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Environmental Issues

TOPIC 1
Air Pollution and Its Control

01 Air (Prevention and Control of Pollution) Act was amended in 1987 to include among pollutants **[NEET (Oct.) 2020]**

(a) vehicular exhaust
(b) allergy causing pollen
(c) noise
(d) particulates of size 2.5 micrometer or below

Ans. (c)

Air prevention and control of pollution acts was amended in 1987 to include noise among pollutants. This act is meant for preserving quality of air, controlling air and noise pollution and prevent their detrimental effects on human health and health of other biological entities.

02 Due to increasing air-borne allergens and pollutants, many people in urban areas are suffering from respiratory disorder causing wheezing due to **[NEET (National) 2019]**

(a) inflammation of bronchi and bronchioles
(b) proliferation of fibrous tissues and damage of the alveolar walls
(c) reduction in the secretion of surfactants by pneumocytes
(d) benign growth on mucous lining of nasal cavity

Ans. ***(a)***

Wheezing occurs due to the inflammation of bronchi and bronchioles. It is one of the most significant feature of asthma in which people face difficulty in breathing. It is usually caused due to increasing air borne allergens and pollutants.

The allergens stimulate the release of histamine from the mast cells which in turn contracts the smooth muscles of bronchioles.

03 Which of the following protocols did aim for reducing emission of chlorofluorocarbons into the atmosphere? **[NEET (National) 2019]**

(a) Kyoto Protocol
(b) Gothenburg Protocol
(c) Geneva Protocol
(d) Montreal Protocol

Ans. ***(d)***

Montreal Protocol aimed to reduce the emission of chlorofluorocarbons into atmosphere because it has the deleterious effects on stratospheric ozone. This protocol was signed in Montreal, Canada in 1987. Kyoto Protocol aimed to reduce the emission of CO_2, NO_2 and methane.
It was signed by 160 countries in a convention held in Kyoto, Japan in 1997. Geneva Protocol is a treaty to prohibit the use of chemical or biological weapons in international armed conflicts.

Gothenberg Protocol is a multipollutant protocol which focuses to reduce eutrophications, acidification, emission standards for SO_2, etc.

04 Which of the following is a secondary pollutant? **[NEET 2018]**

(a) SO_2 (b) CO_2
(c) CO (d) O_3

Ans. ***(d)***

Ozone (O_3) is a secondary pollutant as it is formed by the reaction amongst the primary pollutants. On the other hand, **SO_2** is a primary pollutant. These pollutants persist in the environment in the form they are passed into it. **CO** is qualitative pollutant.

It is considered as pollutant only when its concentration reaches beyond a threshold value in the environment. CO_2 is a quantitative as well as a primary pollutant.

05 Which one of the following statements is not valid for aerosols ? **[NEET 2017]**

(a) They are harmful to human health
(b) They alter rainfall and monsoon patterns
(c) They cause increased agricultural productivity
(d) They have negative impact on agricultural land

Ans. ***(c)***

Aerosol refers to the suspended particulate matter of less than 1 μm size. These are kind of air pollutants that are suspended in our atmosphere. They have a measurable effect on climate change as they can modify the amount of energy reflected by clouds.

As a result, they can change the atmospheric circulation patterns and affect agriculture negatively. These also affect human health by causing breathing problems.

06 Which of the following are most suitable indicators of SO_2 pollution in the environment? **[CBSE AIPMT 2015]**

(a) Lichens
(b) Conifers
(c) Algae
(d) Fungi

Ans. ***(a)***

Lichens are useful bioindicators for air pollution, especially sulphur dioxide pollution, since they derive their water and essential nutrients mainly from the atmosphere rather than from soil.

07 Acid rain is caused by increase in the atmospheric concentration of **[CBSE AIPMT 2015]**

(a) SO_2 and NO_2 (b) SO_3 and CO
(c) CO_2 and CO (d) O_3 and dust

Ans. *(a)*

Acid rain is caused by increase in the atmospheric concentration of SO_2 and NO_2. These mix with water vapour to form sulphuric acid (H_2SO_4) and nitric acid (HNO_3) respectively which falls on earth in the form of acid rain.

08 The UN conference of Parties on climate change in the year 2012 was held at **[CBSE AIPMT 2015]**

(a) Durban (b) Doha
(c) Lima (d) Warsaw

Ans. *(b)*

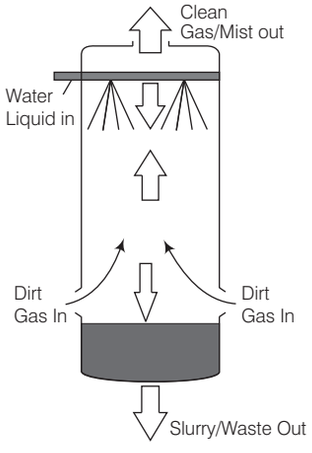
The UN conference of Parties (COP-18) was the UN framework convention on climate change (UNFCCC) was held in Doha, Qatar from 26th Nov. to 8th Dec, 2012.

09 A scrubber in the exhaust of a chemical industrial plant removes **[CBSE AIPMT 2014]**

(a) Gases like sulphur dioxide
(b) Particulate matter of the size 5 micrometer or above
(c) Gases like ozone and methane
(d) Particulate matter of the size 2.5 micrometer or less

Ans. *(a)*

Scrubber is an electrostatic precipitator in which the dirty air is cleaned by capturing the gas like SO_2 and other oxides in water/lime spray ($CaCO_3$). The calcium in lime stone combines chemically with the sulphur to produce calcium sulphate ($CaSO_4$), which is separately collected. The detailed mechanism is shown in the figure below:



10 The Air Prevention and Control of Pollution Act came into force in **[NEET 2013]**

(a) 1975 (b) 1981
(c) 1985 (d) 1990

Ans. *(b)*

Air Prevention and Control of Pollution Protection Act come into force in 1981 to control and prevent air pollution. It was amended in 1987. Environmental Protection Act in 1986 and water (Prevention and Control of Pollution) act in 1974.

11 Kyoto Protocol was endorsed at **[NEET 2013]**

(a) CoP-3
(b) CoP-5
(c) CoP-6
(d) CoP-4

Ans. *(a)*

Kyoto Protocol is an international agreement linked to United nations framework convention on climate change. It held at Kyoto, Japan in 1997 and entered into force on 16 February, 2005. The developed countries agreed to specific targets for cutting their emissions of greenhouse gases.

A general framework was defined for this, with specifics to be detailed over the next few years. This became known as the Kyoto Protocol.

