

**Class: 11**  
**Subject: Chemistry**  
**Topic: Environmental chemistry**  
**No. of Questions: 20**  
**Duration: 60 Min**  
**Maximum Marks: 60**

1. Atmosphere of big/metropolitan cities is polluted most by

- A. Automobile exhausts
- B. Pesticide residue
- C. Household waste
- D. Radioactive fall out.

Sol: A

Atmosphere of big cities is polluted most by automobile exhaust which is a symbol of urbanisation.

2. Increased asthmatic attacks in certain seasons are related to

- A. Eating of seasonal vegetables
- B. Wet and dry environment
- C. Inhalation of seasonal pollen
- D. Low and high temperatures.

Sol: C

Inhalation of seasonal pollen grain increase the asthmatic attack.

3. Match List I with List II and select the correct answer using the codes given below the lists:

List I (Pollutant)		List II (Source)
(A) Microorganisms	1	Chemical fertilizers
(B) Plant nutrients	2	Abandoned coal mines
(C) Sediments	3	Domestic sewage
(D) Mineral acids strip	4	Erosion of soil by mining
	5	Detergents

A. 

A	B	C	D
3	1	4	2

B. 

A	B	C	D
2	5	3	1

C. 

A	B	C	D
1	3	2	4

D. 

A	B	C	D
4	2	1	5

Sol: A

Chemical fertilizers are source of plant nutrients, coal mines are source of mineral acids, domestic sewage is a rich source of microorganisms and erosion of soil by strip mining yields sediments.

4. Negative soil pollution is

- A. Reduction in soil productivity due to erosion and over use.
- B. Reduction in soil productivity due to addition of pesticides and industrial wastes.
- C. Converting fertile land into barren land by dumping ash, sludge and garbage.
- D. None of the above.

Sol: A

Negative soil pollution is reduction in soil productivity due to erosion and over use.

5. **Assertion (A)** Acid rain has pH below 5.6.

**Reason (R)** Acid-rain is due to depletion of ozone layer.

- A. Both (A) and (R) are true and (R) is the correct explanation of (A).
- B. Both (A) and (R) are true but (R) is not the correct explanation of (A).
- C. (A) is true but (R) is false.
- D. (A) is false but (R) is true.

Sol: C

6. Which of the following is a biodegradable pollutant?

- A. Plastic
- B. Sewage
- C. Asbestos
- D. Mercury

Sol: B

Sewage is decomposed by microorganisms.

7. Ozone hole refers to

- A. Hole in ozone layer
- B. Reduction in thickness of ozone layer in troposphere
- C. Reduction in thickness of ozone layer in stratosphere
- D. Increase in concentration of ozone.

Sol: C

Ozone hole is reduction in thickness of ozone layer in stratosphere.

8. The brown, hazy fumes of photochemical smog are due to

- A. Nitrogen dioxide
- B. PAN formation
- C. Aldehydes
- D. SO<sub>2</sub>.

Sol: A

Brown hazy fumes of photochemical smog are due to nitrogen dioxide.

9. Pick up the correct statement.

- A. CO which is major pollutant resulting from the combustion of fuels in automobiles plays a major role in photochemical smog.
- B. Classical smog has an oxidizing character while the photochemical smog is reducing in character
- C. Photochemical smog occurs in day time whereas the classical smog occurs in early morning hours.
- D. During formation of smog the level of ozone in the atmosphere goes down.

Sol: C

Photochemical smog occurs in summers during day time whereas classical smog is formed in the early morning hours of winter months.

10. Photochemical smog is formed in

- A. Summer during day time
- B. Summer during morning time
- C. Winter during morning time
- D. Winter during day time.

Sol: A

Photochemical smog is formed in summer during bright sunny day time.

11. Which of the following is not regarded as a pollutant?

- A. NO<sub>2</sub>
- B. CO<sub>2</sub>
- C. SO<sub>2</sub>
- D. CO.

Sol: B

CO<sub>2</sub> is not regarded as pollutant.

12. Which of the following statements is false?

- A. The main reason for river water pollution is industrial and domestic sewage discharge.
- B. Surface water, contains a lot of organic matter, mineral nutrients and radioactive materials.
- C. Oil spill in sea water causes heavy damage to fishery.
- D. Oil slick in sea water increases D.O. value.

Sol: D

Oil slick (layer) in sea water decreases D.O. value.

13. Addition of phosphate fertilizers into water leads to

- A. Increased growth of decomposers
- B. Reduced algal growth
- C. Increased algal growth
- D. Nutrient enrichment (eutrophication).

Sol: D

Addition of phosphate fertilizers into water leads to nutrient enrichment for algae etc. resulting in eutrophication.

14. By green chemistry we mean

- A. Producing chemicals of our daily use from greenhouse gases.
- B. Performing chemical processes which use green plants.
- C. performing only those reactions which are of biological origin.
- D. The use of non toxic reagents and solvents to produce environmental friendly products.

Sol: D

Green chemistry refers to the use of non-toxic reagents and solvents to produce environmental friendly products.

15. In Antarctica, ozone depletion is due to the formation of following compound?

- A. Acrolein.
- B. Peroxy acetyl nitrate
- C. SO<sub>2</sub> and SO<sub>3</sub>
- D. Chlorine nitrate

Sol: D

Hydrolysis of chlorine nitrate (ClONO<sub>2</sub>) results in the formation of compounds which initiate the chain reaction of ozone depletion.

16. Poisonous gas present in the exhaust fumes of car is

- A. CH<sub>4</sub>
- B. C<sub>2</sub>H<sub>2</sub>.
- C. CO
- D. CO<sub>2</sub>

Sol: C

CO is the poisonous gas present in exhaust fumes of car.

17. Which of the following is a sink for CO?

- A. Haemoglobin
- B. Microorganisms present in the soil
- C. Oceans
- D. Plants.

Sol: B

Microorganism converts CO into CO<sub>2</sub>.

18. Which of the following statements is false?

- A. The lower the concentration of D.O., the more polluted is the water sample.
- B. The tolerable limit of lead in drinking water is 50 ppm.
- C. Water is considered pure if it has BOD less than 5 ppm.
- D. In COD determination, the pollutants resistant to microbial oxidation are not oxidised by oxidising agents like K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>.

Sol: D

In COD determination, both organic and inorganic pollutants are oxidised by oxidising agent like K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>.

19. **Assertion (A)** Global warming is due to CO<sub>2</sub>.

**Reason (R)** Green plants require O<sub>2</sub> and in turn they emit CO<sub>2</sub> in photosynthesis.

- A. Both (A) and (R) are true and (R) is the correct explanation of (A).
- B. Both (A) and (R) are true but (R) is not the correct explanation of (A).
- C. (A) is true but (R) is false.
- D. (A) is false but (R) is true.

Sol: C

20. Fish die in water bodies polluted by sewage due to

- A. Pathogens
- B. Clogging of gills
- C. Decrease in D.O.
- D. Foul smell.

Sol: C

Microorganisms from sewage consume all dissolved oxygen and fish gets deprived of this oxygen and ultimately die.