

# SRIGAYATRI EDUCATIONAL INSTITUTIONS

## INDIA

### **ENVIRONMENTAL CHEMISTRY**

- An average human being requires air \_\_\_\_\_ times more than the food.  
1) 15-16                      2) 12-15                      3) 10-15                      4) 8-10
- The presence of ozone in the stratosphere prevents about \_\_\_\_\_ % of the sun's harmful U.V. radiant from reaching the earth's surface  
1) 80%                      2) 70%                      3) 95%                      4) 99.5%
- The presence of excess of nitrate in drinking water can cause.  
1) Pneumonia                      2) Methemoglobinemia  
3) Chlorea                      4) Typhoid
- According to Green chemistry the power of Kernel of which seeds has been found to be an effective material to make municipal and industrial waste water clean.  
1) Ground nut                      2) Neem                      3) Tamarind                      4) Mustard
- The temperature and density of air troposphere with altitude  
1) Increases                      2) Decreases  
3) Increases and then decreases                      4) Decreases and then increases
- The chemical entities present in thermosphere of the atmosphere are  
1)  $O_2^+, O^+, NO^+$                       2)  $O_3$                       3)  $N_2, O_2, CO_2, H_2O$                       4)  $O_3, O_2^+, O_2$
- Very toxic gas which causes headache, visual difficulty, paralysis and even death in the human beings is  
a)  $CO_2$                       b)  $O_3$                       c) CO  
1) A & B                      2) A                      3) C                      4) B
- Diesel vehicles pollute the environment largely through.  
a) CO                      b)  $NO_2$                       c) Particulates  
1) A & B                      2) B & C                      3) C & A                      4) A, B & C
- Which one of the following statement is false?  
1)  $O_3$  layer is destroyed by CFC's  
2)  $O_3$  involved in photochemical smog  
3) A product of photo chemical smog is  $CO_2$   
4) Smog reduces visibility
- Chlorofluoro carbons are effective scavengers for ozone due to  
1) Photolytic reaction of  $O_2$ , producing Cl radicals  
2) Photolytic decomposition of  $O_2$  producing  $O_3$   
3) Photolytic decomposition of  $O_3$  by Cl into  $O_2$

4) Photolytic production of oxides of nitrogen

11. Which of the following is/are weedicides?  
a) Sodium chlorate    b) DDT    c) Sodium arsenate    d) BHC  
1) A,C    2) A,B    3) A,D    4) B,D
12. Eutrophication causes reduction in  
a) Nutrients    b) Dissolved salts    c) Dissolved oxygen  
1) A    2) B & C    3) C    4) A,B & C
13. The temperature in stratosphere with an increase in altitude  
1) Increases    2) Decreases  
3) Increases and then decreases    4) Decreases and then increases
14. The use of liquid  $CO_2$  along with a surfactant for dry cleaning of clothes is for replacing following carcinogen chemical.  
1) PAN    2) BAN    3) perchloroethylene ( PERC)    4) PVC
15. The correct set of species responsible for photochemical smog (or) oxidising smog  
1)  $N_2, O_2, O_3$  and hydrocarbons    2)  $N_2, NO_2$  and hydrocarbons  
3)  $NO, NO_2, O_3$  and hydrocarbons    4)  $CO_2, NO_2, SO_2$
16. How many of the following pollutants are considered as non-viable particulate pollutants? Smoke, Dust, Fungi, Mists, Moulds, Algae, Smog, Bacteria, Fumes.  
1) 5    2) 6    3) 8    4) 2
17. A water sample has PPM level concentration of following anions,  $F^- = 10, SO_4^{2-} = 100, NO_3^- = 50$ .  
The water sample unsuitable for drinking is/are  
1) Only  $F^-$     2) Only  $SO_4^{2-}$     3) Only  $NO_3^-$     4) both  $SO_4^{2-}$  &  $NO_3^-$
18. The regions of the atmosphere, where clouds, form and where we live, respectively are  
1) Stratosphere and Stratosphere    2) Stratosphere and Troposphere  
3) Troposphere and Stratosphere    4) Troposphere and Troposphere
19. The maximum prescribed concentration of copper in drinking water is  
1) 5 ppm    2) 0.05 ppm    3) 3 ppm    4) 0.5 ppm
20. Carbomates are  
1) Nerve toxins    2) insecticide    3) Pesticides    4) Bio degradable
21. BOD values of 4 samples A,B,C,D of water are 60, 80, 100 and 150 mg/lit. respectively. Which is more polluted?  
1) A    2) B    3) C    4) D
22. The primary pollutant that leads to Photochemical smog formation  
1) Carotene    2)  $SO_2$     3) Oxidise of nitrogen    4)  $O_3$
23. The clouds responsible for ozone depletion in Antarctica.  
1) Polar tropospheric clouds    2) Non Polar stratospheric clouds  
3) Polar stratospheric clouds    4) Non polar tropospheric clouds



38. Di nitrogen & di oxygen gases don't react with each other at normal temp But in automobile engine they combine when fossil fuel is burnt to form two oxides report sum of oxidation states of nitrogen in both oxides

### KEY SHEET

1) 2	2) 4	3) 2	4) 3	5) 2	6) 1	7) 3	8) 4	9) 3	10) 3
11) 1	12) 3	13) 1	14) 3	15) 3	16) 1	17) 1	18) 4	19) 3	20) 2
21) 4	22) 3	23) 3	24) 4	25) 1	26) 5	27) 5	28) 3	29) 5.601	30) 6
31) 5	32) 5	33) 5	34) 6	35) 1	36) -4	37) 2	38) 6	39)	40)

### SOLUTIONS

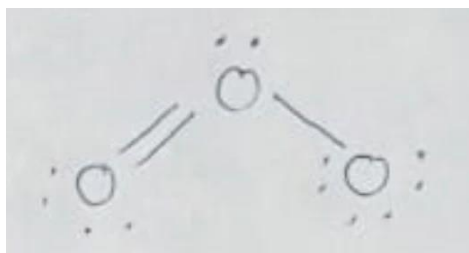
16. Non- viable particulate = Smoke , Dust , Mists, Smog , , Fumes.
17. The maximum limit of  $SO_4^{2-}$  is 500 ppm,  $NO_3^-$  is 50 ppm and  $F^-$  is 1 ppm.
21. As the BOD value increase extent of pollution for water also increases.
22. Hydrocarbons and oxides of nitrogen are primary pollutant for photo chemical smog formation.

25. 
$$\text{ppm} = \frac{\text{no of Parts}}{\text{Total no of parts}} \times 10^6$$

$$= \frac{6 \times 10^3}{1030} \times 10^6$$

26. Conceptual
27. The co-ordination for 'Fe' of haemoglobin is '6'. 4 co-ordination with 'N' of porphyrin rings. 1 co-ordination for globin and '1' – co-ordination for  $O_2$  (or)  $CO$ .
29.  $2H_2S + SO_2 \rightarrow 3S + 2H_2O$

30.



31. CFC's are chlorofluoro carbon's also known as freons. ie.  $CF_2Cl_2$
32.  $CO_2, N_2O, CH_4, O_3, N_2, CFC, O_2, H_2$
33.  $I_2O_5 + 5CO \rightarrow I_2 + 5CO_2$
35. Maximum conc. Of Fe is 0.2 and Zn is 5.
36. The  $F^-$  ion makes teeth much harder by Converting hydroxy apatite  $[3Ca_3(PO_4)_2 \cdot Ca(OH)_2]$  to Fluor apatite  $[3Ca_3(PO_4)CaF_2]$

