



## CHEMISTRY

### JEE (MAIN AND ADVANCED) CHEMISTRY

#### ENVIRONMENTAL CHEMISTRY

##### LECTURE SHEET (STRAIGHT OBJECTIVE TYPE QUESTIONS)

1. COD is a measure of

- A. Organic substances in water
- B. Oxides of S, P and N in air
- C. Inorganic pollutants in water
- D. Salinity of water

**Answer: A**



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2. The extent of conversion of oxyhaemoglobin to carboxy haemoglobin depends on

- A. Concentration of CO in air
- B. time of exposure of the person to CO
- C. Both 1& 2
- D. amount of haemoglobin in blood

**Answer: C**

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3. Global warming can be prevented by

- A. Constructing more dams on rivers
- B. Deforestation

C. Growing more trees

D. Carefully utilizing ground water

**Answer: C**



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4. The set of gases causing green house effect is

A.  $CO_2$ ,  $CO$ ,  $SO_2$ ,  $N_2$

B.  $CO_2$ ,  $CH_4$ ,  $O_3$ ,  $NO$

C.  $CH_4$ ,  $SO_2$ ,  $N_2$ ,  $O_2$

D.  $CO_2$ ,  $Br_2$ ,  $N_2$ ,  $O_2$

**Answer: B**



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5. Unimely and unusual rains are due to

- A. Global warming
- B. Use of jet planes
- C. Increase in  $SO_2$  level
- D. Depletion of Ozone layer

**Answer: A**



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6. Gas used in refrigerators is

- A. DEL
- B.  $C_8H_{18}$
- C.  $CCl_2F_2$
- D.  $CCl_3NO_2$



**Answer: C**



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**7. CFC are used extensively, It is because**

- A. They are reactive
- B. They are liquids
- C. They are gases
- D. They are cheap and stable

**Answer: D**



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**8. Which of the following does not contribute towards the formation or photochemical smog?**

A.  $NO$

B.  $SO_2$

C.  $O_3$

D. Hydrocarbons

**Answer: B**



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**9. The aromatic compounds present as particulates are**

A. Benzene

B. Toluene

C. Nitrobenzene

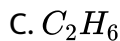
D. Polycyclic aromatic hydrocarbons

**Answer: D**



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10. Poisonous gas present in the exhaust fumes of an automobile is



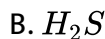
**Answer: D**



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11. Identify the correct decreasing order of the following with respect to altitude from atmosphere I) Troposphere II) Meosphere III) Thermosphere

A. II,III,I



C.  $CH_4$

D. *I, III, II*

**Answer: B**



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**12.** When organic substances undergo anaerobic degradation the product formed mainly is

A.  $CO_2$

B.  $H_2S$

C.  $CH_4$

D. NO

**Answer: C**



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**13.** The term not responsible for water pollution

- A. Industrial Revaluation
- B. Environmental Friendly reactions
- C. Blue Revolution
- D. Over population

**Answer: B**



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**14.** Carcinogenic water pollutant is

- A. Volatile aromatic compounds
- B. non volatile aromatic
- C. methane
- D. Formaldehyde

**Answer: B**



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**15.** The main source of phosphate pollution in water is

A. oil pollutant

B. pestioides

C. sewage

D. sediments

**Answer: C**



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**16.** Disease caused by excess of flourides in water is

A. minamita

B. Lung cancer

C. paralysis

D. Fluorosis

**Answer: D**



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**17. Domestic waste mostly constitutes**

A. Non-biodegradable pollutants

B. Biodegradable pollutants

C. Effluents

D. Air pollutants

**Answer: B**



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**18.** Sewage water is mostly constitutes

- A. Microorganisms
- B. Light
- C. Fishes
- D. Aquatic plants

**Answer: A**



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**19.** Water is often treated with chlorine to

- A. Increase oxygen content
- B. Kill germs
- C. Remove suspended particles
- D. Remove hardness



**Answer: B**



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**20. Faecal matter polluting drinking water causes**

- A. Fluorosis
- B. Chlorosis
- C. Jaundice
- D. minamata disease

**Answer: C**



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**21. Which of the following is not an air pollutant?**

- A.  $N_2$

B.  $N_2O$

C.  $NO$

D.  $CO$

**Answer: A**



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**22. Biodegradable materials are**

A. Those which spoil the biological environment

B. Are toxic

C. Can be broken down by bacteria

D. Used for converting waste to greenary

**Answer: C**



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**23.** Correct statements of the following are

- A. Fluorides can be detected by zirconium - alizarin S - dye
- B. Harmless level of fluorides in water is upto 10ppm
- C. In Na<sub>2</sub>CO<sub>3</sub> technique lime, alum and bleaching powder are added in the same order
- D. Less than 3ppm of fluoride concentration can cause fluorosis

**Answer: A**



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**24.** Which of the following statements is FALSE?