12 Which one of the following statements is wrong in case of Bhopal gas tragedy? **[CBSE AIPMT 2011]**

(a) Thousands of human being died
(b) adioactive fall out engulfed Bhopal
(c) It took place in the night of December 23, 1984
(d) Methyl isocyanate gas leakage took place

Ans. *(d)*

Bhopal gas gragedy (Bhopal disaster) one of the world's worst industrial catastrophes. It occurred on the night of December 23, 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh.

A leak of methyl isocyanate gas and other chemicals from the plant resulted in the exposure of hundreds of thousands of people.

The official immediate death toll was 2,259 and the government of Madhya Pradesh has confirmed a total of 3,787 deaths related to the gas releases.

13 dB is a standard abbreviation used for the quantitative expression of **[CBSE AIPMT 2010]**

(a) the density of bacteria in a medium
(b) a particular pollutant
(c) the dominant *Bacillus* in a culture
(d) a certain pesticide

Ans. *(b)*

Noise pollution is a physical form of pollution that affects the receiver directly affecting the nervous system which result into various disorders in humans. dB (decibel) is a standard abbreviation used for the quantitative expression of noise. Noise or pollutant sound has a value of 80 dB and above, it harms hearing system. The WHO has fixed 45 dB as the safe noise level for a city.

14 Steps taken by the Government of India to control air pollution include **[CBSE AIPMT 2009]**

(a) compulsory mixing of 20% ethyl alcohol with petrol and 20% biodiesel with diesel
(b) compulsory PUC (Pollution Under Control) certification of petrol driven vehicles, which tests for carbon monoxide and hydrocarbons
(c) permission to use only pure diesel with a maximum of 500 ppm sulphur as fuel for vehicles
(d) use of non-polluting Compressed Natural Gas (CNG) only as fuel by all buses and trucks

Ans. *(b)*

Government of India have taken many steps to control air pollution. Out of which one includes compulsory PUC (Pollution Under Control) certification of petrol driven vehicles, which test for carbon monoxide and hydrocarbons emissions of the vehicles.

15 According to Central Pollution Control Board (CPCB), which particulate size in diameter (in micrometres) of the air pollutants is responsible for greatest harm to human health? **[CBSE AIPMT 2008]**

(a) 2.5 or less (b) 1.5 or less
(c) 1.0 or less (d) 5.2 or 2.5

Ans. *(a)*

According to CPCB, air pollutants of size 2.5 or less (in micrometres) diameter are harmful to human health. It is the main cause of respiratory disorders in polluted cities like Delhi.

16 In a coal fired power plant, electrostatic precipitators are installed to control emission of **[CBSE AIPMT 2007]**

(a) SO_2 (b) NO_x
(c) SPM (d) CO

Ans. *(c)*

The electrostatic precipitors are installed to control emission of Suspended Particulate Matter (SPM) as it is cause of various respiratory disorders in humans.

17 Lead concentration in blood is considered alarming if it is **[CBSE AIPMT 2004]**

(a) 20 μg/100 mL (b) 30 μg/100 mL
(c) 4-6 μg/100 mL (d) 10 μg/100 mL

Ans. *(b)*

The concentration of lead in blood averages about 25 μ*g* / 100 mL. Increase to 70 μg / 100 mL is generally associated with clinical symptoms. Hence, a level of 30 μg / 100 mL is considered alarming. The chief sources of Pb to water are the effluents of lead and lead processing industries.

18 In 1984, the Bhopal gas tragedy took place because methyl isocyanate **[CBSE AIPMT 2004]**

(a) reacted with DDT
(b) reacted with ammonia
(c) reacted with CO_2
(d) reacted with water

Ans. *(d)*

Bhopal gas tragedy occurred (23 Dec. 1984) when MIC (Methyl Isocyanate) reacted with water in a tank, an exothermic chemical reaction started and produced a lot of heat. As a result, the safety valve of tank burst because of increase in pressure and gave rise to a heavy gas which rapidly killed the people around.

19 What is the intensity of sound in normal conversation? **[CBSE AIPMT 2001]**

(a) 0-20 dB (b) 30-60 dB
(c) 70-90 dB (d) 120-150 dB

Ans. *(b)*

The word noise is taken from the Latin word nausea and is defined as unwanted or unpleasant sound that causes discomfort.

Intensity of some noise sources is as follows:

Source	Intensity (dB)
Breathing	10
Broadcasting studio	20
Trickling clock	30
Library	30-35
Normal conversation	35-60
Telephone	60
Office noise	60-80
Alarm clock	70-80
Traffic	50-90
Motor cycle	105
Jet fly (over 1000')	100-110
Train whistle (50')	110
Air craft (100')	110-120
Commercial jet air craft (100')	120-140
Space rocket (launching)	170-180

20 Which of the following is pollution related disorder? **[CBSE AIPMT 1999]**

(a) Fluorosis (b) Leprosy
(c) Pneumonicosis (d) Silicosis

Ans. *(d)*

Silicosis is a pollution related disorder. It is caused by inhalation of dust containing free silica or silicon dioxide especially by workers engaged in mining, pottery, ceramic industry, sand blasting, building and construction industries.

Fluorosis is caused due to deficiency of fluoride.

Leprosy is caused by *Mycobacterium leprae*.

Pneumonicosis is caused by *Diplococcus pneumoniae*.

21 Which of the following is a secondary pollutant? **[CBSE AIPMT 1999]**

(a) Aerosol (b) CO
(c) PAN (d) CO_2

Ans. *(c)*

PAN (Peroxy Acetyl Nitrate) is secondary pollutant. Pollutants formed by the chemical interaction of primary pollutants with atmospheric gas and moisture, often catalysed by sunlight are called secondary pollutants.

22 In 1984, Bhopal gas tragedy was caused due to the leakage of **[CBSE AIPMT 1999]**

(a) potassium isocyanate
(b) sodium monoxide
(c) sodium thiocyanate
(d) methyl isocyanate

Ans. *(d)*

Methyl isocyanate gas, used as raw material for synthesising carbonyl, caused Bhopal gas tragedy in 1984.

23 Carbon monoxide is a pollutant because **[CBSE AIPMT 1998]**

(a) it reacts with O_2
(b) it inhibits glycolysis
(c) it reacts with haemoglobin
(d) it makes nervous system inactive

Ans. *(c)*

Carbon monoxide, (CO) when inhaled, combines with blood haemoglobin to form carboxy haemoglobin at a rate 210 times faster than the oxygen forms oxyhaemoglobin. Thus, respiration is impaired.

