JEE Mains 2019 Chapter wise Question Bank

Environmental Chemistry - Questions

Q1

A water sample has ppm level concentration of the following metals: Fe = 0.2; Mn = 5.0; Cu = 3.0; Zn = 5.0. The metal that makes the water sample unsuitable for drinking is:

(1) Cu (2) Mn
(3) Fe (4) Zn

9 Jan Morning

Q2

Which of the following conditions in drinking water causes methemoglobinemia?

(1) > 50 ppm of lead
(2) > 50 ppm of chloride
(3) > 50 ppm of nitrate
(4) > 100 ppm of sulphate

9 Jan Evening

Q3

The pH of rain water, is approximately:

(1) 5.6 (2) 7.5
(3) 7.0 (4) 6.5

9 Jan Evening

Q4

Water filled in two glasses A and B have BOD values of 10 and 20, respectively. The correct statement regarding them, is:

(1) B is more polluted than A.
(2) A is suitable for drinking, whereas B is not.
(3) Both A and B are suitable for drinking.
(4) A is more polluted than B.

10 Jan Morning

Q5

The reaction that is NOT involved in the ozone layer depletion mechanism in the stratosphere is:

(1) $CF_2Cl_2(g) \xrightarrow{uv} \dot{C}l(g) + \dot{C}F_2Cl(g)$

(2) $\dot{C}lO(g) + O(g) \longrightarrow \dot{C}l(g) + O_2(g)$

(3) $CH_4 + 2O_3 \longrightarrow 3CH_2 = O + 3H_2O$

(4) $HOCl(g) \xrightarrow{hv} \dot{O}H(g) + \dot{C}l(g)$

10 Jan Evening

Q6

The concentration of dissolved oxygen (DO) in cold water can go upto :

(1) 14 ppm (2) 8 ppm
(3) 10 ppm (4) 16 ppm

11 Jan Morning

Q7

Peroxyacetyl nitrate (PAN), an eye irritant, is produced by :

(1) Classical smog (2) Acid rain
(3) Organic waste (4) Photochemical smog

11 Jan Morning

Q8

Taj Mahal is being slowly disfigured and discoloured. This is primarily due to :

(1) Global warming (2) Acid rain
(3) Water pollution (4) Soil pollution

11 Jan Evening

Q9

The higher concentration of which gas in air can cause stiffness of flower buds?

(1) NO_2 (2) CO_2
(3) SO_2 (4) CO

11 Jan Evening

Q10

The molecule that has minimum/no role in the formation of photochemical smog, is:

(1) N_2 (2) $CH_2=O$

(3) O_3 (4) NO

12 Jan Morning

Q11

Water samples with BOD values of 4 ppm and 18 ppm, respectively, are :

(1) Clean and Clean

(2) Highly polluted and Clean

(3) Clean and Highly polluted

(4) Highly polluted and Highly polluted

12 Jan Morning

Q11

The compound that is NOT a common component of photochemical smog is :

(1) O_3 (2) $H_3C-\underset{\underset{O}{\|}}{C}-OONO_2$

(3) $CH_2=CHCHO$ (4) CF_2Cl_2

12 Jan Evening

Q12

The upper stratosphere consisting of the ozone layer protects us from the sun's radiation that falls in the wavelength region

(1) 200 – 315 nm (2) 400 – 550 nm

(3) 0.8 – 1.5 nm (4) 600 – 750 nm

12 Jan Evening

Q13

Which is wrong with respect to our responsibility as a human being to protect our environment ?

(1) Restricting the use of vehicles

(2) Avoiding the use of floodlighted facilities

(3) Setting up compost tin in gardens.

(4) Using plastic bags.

8 April Morning

Q14

Assertion : Ozone is destroyed by CFCs in the upper stratosphere.

Reason : Ozone holes increase the amount of UV radiation reaching the earth.

(1) Assertion and reason are incorrect.

(2) Assertion and reason are both correct, and the reason is the correct explanation for the assertion.

(3) Assertion and reason are correct, but the reason is not the explanation for the assertion.

(4) Assertion is false, but the reason is correct.