- A. Photochemical smog causes irritation in eyes
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN

D. London smog is oxidising in nature

**Answer: D**



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**25.** Among the following which are contaminants

A.  $SO_2$

B. Pb

C. NaCl

D. MIC

**Answer: D**



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**26.** Which of the following is a secondary pollutants ?

A.  $SO_2$

B. PAN

C. Hydrocarbons

D. NO &  $NO_2$

**Answer: B**



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**27. Which of the following is a primary pollutants?**

A. PAN

B.  $CH_3CHO$

C.  $CH_3 - N = C = O$

D. CO

**Answer: D**



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28. The extent of conversion of oxy haemoglobin to carboxy haemoglobin depends on

- A. low concentration of CO in air
- B. time of exposure of the person to CO
- C. percentage of haemoglobin in blood
- D. the strength of the bond between CO and Fe in Haemoglobin

**Answer: B**



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29. Which is incorrect about green house effect?

- A. It is due to high concentration of  $CO_2$  in atmosphere
- B. It is influenced by gases like  $CH_4$ ,  $O_3$  and CFC's
- C. It results in lowering of the level of Oceans

D. it results in warming up of the earth

**Answer: C**



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**30.** The temperature falls with an increase in altitude at

A. stratosphere

B. Atmosphere

C. mesosphere

D. thermosphere

**Answer: C**



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**31.** Bio degradable pollutants are

- A. DDT
- B. BHC
- C. plastics
- D. domestic waste

**Answer: D**



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**32. Which of the following are incorrect about fungicides**

- A. Thiram
- B. phenyl mercury acetate
- C. sodium arsenate
- D. bordeaux mixture

**Answer: B**



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33. Which is incorrect about DDT is

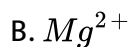
- A. organic pollutant
- B. p-p-dichloro diphenyl ethane
- C. It contain two Benzene rings & 5 halogen atoms
- D. It replace by Aldrin in pestisides to decrease water pollution

Answer: B



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34. Which of the following is not responsible for hardness of water?



D.  $Cl^-$

Answer: C



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35. Match the following

List- I

A)  $NO_3^-$  ion in drinking water is greater than 50 ppm causes

B)  $SO_4^{2-}$  ion is greater than 550ppm causes

C) Mercury poison causing

D) Domestic sewage

List - II

1) Dissolved oxygen decreases

2) Minamita disease

3) Laxative effect

4) Blue baby syndrome



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### 36. Match the following

#### List-I

- A) Cu, Zn from chromium plating industry
- B) Phosphate, Nitrates, sulphate toxic to aquatic animals
- C) Fluorides
- D) Cyanides,  $H_2S$ ,  $CO_2$ , Nitrogen oxides

#### List-II

- 1) Eutrophication
- 2) pH of water changes and
- 3) Consumes dissolved oxygen
- 4) Bones and teeth are affected
- 5) Affects human health and aquatic animals

The correct match is

	A	B	C	D
1)	1	4	3	5
3)	2	3	5	4

	A	B	C	D
2)	5	1	4	2
4)	1	2	3	5

A. option 1

B. option 2

C. option 3

D. option 4

**Answer: D**



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### 37. Which are the primary constituents of photochemical smog?

A.  $SO_2$  and  $CO$

B.  $NO_2$  & hydrocarbons

C.  $CO_2$  and  $NO_2$

D.  $CO$  and  $CO_2$

**Answer: B**



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**38.** Photochemical transformation of the automobile exhaust emission in DV wavelength of sunlight results into

A.  $CH_4$  and  $C_6H_6$

B.  $O_3$  and  $PAN$

C.  $CO_2$  and  $NO_2$

D.  $CO$  and  $CO_2$

**Answer: B**



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39. Smog is common pollutant in places having

- A. high temperature
- B. low temperature
- C. excessive ammonia in the air
- D. excessive sulphur dioxide in the air

**Answer: A**



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40. Photochemical smog formed in congested metropolitan cities mainly consists of