24 The CO_2 content by volume, in the atmospheric air is about **[CBSE AIPMT 1997]**

(a) 0.0314% (b) 0.34%
(c) 3.34% (d) 4%

Ans. *(a)*

CO_2 constitutes 0.0314% of the atmosphere. Producers use CO_2 along with energy from sun and make carbon compounds such as glucose during the process of photosynthesis. Consumers use these compounds as energy source.

25 The Taj Mahal is threatened due to the effect of **[CBSE AIPMT 1995]**

(a) oxygen
(b) hydrogen
(c) chlorine
(d) sulphur dioxide

Ans. *(d)*

Taj Mahal of Agra is affected by gases discharged from oil refinery in Mathura which consists of SO_2, H_2S and nitrogen oxide. SO_2 corrodes metals, equipment and damages buildings marble.

26 Sound becomes hazardous noise pollution at level **[CBSE AIPMT 1994]**

(a) above 30 dB (b) above 80 dB
(c) above 100 dB (d) above 120 dB

Ans. *(b)*

Noise pollution is measured in decibels. Noise level up to 64 dB is well tolerated. Noise above 80 dB causes discomfort in man. WHO recommends an industrial noise limit of 75 dB.

27 Atmosphere of big/metropolitan cities is polluted most by **[CBSE AIPMT 1994]**

(a) automobile exhausts
(b) pesticide residue
(c) household waste
(d) radioactive fall-out

Ans. *(a)*

Automobile exhausts are the largest source of air pollution in big cities. Automobiles release carbon monoxide (77.2%), hydrocarbons (13.7%) and nitrogen oxide (7.7%).

28 Major aerosol pollutant in jet plane emission is **[CBSE AIPMT 1990]**

(a) sulphur dioxide
(b) carbon monoxide
(c) methane
(d) chlorofluoro-carbons

Ans. *(d)*

Aerosols are the chemicals released in air with force. Jet aeroplanes are important source of aerosol in upper atmosphere. Aerosols contain CFCs (Chlorofluoro Carbons).

29 Which one is not a pollutant normally? **[CBSE AIPMT 1988]**

(a) Hydrocarbons
(b) Carbon dioxide
(c) Carbon monoxide
(d) Sulphur dioxide

Ans. *(b)*

CO_2 is an essential component of the air and its concentration is 0.03% but when CO_2 concentration goes above this limit, it acts as a pollutant.

30 Acid rains are produced by **[CBSE AIPMT 1988]**

(a) excess NO_2 and SO_2 from burning fossil fuels
(b) excess production of NH_3 by industry and coal gas
(c) excess release of carbon monoxide by incomplete combustion
(d) excess formation of CO_2 by combustion and animal respiration

Ans. *(a)*

SO_2 and NO_2 are the gases responsible for acid rains. SO_2 mainly comes from burning of coal, fossil fuel, in the form of smoke from industries.

TOPIC 2
Water Pollution and Its Control

31 Which of the following is put into anaerobic sludge digester for further sewage treatment? **[NEET (Sep.) 2020]**

(a) Floating debris
(b) Effluents of primary treatment
(c) Activated sludge
(d) Primary sludge

Ans. *(c)*

Activated sludge is put into anaerobic sludge digester for further sewage treatment. It contains biological flocs that contain bacteria and protozoan for further digestion of organic wastes under aerobic conditions.

32 Which one of the following equipments is essentially required for growing microbes on a large scale, for industrial production of enzymes? **[NEET (National) 2019]**

(a) Sludge digester (b) Industrial oven
(c) Bioreactor (d) BOD incubator

Ans. *(c)*

Bioreactors are required for growing microbes on large scale for the industrial production of enzymes. These large vessels provide biologically active environment. On the other hand, sludge digesters are used to decompose organic solid waste under aerobic conditions. BOD incubators are used to maintain the temperature for tissue culture growth, bacterial cultures, etc.

33 Match the items given in Column I with those in Column II and select the correct option given below. **[NEET 2018]**

	Column-I		Column-II
1.	Eutrophication	i.	UV-B radiation
2.	Sanitary landfill	ii.	Deforestation
3.	Snow blindness	iii.	Nutrient enrichment
4.	Jhum cultivation	iv.	Waste disposal

	1	2	3	4
(a)	(iii)	(iv)	(i)	(ii)
(b)	(i)	(iii)	(iv)	(ii)
(c)	(ii)	(i)	(ii)	(iv)
(d)	(i)	(ii)	(iv)	(iii)

Ans. *(a)*

Eutrophication is the nutrient enrichment of water bodies containing excessive population of phytoplanktons.

Sanitary landfill is a method of solid waste disposal in which the waste material is burried in the pits dug on the ground and later they get covered by soil.

Snow blindness is caused due to UV-B radiations exposure. These radiations can reach the earth surface due to the depletion of ozone layer.

In Jhum cultivation, land is cultivated temporarily and then abandoned so that, it can revert to its natural vegetation. It is a long term process and usually leads to deforestation.

34 A river with an inflow of domestic sewage rich in organic waste may result in **[NEET 2016, Phase I]**

(a) increased population of aquatic food web organisms
(b) an increased production of fish due to biodegradable nutrients
(c) death of fish due to lack of oxygen
(d) drying of the river very soon due to algal bloom

Ans. *(c)*

A river with an inflow of domestic sewage rich in organic waste will reduce the dissolved oxygen (DO). The organic waste will increase biological oxygen demand of the river thus depleting the O_2 content and may result in death of fish due to lack of oxygen.

35 The highest DDT concentration in aquatic food chain shall occur in **[NEET 2016, Phase II]**

(a) phytoplankton
(b) seagull
(c) crab
(d) eel

Ans. *(b)*

DDT is a toxic substance which gets concentrated subsequently in a food chain of an aquatic ecosystem in the following manner

Phytoplanktons → Eel → Crab → Seagull

(0.04 ppm) (0.5 ppm) (2 ppm) (25 ppm)

Thus, the animal or organism acquiring the highest position in a food chain would have the highest DDT concentration (here seagull). This process is known as biological magnification or biomagnification.

36 A lake which is rich in organic waste may result in **[NEET 2016, Phase II]**

(a) increased population of aquatic organisms due to minerals
(b) drying of the lake due to algal bloom
(c) increased population of fish due to lots of nutrients
(d) mortality of fish due to lack of oxygen

Ans. *(d)*

When much of organic matter is present in lake, lots of microbial activity takes place in its decomposition process. So, demand for oxygen increases. This increased O_2 demand depletes the dissolved oxygen in water at faster rates. This adversely affects the living conditions for other organisms like fishes, etc. ultimately causing their death.