8 April Morning

Q14

The maximum prescribed concentration of copper in drinking water is:

(1) 5 ppm (2) 0.05 ppm

(3) 0.5 ppm (4) 3 ppm

8 April Evening

Q15

Excessive release of CO_2 into the atmosphere results in:

(1) global warming (2) polar vortex

(3) formation of smog (4) depletion of ozone

9 April Morning

Q16

The layer of atmosphere between 10 km to 50 km above the sea level is called as:

(1) troposphere (2) thermosphere

(3) stratosphere (4) mesosphere

9 April Evening

Q17

The regions of the atmosphere, where clouds are formed and where we live, respectively, are :

(1) Troposphere and Stratosphere

(2) Stratosphere and Troposphere

(3) Troposphere and Troposphere

(4) Stratosphere and Stratosphere

10 April Morning

Q18

Air pollution that occurs in sunlight is :

(1) reducing smog (2) acid rain

(3) oxidizing smog (4) fog

10 April Evening

Q19

The correct set of species responsible for the photochemical smog is :

(1) N_2, NO_2 and hydrocarbons

(2) CO_2, NO_2, SO_2 and hydrocarbons

(3) NO, NO_2, O_3 and hydrocarbons

(4) N_2, O_2, O_3 and hydrocarbons

12 April Morning

Q20

The primary pollutant that leads to photochemical smog is:

(1) acrolein (2) nitrogen oxides

(3) ozone (4) sulphur dioxide

12 April Evening

JEE Mains 2019 Chapter wise Question Bank

Environmental Chemistry - Answers

Q1

(2) The water sample containing Mn = 5 ppm is unsuitable for drinking as the prescribed level for Mn in drinking water is 0.5 ppm.

9 Jan Morning

Q2

(3) Methemoglobinemia is caused by drinking water which is contaminated with nitrate.

9 Jan Evening

Q3

(1) pH of rain water is around 5.6.

9 Jan Evening

Q4

(1) BOD indicates the amount of putrescible organic matter present in water. Therefore, a low BOD is an indicator of good quality water while a high BOD indicates polluted water.

10 Jan Morning

Q5

(3) The reaction, $CH_4 + 2O_3 \rightarrow 3CH_2 = O + 3H_2O$, is not involved in the ozone layer depletion mechanism.

10 Jan Evening

Q6

(3) Dissolved oxygen (DO) in cold water can reach a concentration upto 10 ppm.

11 Jan Morning

Q7

(4) P.A.N is produced by photochemical smog.

11 Jan Morning

Q8

(2) Acid rain.

11 Jan Evening

Q9

(3) High concentration of SO_2 leads to stiffness of flower buds.

11 Jan Evening

Q10

(1) NO, O_3 and HCHO are responsible for the formation of photochemical smog while N_2 has no role in photochemical smog.

12 Jan Morning

Q11

(3) Clean water would have BOD value < 5 ppm whereas highly polluted water could have BOD value ≥ 17 ppm.

12 Jan Morning

Q11

(4) Acrolein, PAN (produced by the oxidation of unburnt hydrocarbons present in the polluted air) and ozone are the main components of photochemical smog. While CF_2Cl_2 is not a common component of photochemical smog.

12 Jan Evening

Q12

(1) Wavelength range lies in 200 nm – 315 nm (U.V light)

12 Jan Evening

Q13

(4) Use of plastic bags is hazardous to our environment

8 April Morning

Q14

(3) CFC's are responsible for depletion of ozone layer

$$Cl + O_3 \xrightarrow{h\nu} \dot{C}l(g) + F_2\dot{C}Cl(g)$$

$$\dot{C}l + O_3 \longrightarrow Cl\dot{O}(g) + O_2(g)$$

$$Cl\dot{O} + O \longrightarrow \dot{C}l + O_2(g)$$

Due to depletion of ozone layer more UV radiation filters into troposphere.

8 April Morning

Q14

(4) Maximum prescribed concentration of Cu in drinking water is 3 ppm.

8 April Evening

Q15

(1) Global warming is caused by the emission of green house gases. 72% of the totally emitted green house gases is CO_2. Therefore, excessive release of CO_2 is the main cause of global warming.

9 April Morning

Q16

(3) Stratosphere lies between 10-50 km above sea level.

9 April Evening

Q17

(3) The lowest region of atmosphere in which human beings live and clouds form is known as troposphere. It extends up to a height of 10 km from sea level.

10 April Morning

Q18

(3) Air pollution caused by sunlight is photochemical smog also knows as oxidising smog.

10 April Evening

Q19

(3) Photochemical smog contains oxides of nitrogen, ozone and hydrocarbons. It is also called oxidation smog.

12 April Morning

Q20

(2) In photochemical smog, NO_2 and hydrocarbons are primary pollutants whereas ozone and acrolein are secondary pollutants.

12 April Evening