- A. hydrocarbons  $SO_2$  and  $CO_2$
- B. hydrocarbons, ozone and  $SO_2$
- C. ozone, peroxyacetyl nitrate and  $NO_2$

D. smoke, peroxyacetyl nitrate and  $SO_2$

**Answer: C**



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**41.** The ozone layer is present in

A. troposphere

B. stratosphere

C. mesosphere

D. thermosphere

**Answer: B**



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**42.** The result of ozone hole is

- A. acid rain
- B. greenhouse effect
- C. global warming
- D. the UV radiations reach to earth

**Answer: D**



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**43.** Freon is not recommended to be used in refrigerators because they

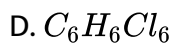
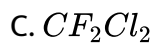
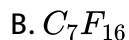
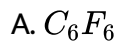
- A. increase temperature
- B. deplete ozone
- C. affect environment
- D. affect human body

**Answer: B**



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44. Ozone in stratosphere is depleted by



Answer: C



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45. Peeling of ozone umbrella, which protects us from UV rays is caused by:

A. PAN





D. Coal burning

**Answer: C**



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**LECTURE SHEET (STRAIGHT OBJECTIVE TYPE QUESTIONS) (ASSERTION & REASON TYPE QUESTIONS)**

1. Which of the following deplete ozone layer?

A.  $SO_2$

B.  $CO_2$

C.  $CO$

D.  $NO$

**Answer: D**



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2. (A): The temperature in the thermo sphere increseces with altitude.

(R) : Ozone present in stratosphere absorbs ultraviolet radiation

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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3. (A): Ionosphere contains gases in the ionised form which form the bases for wireless communication

(R): The ions reflect back the radio waves to the earth.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



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4. (A): Rain water normally has a pH of 5.6.

(R) : The presence of  $H_2SO_4$  and  $HNO_3$  produced from the oxide of sulphur and nitrogen lower the pH of rain.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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5. (A): Smaller particles (Size < 5 microns) cause fibrosis of the lung lining.

(R) : Smaller particles (Size < 5 microns) are more likely to penetrate into the lungs.

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

**Answer: A**



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6. (A): COD of water is determined by oxidising the organic matter with acidified (50%  $H_2SO_4$ ) potassium dichromate solution

(R) Greater the COD value of water greater is its pollution

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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7. (A) Acid rains have been reported in some places which are far away from the places where industries are located

(B) (R) : Rain clouds move away from industries.

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

**Answer: A**



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8. (A) : Instead of pesticides, herbicides like  $NaClO_3$ ,  $Na_3AsO_3$  are used in agriculture sector.

(R) : The fields sprayed with herbicides are more easily attacked by insects and plant diseases

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

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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### PRACTICE SHEET (STRAIGHT OBJECTIVE TYPE QUESTIONS)

1. Identify the secondary pollutant among the following

A.  $CH_4$

B. Peroxy acetyl nitrate

C.  $SO_2$

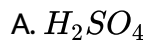
D.  $NO$

**Answer: B**



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2. Which of the following is a primary pollutant?



B. Acrolein

C. Formaldehyde

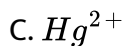
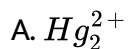
D. CO

**Answer: D**



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3. Which of the following is most toxic ?



D. Methyl mercury



**Answer: D**



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**4. In which region of atmosphere, lowest temperatures are observed?**

A. Troposphere

B. Stratosphere

C. Meso sphere

D. Thermosphere

**Answer: C**



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**5. Global warming of the atmosphere due to trapping of radiation of long wavelength is called**

- A. air pollution
- B. depletion of ozone layer
- C. photo synthesis
- D. green house effect

**Answer: D**



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**6. Composition of PAN is**

- A.  $CH_2 = CH - CHO$
- B.  $CH_3 - \underset{\begin{smallmatrix} || \\ O \end{smallmatrix}}{C} - O - O - NO_2$
- C.  $HCHO$
- D.  $CH_3CH_2ONO$

**Answer: B**



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7. Among the following which is a contaminant

A.  $SO_2$

B.  $Pb$

C. Methyl Mercury

D.  $CO_2$

**Answer: C**



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8. Which of the following is contaminant responsible for Bhopal gas tragedy?