37 Increase in concentration of the toxicant at successive tropic levels is known as **[CBSE AIPMT 2015]**

(a) biomagnification
(b) biodeterioration
(c) biotransformation
(d) biogeochemical cycling

Ans. *(a)*

Biomagnification is the sequence of processes in an ecosystem by which higher concentrations of a particular toxicant, such as the pesticide or heavy metal are reached in higher organisms of the food chain, generally through a series of prey-predator relationships.

38 Eutrophication of water bodies leading to killing of fishes is mainly due to non-availability of **[CBSE AIPMT 2015]**

(a) food
(b) light
(c) essential minerals
(d) oxygen

Ans. *(c)*

Eutrophication is a process where water bodies receive excess nutrients that stimulate excessive plant growth. This can lead to overcrowding and competition for sunlight, space and oxygen. This condition creates the lacking of essential nutrients for fishes due to which they die.

39 In an area where DDT had been used extensively, the population of birds declined significantly because **[CBSE AIPMT 2012]**

(a) birds stopped laying eggs
(b) earthworms in the area got eradicated
(c) cobras were feeding exclusively on birds
(d) many of the birds laid eggs, that did not hatch

Ans. *(d)*

DDT, its breakdown products and other chlorinated hydrocarbon pesticides pose serious threat to birds. These persistant poisons enter the food chain and they accumulate in the fatty tissues of organisms at lower trophic level and then tend to concentrate in considerably toxic amount as they move up through the food chain. This is called biomagnification or bioconcentration. It weakens the calcarious egg shell of birds as it becomes very thin.

40 Measuring Biochemical Oxygen Demand (BOD) is a method used for **[CBSE AIPMT 2012]**

(a) estimating the amount of organic matter in sewage water
(b) working out the efficiency of oil driven automobile engines
(c) measuring the activity of *Saccharomyces cerevisae* in producing curd on a commercial scale
(d) working out the efficiency of RBCs about their capacity to carry oxygen

Ans. *(a)*

Decomposition of organic matter by microbial activity depends on oxygen availability in water.

The degree of impurity of water due to the organic matter is measured in terms of BOD (Biochemical Oxygen Demand) or BOD is the oxygen in milligrams required for five days in one litre of water at 20°C for the microorganisms to metabolise organic waste.

41 The domestic sewage in large cities **[CBSE AIPMT 2012]**

(a) has a high BOD as it contains both aerobic and anaerobic bacteria
(b) is processed by aerobic and then anaerobic bacteria in the secondary treatment in Sewage Treatment Plants (STPs)
(c) when treated in STPs does not really require the aeration step as the sewage contains adequate oxygen
(d) has very high amounts of suspended solids and dissolved salts

Ans. *(b)*

Sewage is waste water having food residue, animal and human excreta, detergents, discharges from commercial and industrial establishments.

The domestic sewage is processed first by aerobic and then by anaerobic bacteria in secondary treatment in Sewage Treatment Plant (STPs) and then recycled for further use.

42 DDT residues are rapidly passed through food chain causing biomagnification because DDT is

(a) lipo soluble **[CBSE AIPMT 2009]**
(b) moderately toxic
(c) non-toxic to aquatic animals
(d) water soluble

Ans. *(a)*

Many of the pesticides, such as DDT, aldrin and dieldrin are accumulated in the environment.

They are fat soluble and generally non-biodegradable. They get incorporated into the food chain and ultimately deposited in the fatty tissues of animals and humans.

In the food chain, because of their build up, they get magnified in the higher trophic levels called biological magnification. The phenomenon of biological magnification is also reported for certain other pollutants such as, heavy metals, e.g. mercury, copper and radioactive substances as strontium-90.

43 Biochemical Oxygen Demand (BOD) in a river water **[CBSE AIPMT 2009]**

(a) remains unchanged when algal bloom occurs
(b) has no relationship with concentration of oxygen in the water
(c) gives a measure of *Salmonella* in the water
(d) increases when sewage gets mixed with river water

Ans. *(d)*

When sewage gets mixed with river water, BOD will increase. Biochemical Oxygen Demand (BOD) is the amount of oxygen used for biochemical oxidation of organic mater by microorganisms in a unit volume of water. Polluted water has high BOD.

44 A lake near a village suffered heavy mortality of fishes within a few days. Consider the following reasons for this

I. Lots of urea and phosphate fertilizer were used in the crops in the vicinity.
II. The area was sprayed with DDT by an aircraft.
III. The lake water turned green and stinky.
IV. Phytoplankton populations in the lake declined initially thereby greatly reducing photosynthesis.

Which two of the above were the main causes of fish mortality in the lake? **[CBSE AIPMT 2008]**

(a) II, III (b) III, IV
(c) I, III (d) I, II

Ans. *(d)*

A lake near a village suffered heavy mortality of fishes within a few days, because lots of urea and phosphate fertiliser were used in the crops in the vicinity and the area was sprayed with DDT by an aircraft. Inorganic phosphorus and nitrogen are responsible for the growth of algae.

In polluted water, these increase due to which algae increase greatly at the surface of water forming water bloom. Due to the death of these algae their organic matter gets decomposed due to which oxygen gets depleted and aquatic animals die.

45 A lake near a village suffered heavy mortality of fishes within a few days. Consider the following reasons for this

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Which two of the above were the main causes of fish mortality in the lake? **[CBSE AIPMT 2008]**

(a) II and III
(b) III and IV
(c) I and III
(d) I and II

Ans. *(d)*

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Inorganic phosphorus and nitrogen are responsible for the growth of algae. In polluted water these increase due to which algae increase greatly at the surface of water forming water bloom. Due to death of these algae their organic matter gets decomposed due to which oxygen gets depleted and aquatic animal dies.

46 Which one of the following is not a bioindicator of water pollution? **[CBSE AIPMT 2007]**

(a) Sludge worms
(b) Blood worms
(c) Stone flies
(d) Sewage fungus

Ans. *(c)*

Among the following stone flies are not bioindicators of pollution. Stone flies (e.g *Perla* sp.) belong to order–Plecoptera of class–Insecta, which has the terrestrial mandibulates.

47 In which one of the following, the BOD (Biochemical Oxygen Demand) of sewage (S), distillery effluent (DE), paper mill effluent (PE) and sugar mill effluent (SE) have been arranged in ascending order? **[CBSE AIPMT 2007]**

(a) SE < S < PE < DE
(b) SE < PE < S < DE
(c) PE < S < SE < DE
(d) S < DE < PE < SE

Ans. *(d)*

The ascending order of BOD is Sewage (S) < Distillary Effluent (DE) < Paper Mill Effluent (PE) < Sugar Mill Effluent (SE).

