPT NOW



JEE, NEET, GATE, SSC, Banking & other Competitive Exams

- Based on Latest Exam Pattern
- NTA based JEE Preparation
- Get your doubt resolved by mentors
- Practice questions and get detailed solutions
- Previous year paper detailed solution