A.  $CO_2$

B.  $SO_2$

C.  $CH_3NCO$  (MIC)

D.  $O_3$

**Answer: C**



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9. A substance which is not present in nature but added to atmosphere due to human activity and causes adverse effect on environment is called

A. Pollutant

B. Contaminant

C. Sink

D. Receptor

**Answer: B**



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**10.** Identification of a pollutant as organic, inorganic (or) organometallic origin is called

- A. Classification
- B. Categorization
- C. differentiation
- D. Speciation

**Answer: D**



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**11.** The medium which reacts with pollutant is called

- A. Sink
- B. Receptor
- C. Contaminant
- D. Speciation

**Answer: A**



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**12.** The sink for dead plants and animals is

- A. Sea water
- B. River
- C. Micro organisms
- D. Atmosphere

**Answer: C**



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**13.** Three samples of water A, B and C have the D.O levels of 4 ppm, and 3.8 ppm and 2.1 ppm respectively the most polluted sample of water is

A. can not be predicted

B. B

C. C

D. A

**Answer: C**



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**14. A good quality of water will have**

A. high D.O

B. high B.O.D

C. high C.O.D

D. high T.L.V

**Answer: A**



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15. The amount of oxygen required to oxidise organic substance present in water is called

- A. DO
- B. COD
- C. BOD
- D. TLV

**Answer: B**



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16. Chemical oxygen demand is determined by using

- A. Methyl organe
- B.  $K_2Cr_2O_7 + 50\% H_2SO_4$
- C.  $CaOCl_2 + 50\% H_2SO_4$



D.  $Alum + CaO$

**Answer: B**



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17. The TLV values of four pollutants A, B, C and D are 9ppm, 10ppm, 100ppm and 500 ppm respectively. The most toxic amount among them is

A. A

B. B

C. C

D. D

**Answer: A**



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18. 100 ml of a sample of water requires 0.98mg of  $K_2(M. W. = 294)$  in presence of the  $H_2SO_4$  for the oxidation of dissolved organic matter in it. The COD of the water sample is

A. 78.4 ppm

B. 1.6 ppm

C. 3.2 ppm

D. 6.4 ppm

**Answer: B**



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19. A sample of pond water containing 20mg of organic matter requires 16 mg of dissolved oxygen. (Pond water contains 10mg of organic matter per 2 litres). It's BOD is

A. 4000 ppm

B. 400 ppm

C. 4 ppm

D. 40 ppm

**Answer: C**



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20. COD of a water sample is 8ppm the weight of acidified  $K_2Cr_2O_7$  required to oxidise the organic matter present in one litre of water sample is

A. 98 mg

B. 49 mg

C. 196 mg

D. 98 g

**Answer: B**



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21. The region which is greatly affected by air pollution is

- A. troposphere
- B. stratosphere
- C. Mesosphere
- D. thermosphere

**Answer: A**



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22. The region which contains water vapour is

- A. stratosphere
- B. Troposphere
- C. Mesosphere

D. thermosphere

**Answer: B**



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**23.** Solid component of the earth consisting of soil, rocks and mountains is called

A. Hydrosphere

B. Lithosphere

C. Atmosphere

D. Biosphere

**Answer: B**



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24. Which of the following is a primary pollutant

A. CO

B. PAN

C. Aldehydes

D.  $H_2SO_4$

**Answer: A**



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25. The greatest affinity for haemoglobin is shown by

A. NO

B. CO

C.  $O_2$

D.  $CO_2$

**Answer: B**



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**26.** The most abundant hydrocarbon pollutant is

A. Ehtane

B. Methane

C. Propane

D. Butane

**Answer: B**



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**27.** Ozone layer is present in

A. Trophosphere

B. stratosphere

C. mesosphere

D. thermosphere

**Answer: B**



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**28.** In which or the following region ionisation of gases takes place

A. Troposphere

B. stratosphere

C. mesosphere

D. thermosphere

**Answer: B**



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29. Heat balance on earth surface is maintained by circulation of air in

- A. Troposphere
- B. Thermosphere
- C. Lithosphere
- D. Stratosphere

**Answer: A**



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30. Lung diseases are four times more in urban areas than in rural areas.