48 Photochemical smog pollution does not contain **[CBSE AIPMT 2006]**

(a) ozone
(b) nitrogen dioxide
(c) carbon dioxide
(d) PAN (Peroxy Acyl Nitrate)

Ans. *(c)*

Photochemical smog is highly oxidising pollutant comprising largely of ozone (O_3), oxides of nitrogen (NO_x), hydrogen peroxide (H_2O_2), organic peroxides, Peroxy Acetyl Nitrate (PAN) and Peroxy Benzyl Nitrate (PBN) but not carbon dioxide (CO_2).

49 Limit of BOD prescribed by Central Pollution Control Board for the discharge of industrial and municipal waste water into natural surface water, is **[CBSE AIPMT 2006]**

(a) < 3.0 ppm (b) < 10 ppm
(c) < 100 ppm (d) < 30 ppm

Ans. *(b)*

The Central Pollution Control Board prescribed the BOD limit for the discharge of industrial and municipal waste water as < 10 ppm.

50 Which of the following is not used for disinfection of drinking water? **[CBSE AIPMT 2005]**

(a) Phenyl (b) Chloramine
(c) Chlorine (d) Ozone

Ans. *(a)*

Phenyl is not used for disinfection of drinking water as it is a poisonous substance. Water is chlorinated for getting disinfected.

51 Fluoride pollution mainly affects **[CBSE AIPMT 2004]**

(a) teeth (b) kidney
(c) brain (d) heart

Ans. *(a)*

Prolonged intake of fluoride polluted water causes stiffning of bone and joints particularly spinal cord. Due to the affinity with calcium, fluoride stores in bones which causes mottling of teeth, bone pains and outward bending of legs from the knees. This is known as knock knee syndrome.

52 Which of the following is absent in polluted water ? **[CBSE AIPMT 2002]**

(a) *Hydrilla* (b) Water hyacinth
(c) Larva of stone fly (d) Blue-green algae

Ans. *(c)*

Stone flies are exopterygote insects with aquatic nymphs; long antennae, biting mouth parts and weak flight. Adults have the tendency to feed on lichens and unicellular algae. These are good pollution indicators.

53 What is BOD? **[CBSE AIPMT 2001]**

(a) The amount of O_2 utilised by organisms in water
(b) The amount of O_2 utilised by microorganisms for decomposition
(c) The total amount of O_2 present in water
(d) All of the above

Ans. *(b)*

Biological Oxygen Demand (BOD) is the amount of O_2 required for biological oxidation of organic matter present in polluted water by microorganisms in any unit volume of water.

54 DDT is **[CBSE AIPMT 1999]**

(a) a non-degradable pollutant
(b) an antibiotic
(c) a biodegradable pollutant
(d) not a pollutant

Ans. *(a)*

DDT is non-degradable pollulant which accumulates in the tissues. Its concentration is estimated to be 13-31 ppm in body fat of Indians, which has been accumulated in them through biomagnification of DDT through food chain.

55 A sewage treatment process in which a portion of the decomposer bacteria present in the waste is recycled into the beginning of the process, is called **[CBSE AIPMT 1998]**

(a) cyclic treatment
(b) primary treatment
(c) activated sludge treatment
(d) tertiary treatment

Ans. *(c)*

The word activated sludge system is derived from the practice of adding aerobic heterotrophic bacteria to the incoming sewage, from a previous batch. This sludge inoculum contains large numbers of metabolising bacteria, together with yeasts, molds and Protozoa. An especially important ingredient of the sludge are species of *Zoogloea* bacteria, which form flocculant masses (floc) in the aeration tanks.

The activity of these aerobic micro-organisms oxidises much of the effluent's organic matter into carbon dioxide and water. When the aeration phase is completed, the floc (secondary sludge) is allowed to settle to the bottom, just as the primary sludge settles in primary treatment.

56 Which one of the following organism is used as indicator of water quality? **[CBSE AIPMT 1998]**

(a) *Beggiatoa*
(b) *Chlorella*
(c) *Azospirillum*
(d) *Escherichia*

Ans. *(d)*

A variety of the enteric group of bacteria (facultative, aerobic) reside in the human large intestine (e.g. *E. coli*). Therefore, their presence in water supply indicates that water supply has been contaminated by sewage.

57 Phosphate pollution is mainly caused by **[CBSE AIPMT 1997]**

(a) phosphate rock only
(b) agricultural fertilisers only
(c) sewage and phosphate rocks
(d) sewage and agricultural fertilisers

Ans. *(d)*

Man has been releasing large quantities of phosphorus into the biosphere in the form of agricultural fertilisers (superphosphates) and synthetic detergents.

58 Sewage drained into water bodies kill fishes because **[CBSE AIPMT 1996]**

(a) excessive carbon dioxide is added to water
(b) it gives off a bad smell
(c) it removes the food eaten by fish
(d) it increases competition with fishes for dissolved oxygen

Ans. *(d)*

Sewage provides food for decomposers. Phosphorus and nitrogen compounds present in sewage result into excessive growth of algae on water surface, which is also called algal bloom, this all results in decrease in oxygen, which is dangerous for aquatic life.

59 In Minamata Bay of Japan, the animals which remained free from Minamata disease, are **[CBSE AIPMT 1995]**

(a) pigs (b) rabbits
(c) dogs d) cats

Ans. *(b)*

Rabbits remained free from Minamata disease as they are herbivores and this disease is caused due to mercury pollution in water.

60 When huge amount of sewage is dumped into a river, its BOD will **[CBSE AIPMT 1995]**

(a) increase
(b) decrease
(c) sharply decrease
(d) remain unchanged

Ans. *(d)*

Taj Mahal of Agra is affected by gases discharged from oil refinery in Mathura which consists of SO_2, H_2S and nitrogen oxide. SO_2 corrodes metals, equipment and damages buildings marble.

61 Highest DDT deposition shall occur in **[CBSE AIPMT 1994]**

(a) phytoplankton
(b) sea gull/birds
(c) crab
(d) eel

Ans. *(b)*

DDT concentration increases in amount with rise in trophic level because they accumulate in fat, this is biomagnification. In the given options sea gull/birds are the top consumers so DDT concentration will be highest in them.

62 Disease caused by eating fish found in water contaminated with industrial waste having mercury is **[CBSE AIPMT 1994]**

(a) Minamata disease
(b) Bright's disease
(c) Hashimoto's disease
(d) Osteosclerosis

Ans. *(a)*

Consumption of fishes poisoned with mercury causes deformity called Minamata disease, which is characterised by diarrhoea, impairment of senses, haemolysis, meningitis and death.