This is due to the presence of

- A.  $SO_2$
- B.  $CO_2$
- C.  $N_2$
- D. Steam

**Answer: A**



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**31.** The pH of acid rain may be

A. 8.2

B. 4.6

C. 5.6

D. 10.1

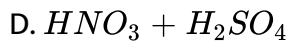
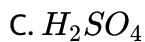
**Answer: B**



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**32.** Acid rains contain

A. HCl



**Answer: D**



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**33.** The beauty of Tajmahal is getting destroyed due to

A. Global warming

B. photochemical reaction

C. presence of  $CO$  gas in air

D. acid rain

**Answer: D**



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34. Gases responsible for acid rain are

- A. NO and  $NO_2$
- B.  $SO_2$  only
- C.  $NO_2$  and  $SO_2$
- D. CO,  $CO_2$

Answer: C



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35. The pollutant which deteriorates the plant cellulose

- A. Benzopyrene
- B. PAN
- C. BHC
- D.  $H_2SO_3$

**Answer: B**



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**36. Wrong statement regarding 'London smog' is**

- A. Observed in winter season
- B. It is reducing in nature
- C. It is due to Carbon particles  $SO_2$
- D. It observed when solar radiation is high

**Answer: D**



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**37. Smog is mainly due to**

- A. Oxides of sulphur & Carbon particles

B. Oxides of Pb

C. Oxides of carbon

D. Oxides of Chlorine

**Answer: A**



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**38.** Which of the following pollutant is released from the emissioin tubes of diesel engines

A. Mercury

B. Lead

C. Benzopyrene

D.  $CFCl_3$

**Answer: C**



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39. Which of the following are biodegradable pollutants?

- A. Pesticides
- B. Domestic wastes
- C. Mercuric salts
- D. Lead compounds

**Answer: B**



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40. A 50% increase of  $CO_2$  level in atmosphere causes

- A. The increase of surface temperature by  $3^\circ C$
- B. The increase of sea level by 7 meters
- C. The decrease of rate of evaporation of surface water
- D. The decrease in  $CO_2$

**Answer: A**



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**41.** DV radiation from sun causes a reaction that produces

- A. Carbon monoxide
- B. Sulphur dioxide
- C. Fluorides
- D. Ozone

**Answer: D**



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**42.** Chlorofluorocarbon releases which of the following chemical harmful to ozon



- A. Fluorine
- B. Chlorine
- C. Nitrogen dioxide
- D. Sulphur dioxide

**Answer: B**



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**43. 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

**Answer: C**



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44. Ozone layer of stratosphere requires protection from indiscriminate use of

- A. Pesticides
- B. Atomic explosions
- C. Aerosols & high flying jets
- D. Balloons

**Answer: C**



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45. Tajmahal is effected by

- A.  $CO$
- B.  $CO_2$
- C.  $CaO$

D.  $CO_2$

**Answer: B**



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**46.** Which one of the following is mainly responsible for the depletion of ozone layer

A.  $CH_4$

B.  $CO_2$

C.  $H_2O$

D.  $CFC$

**Answer: D**



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47.  $CHCl_3$  is responsible for the decomposition of ozone' to oxygell.

Which of the following reacts with ozone to form oxygen



**Answer: D**



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48. An object is located at a height of  $5 \times 10^4$  km from the surface of the earth.

The object is located in which part of atmosphere?

A. Thermosphere

B. Mesosphere

C. Stratosphere

D. Troposphere

**Answer: D**



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**49.** The term not responsible for water pollution

A. Green revolution

B. blue revolution

C. Industrial revolution

D. Green chemistry

**Answer: D**



**Watch Video Solution**

**50.** Water pollution does not cause

- A. Change in colour and salinity of water
- B. increased fish population
- C. decrease in quality of water
- D. uncontrolled growth of weeds in water

**Answer: B**



**Watch Video Solution**

**51.** The reagent used to detect fluoride present in water in

- A. Alum + CaO +  $CaOCl_2$
- B. defluoron-I & II
- C. Zirconium-alizarin-S.dye
- D. Calcium aluminium fluoride

**Answer: C**



**Watch Video Solution**

52. Which one of the following substances is used to reactivate the deactivated filters in activated carbon method for defluoridation ?

- A. Defluoron-1
- B.  $CaOCl_2$  lime and alum
- C. 4% NaOH solution and then 1 %  $H_3PO_4$  solution
- D. 4 % NaCl solution and then 5 %  $H_2SO_4$  solution

**Answer: C**



**Watch Video Solution**

53. Formula of enamel on teeth is

- A.  $3Ca_3(PO_4)_2 \cdot Ca(OH)_2$
- B.  $3Ca_3(PO_4)_2 \cdot CaF_2$
- C.  $Ca_3(PO_4)_2$