63 Domestic waste constitutes **[CBSE AIPMT 1991]**

(a) non-biodegradable pollution
(b) biodegradable pollution
(c) effluents
(d) air pollution

Ans. *(b)*

Domestic waste constitutes biodegradable pollutants, such pollutants are naturally present organic compounds which can be broken down by microorganisms and can be recycled, e.g. sewage.

64 The maximum biomagnification would be in which of the following in case of aquatic ecosystem? **[CBSE AIPMT 1999]**

(a) Fishes (b) Phytoplanktons
(c) Birds (d) Zooplanktons

Ans. *(a)*

Non-degradable chemicals enter the food chain and their concentration goes up as they move up in the food chain.

This phenomenon is called **biomagnification**. Naturally in a food chain, Phytoplankton → Zooplankton → Fishes → Birds, it would be highest in fishes.

65 Animals/organisms floating on the surface of water are **[CBSE AIPMT 1988]**

(a) plankton (b) pelagic
(c) benthos (d) neritic

Ans. *(a)*

Organisms floating on the surface of water are planktons, these are of two types

(a) **Zooplankton** If the floating organisms are animals.
(b) **Phytoplankton** If the floating organism are plants.

TOPIC 3
Soil and Radioactive Pollution

66 Which of the following is an innovative remedy for plastic waste? **[NEET (Odisha) 2019]**

(a) Burning in the absence of oxygen
(b) Burrying 500 m deep below soil surface
(c) Polyblend
(d) Electrostatic precipitator

Ans. *(c)*

Polyblend is an innovative remedy for plastic waste. Polyblend is a fine powder of recycled modified plastic which when mixed with bitumen, can be used to lay roads.

67 Which of these following methods is the most suitable for disposal of nuclear waste? **[NEET (National) 2019]**

(a) Bury the waste under Antarctic ice-cover
(b) Dump the waste within rocks under deep ocean
(c) Bury the waste within rocks deep below the Earth's surface
(d) Shoot the waste into space

Ans. *(c)*

Nuclear waste is usually disposed by burying it within rocks deep below the earth's surface. Nuclear waste disposal is extremely hazardous. Before burrying the waste, it is sealed in large containers so as to reduce its radiation effects.

68 Relative Biological Effectiveness (RBE) is usually referred to damages caused by **[CBSE AIPMT 2000]**

(a) low temperature
(b) high temperature
(c) encephalitis
(d) radiation

Ans. *(d)*

RBE (Relative Biological Effectiveness) is a comparison of the dose of the radiation being studied with the dose of standard radiation producing the same effect.

69 If by radiation all nitrogenase enzymes are inactivated, then there will be no **[CBSE AIPMT 2004]**

(a) fixation of nitrogen in legumes
(b) fixation of atmospheric nitrogen
(c) conversion from nitrate to nitrite in legumes
(d) conversion from ammonium to nitrate in soil

Ans. *(a)*

The enzyme nitrogenase is required for the process of biological nitrogen fixation only. Fixation of atmospheric nitrogen occur through other route also. Neither nitrification (conversion of ammonium to nitrate) nor conversion of nitrate to nitrite require nitrogenase.

70 Relative Biological Effectiveness (RBE) usually refers to the damages caused by **[CBSE AIPMT 2000]**

(a) low temperature
(b) high temperature
(c) radiation
(d) pollution

Ans. *(c)*

RBE (Relative Biological Effectiveness) is a comparison of the dose of radiation being studied with the dose of standard radiation producing the same effect.

71 The supersonic jets cause pollution by the thinning of **[CBSE AIPMT 1998]**

(a) CO_2 layer
(b) SO_2 layer
(c) O_2 layer
(d) O_3 layer

Ans. *(d)*

Ozone layer is found in the stratosphere. It protects us from the harmful UV radiations coming from the sun. The supersonic aircrafts flying at stratospheric heights cause major disturbances in ozone level due to release of CFCs which react with O_3 present there, thus cause thinning of O_3 layer.

72 The worst environmental hazards were created by accidents in nuclear power plant and MIC gas tragedy respectively in **[CBSE AIPMT 1996]**

(a) Russia in 1990 and Bhopal in 1986
(b) Ukrain in 1988 and USA in 1984
(c) Bhopal in 1984 and Russia in 1990
(d) Ukrain in 1986 and Bhopal in 1984

Ans. *(d)*

Worst environmental hazards were in Ukrain in 1986 and MIC gas tragedy in Bhopal in 1984.

73 Most hazardous metal pollutant of automobile exhausts is **[CBSE AIPMT 1992]**

(a) mercury (b) cadmium
(c) lead (d) copper

Ans. *(c)*

Lead particles are found in the smoke from automobiles which cause nervous disorder in man.

74 Pedology is science of **[CBSE AIPMT 1991]**

(a) earth (b) soil
(c) diseases (d) pollution

Ans. *(b)*

Pedology is the study of soil and soil properties.

TOPIC 4
Greenhouse Effect and Global Warming

75 Which of the following pairs of gases is mainly responsible for greenhouse effect? **[NEET (National) 2019]**

(a) Oxygen and Nitrogen
(b) Nitrogen and Sulphur dioxide
(c) Carbon dioxide and Methane
(d) Ozone and Ammonia

Ans. *(c)*

Greenhouse effect is mainly contributed by carbon dioxide (60%) and methane (20%) along with nitrous oxide, nitrogen dioxide and chlorofluorocarbons. Greenhouse effect results in the rise in temperature of earth because greenhouse gases has the ability to trap the heat of solar radiations.

76 Global warming can be controlled by **[NEET 2013]**

(a) Reducing deforestation, cutting down use of fossil fuel
(b) Reducing reforestation, increasing the use of fossil fuel
(c) Increasing deforestation, slowing down the growth of human population
(d) Increasing deforestation, reducing efficiency of energy usage

Ans. *(a)*

Global warming can be controlled by reducing deforestation, cutting down use of fossil fuel, which results into reduction in the concentration of one of the greenhouse gas, i.e. CO_2 in the atmosphere. The other ways of reducing global warming are slowing down the growth of human population, improving efficiency of energy usage and encouraging eco-friendly sustainable development.

77 Which one of the following pairs of gases are the major cause of 'Greenhouse effect?

(a) CO_2 and CO **[CBSE AIPMT 2011]**
(b) CFCs and SO_2
(c) CO_2 and N_2O
(d) CO_2 and O_3

Ans. *(c)*

The phenomenon of keeping the earth's surface warm is due to the presence of certain gases in the atmosphere that are called greenhouse gases.

The name is based after a similar warmer interior in a glass-enclosed greenhouse where glass panels, CO_2 and water vapour allow the solar radiations to enter but prevent the escape of long wave heat radiations. CO_2 and N_2O are the major cause of 'greenhouse effect'. CO_2 contributes 60% of total global warming. N_2O contributes 6% to greenhouse effect.

78 The two gases making highest relative contribution to the greenhouse gases are **[CBSE AIPMT 2010]**

(a) CO_2 and CH_4 (b) CH_4 and NO_2
(c) CFCs and N_2O (d) CO_2 and N_2O

Ans. *(a)*

The greenhouse effect is a naturally occurring phenomenon that is responsible for warming of earth's surface and atmosphere. CO_2 (60%) and CH_4 (20%) are commonly known as greenhouse gases because they are responsible for the greenhouse effect, that ultimately leads to global warming.

79 Which one of the following is the correct percentage of the two (out of the total of four) greenhouse gases that contribute to the total global warming? **[CBSE AIPMT 2008]**

(a) CFCs 14%, CH_4 20%
(b) CO_2 40%, CFCs 30%
(c) N_2O 6%, CO_2 86%
(d) CH_4 20%, N_2O 18%

Ans. *(a)*

The percentage of various greenhouse gases that contribute to total global warming are CO_2 (warming effect 60%), CH_4 (20%), CFCs (14%) and nitrous oxide N_2O(6%).

80 Which one of the following pair is mismatched? **[CBSE AIPMT 2005]**

(a) Biomass burning — Release of CO_2
(b) Fossil fuel burning — Release of CO_2
(c) Nuclear power — Radioactive wastes
(d) Solar energy — Greenhouse effect

Ans. *(d)*

From the following pair (d) is mismatched because solar energy does not cause greenhouse effect.

81 Greenhouse effect refers to **[CBSE AIPMT 1999]**

(a) production of cereals
(b) cooling of earth
(c) trapping of UV rays
(d) warming of earth

Ans. *(d)*

Greenhouse effects refer to warming of earth due to increase in CO_2, CFCs, SO_2 and other substances that disturbe the balance between the amount of energy received and that reflected back into the space.

82 Warm ocean surge of the Peru current recurring every 5 to 8 year or so in the East Pacific of South America is widely known as **[CBSE AIPMT 1998]**

(a) Magnox (b) Gull stream
(c) El Nino (d) Aye Aye

Ans. *(c)*

EL Nino is a warm ocean surge of Peru current (flowing North from Antarctica along the West coast of South America to South Equador, the West). It recurs every 5-8 year or so, in the East Pacific of South America.

83 Which important greenhouse gas, other than methane, is being produced from the agricultural fields? **[CBSE AIPMT 1998]**

(a) Arsine (b) Sulphur dioxide
(c) Ammonia (d) Nitrous oxide

Ans. *(d)*

In addition to CO_2, some other gases also contribute to greenhouse effect. These include ozone, CFCs, nitrous oxide N_2O and even methane (CH_4).

Nitrous oxide is produced by denitrifying bacteria acting on artificial fertilisers applied to poorly aerated soils.

84 If there was no CO_2 in the earth's atmosphere the temperature of earth's surface would be **[CBSE AIPMT 1998]**

(a) same as present
(b) less than the present
(c) higher than the present
(d) dependent on the amount of oxygen in the atmosphere

Ans. *(b)*

CO_2 layer around earth surface acts as insulator and does not allow heat of the earth to escape into space thus keeping the earth warm. It is an important constituent of green house gases present in earth's atmosphere. The percentage of CO_2 in causing global warming is 60%.

85 The major contributor of green-house gases to the atmosphere is **[CBSE AIPMT 1996]**

(a) Russia
(b) USA
(c) Germany
(d) Brazil

Ans. *(b)*

The major contributor of greenhouse gases to the atmosphere is USA.

86 Green-house effect is warming due to **[CBSE AIPMT 1991]**

(a) infra-red rays reaching earth
(b) moisture layer in atmosphere

(c) increase in temperature due to increase in carbon dioxide concentration of atmosphere
(d) ozone layer of atmosphere

Ans. *(c)*

Increase in CO_2 concentration forms a cover around the earth, this cover inhibits the earth's radiation to go out of earth's environment thus, increases global temperature.

This increased temperature results in melting of snow from hill tops and poles.

TOPIC 5
Ozone and Its Depletion

87 Dobson units are used to measure thickness of **[NEET 2021]**

(a) CFCs (b) stratosphere
(c) ozone (d) troposphere

Ans. *(c)*

Ozone found in stratosphere is known as good ozone or ozone layer. It acts as a shield absorbing ultraviolet radiation from the sun. The thickness of ozone in a column of air from the ground to the top of the atmosphere is measured in terms of Dobson units.

88 Montreal protocol was signed in 1987 for control of **[NEET (Sep.) 2020]**

(a) emission of ozone depleting substances
(b) release of green house gases
(c) disposal of *e*-wastes
(d) transport of genetically modified organisms from one country to another

Ans. *(a)*

Montreal protocol was signed in 1987 for control emission of ozone depleting substances. It is a global agreement to protect the stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances (ODS).

89 Which of the following statements about ozone is correct? **[NEET (Odisha) 2019]**

(a) Tropospheric ozone protects us from UV- radiations
(b) Stratospheric ozone is 'bad'
(c) Tropospheric ozone is 'good'
(d) Stratospheric ozone protects us from UV- radiations

Ans. *(d)*

Statement (d) is correct. Stratospheric ozone protects us from UV radiations of the sun. Correct information about incorrect statements is as follows.
Good ozone is found in the upper part of the atmosphere, i.e. stratosphere. Bad ozone is formed in the lower atmosphere (troposphere) that harms plants and animals.

90 World Ozone Day is celebrated on **[NEET 2018]**

(a) 16th September (b) 21st April
(c) 5th June (d) 22nd April

Ans. *(a)*

'World Ozone Day' is celebrated on 16th September to control O_3 depletion. Ozone layer is a fragile shield of gas that protects earth from harmful UV-rays.

On 21st April the Civil Service Day and National Yellow Bat Day is celebrated. **5th June** of every year is celebrated as World Environment Day. Earth Day is an annual event, celebrated on **22nd April** of every year.

91 In stratosphere, which one of the following elements acts as a catalyst in degradation of ozone and release of molecular oxygen? **[NEET 2018]**

(a) Fe (b) Cl
(c) Carbon (d) Oxygen

Ans. *(b)*

In stratosphere, Cl acts as a catalyst in the degradation of ozone and release of molecular oxygen. It is released by action of UV rays on chlorofluorocarbon. Chlorine reacts with ozone in a series of chain reaction, converting it into oxygen. One active chlorine can destroy 5000 molecules of ozone in one month.

$$CFCl_3 \xrightarrow{\text{UV-C}} CFCl_2 + Cl$$

$$CFCl_2 \xrightarrow{\text{UV-C}} CFCl + Cl$$

$$Cl + O_3 \longrightarrow ClO + O_2$$

$$ClO + O_3 \longrightarrow Cl + 2O_2$$

Iron (Fe), carbon (C) and oxygen (O) are not Ozone Depleting Substances (ODS).

92 Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancers **[NEET 2016, Phase I]**

(a) ozone (b) ammonia
(c) methane (d) nitrous oxide

Ans. *(a)*

Ozone is found in the upper part of the atmosphere called stratosphere and it acts as a shield absorbing ultraviolet radiation from sun. So its depletion can lead to incidence of skin cancers caused by harmful solar radiations which will reach earth in the absence of O_3 layer.

93 The zone of atmosphere in which the ozone layer is present is called **[CBSE AIPMT 2014]**

(a) ionosphere (b) mesosphere
(c) stratosphere (d) troposphere

Ans. *(c)*

The ozone layer is mainly found in the lower portion of stratosphere, i.e. approximately 20-30 km above the earth, though its thickness varies seasonally and geographically, ozone layer acts as a shield absorbing UV rays from the sun.

94 Which one of the following is a wrong statement? **[CBSE AIPMT 2012]**

(a) Most of the forests have been lost in tropical areas
(b) Ozone in upper part of atmosphere is harmful to animals
(c) Greenhouse effect is a natural phenomenon
(d) Eutrophication is a natural phenomenon in freshwater bodies

Ans. *(b)*

Ozone (O_3) is an isotope of oxygen which exists in so called ozone layer at a height of about 15-60 km in the middle and upper stratosphere and lower mesosphere. This ozone layer absorbs UV-rays of longer wavelength and protects life on Earth from damaging effects of these radiations.

Ozone in the lower atmosphere (troposphere) is regarded as a pollutant.

95 Montreal protocol aims at **[CBSE AIPMT 2009]**

(a) reduction of ozone depleting substances
(b) biodiversity conservation
(c) control of water pollution
(d) control of CO_2 emission

Ans. *(a)*

In August 1989, 44 countries and EEC ratified the Montreal Protocol, which provides a mechanism to review the efficiency of control measures. They also agreed to phase out the halogens and to control and reduce other Ozone

Depleting Substances (ODSs). In a policy statement called Helsinki Declaration, the attending nations agreed to phase out the production and consumption of controlled CFCs as soon as possible but not later than the year 2007.

96 Global agreement in specific control strategies to reduce the release of ozone depleting substances, was adopted by **[CBSE AIPMT 2009]**

(a) Rio de Janerio Conference
(b) Montreal Protocol
(c) Kyoto Protocol
(d) Vienna Convention

Ans. ***(b)***

The Montreal Protocol is a landmark international agreement designed to protect the stratospheric ozone layer. by reducing the release of ozone depleting substances. The treaty was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—chlorofluorocarbons (CFCs), halogens, carbon tetrachloride and methyl chloroform—are to be phased out by 2000 (2005 for methyl chloroform).

97 Montreal protocol, which calls for appropriate action to protect the ozone layer from human activities was passed in the year **[CBSE AIPMT 2006]**

(a) 1986
(b) 1987
(c) 1988
(d) 1985

Ans. ***(b)***

In 1987, twenty seven industrialised countries signed the Montreal protocol for reduction in production and release of CFCs chlorofluorocarbons depleting ozone layer, into the atmosphere. It was followed by increasingly stringent amendments in London in 1990 and in Copenhagen in 1992.

98 Identify the correctly matched pair. **[CBSE AIPMT 2004]**

(a) Montreal protocol — Global warming
(b) Kyoto protocol — Climate change
(c) Ramsar convention — Ground water pollution
(d) Basal convention — Biodiversity conservation

Ans. ***(b)***

Kyoto protocol deals with climate changes while Montreal protocol deals with ozone depletion.

99 In coming years, skin related disorders will be more common due to **[CBSE AIPMT 1997]**

(a) air pollution
(b) use of detergents
(c) water pollution
(d) depletion of ozone layer

Ans. ***(d)***

Ozone layer is found in the stratosphere of atmosphere. It absorbs harmful ultraviolet rays coming from the sun.

In coming years, when the ozone layer may become thinner, ultra-violet radiations may reach earth directly to cause cancer, especially skin cancer.

100 Formation of ozone hole is maximum over **[CBSE AIPMT 1997]**

(a) India
(b) Antarctica
(c) Europe
(d) Africa

Ans. ***(b)***

An ozone hole (thinning) has been formed over Antarctica as a result of damage to ozone.

Most ozone is formed in the stratosphere over the equator and spread by winds around the globe.

Icy particles in polar stratospheric clouds catalyse the release of chlorine (from CFC) which destroys ozone. The thinning in ozone is maximum because in winter there is exceptionally cold.

101 Ultraviolet radiations from sunlight cause a reaction which produces **[CBSE AIPMT 1993]**

(a) O_3 (b) SO_2 (c) CO (d) CH_4

Ans. ***(a)***

Ozone is produced by action of ultraviolet and other high energy radiations on oxygen resulting in splitting and interaction of oxygen molecules $3O_2 \rightarrow 2O_3$.

This ozone forms a layer that is also called protective umbrella at 23 km from earth surface.

TOPIC 6
Case Studies Related to Pollution

102 Polyblend, a fine powder of recycled modified plastic, has proved to be a good material for **[NEET (National) 2019]**

(a) use as a fertiliser
(b) construction of roads
(c) making tubes and pipes
(d) making plastic sacks

Ans. ***(b)***

Polyblend has proved to be a good material for the constructions of roads. It is a fine powder of recycled plastic and it is mixed with bitumen to lay roads. The first polyblend road was laid in Bangaluru by the effort of Ahmed Khan.

103 Chipko movement was launched for the protection of **[CBSE AIPMT 2009]**

(a) grasslands (b) forests
(c) livestock (d) wet lands

Ans. ***(b)***

In 1973, the Chipko Movement (Chipko means to hug or stick to the trunk of the tree) was launched by **Chandi Prashad Bhatt and Sunder Lal Bahuguna** against large scale falling of trees by timber contractors in the Uttarakhand hills. The starting point was **Chamboli** district of **Garhwal** region in Uttarakhand.