D.  $CaF_2$

**Answer: B**



**Watch Video Solution**

**54.** Water become useless for drinking purpose if the fluoride concentration exceeds

A. 10 ppm

B. 5 ppm

C. 3ppm

D. 20 ppm

**Answer: C**



**Watch Video Solution**



55. In ion exchange method of defluoridation of water, which one of the following is used

A.  $CaOCl_2$

B. defluoron-1

C. defluoron-2

D. Both 2 and 3

**Answer: D**



**Watch Video Solution**

56. DDT is

A. A fertilizer

B. Biodegradable pollutants

C. Non-biodegradable pollutant

D. Greenhouse gas

**Answer: C**



**Watch Video Solution**

**57.** The suspected carcinogenic water pollutant is

- A. MIC
- B. methylated mercury
- C. Tetrachloroethene
- D. Volatile aromatic compounds

**Answer: C**



**Watch Video Solution**

**58.** Phosphate pollution is caused by

- A. Weathering of phosphate rocks only

- B. Agricultural fertilizers only
- C. Phosphate rocks and sewage
- D. Sewage and agricultural fertilizers

**Answer: D**



**Watch Video Solution**

**59.** By using activated carbon method, F<sup>-</sup> ion concentration in water can be decreased from

- A. 12ppm to 5ppm
- B. 12ppm to 1ppm
- C. 15ppm to 10ppm
- D. 15ppm to 7ppm

**Answer: B**



**Watch Video Solution**

60. In the Nalgonda method, chemicals used for defluoridation of water in correct order are

- A.  $CaO + CaOCl_2$
- B.  $CaOCl_2 + CaO + Alum$
- C.  $CaO + CaOCl_2 + Alum$
- D. Any of the above

**Answer: D**



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61. Which one of the following can be recycled ?

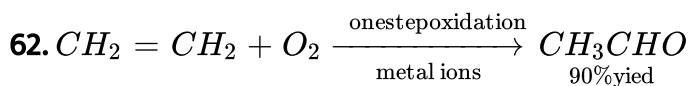
- A. Garbage
- B. DDT
- C. Plastic

D. Nuclear waste

Answer: C



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Oxidation states of metal ions used

A. +2, +4

B. +2, +2

C. -2, -3

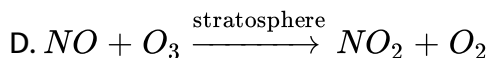
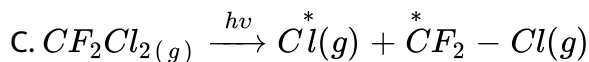
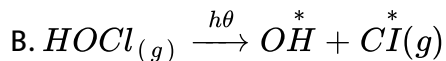
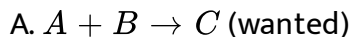
D. +2, -3

Answer: B



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63. Which of the following is environmental friendly reaction



Answer: A



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64. Metal that escapes into atmosphere by the fumes of automobile vehicles

A. Hg

B. Pb

C. Na

D. Cu

**Answer: B**



**Watch Video Solution**

**65.** Which of the following is green house gas and also causes depletion of ozone layer

A.  $CFCs$

B.  $CO_2$

C.  $CH_4$

D.  $H_2O$

**Answer: A**



**Watch Video Solution**

**66.** The common components of photo chemical smog are

A.  $O_3$ ,  $NO_2$  acrolein HCHO, PAN

B.  $O_3$ ,  $O_2$ ,  $H_2$ ,  $Ni$ ,  $Cu$

C.  $NO + O_3$

D. Only PAN, acrolein

**Answer: A**



**Watch Video Solution**

**67.** Which of the following is not the effect of ozone hole.

A. Ageing of skin

B. Killing many phyto planktons

C. Increasing the moisture content of the soil

D. Cataracts acrolein

**Answer: C**



**Watch Video Solution**



68. The green house effect is mainly caused by

A.  $NO_2$

B.  $NO$

C.  $CO$

D.  $CO_2$

**Answer: D**



**Watch Video Solution**

69. Among the following herbicide is

A. DDT

B. Aldrin

C. Dieldrin

D.  $\text{Na}_3\text{AsO}_3$

**Answer: D**



**Watch Video Solution**

### ADDITIONAL PRACTICE EXERCISE (LECTURE SHEET)

1. Which of the following can act as sink for  $\text{CO}_2$  and  $\text{SO}_2$

A. aqKOH

B. Plants

C. Sea water

D. Soil

**Answer: C**



**Watch Video Solution**

2. Water is said to be polluted if the D.O value of water is less than

A. 152 ppm

B. 4 ppm

C. 50 ppm

D. 100 ppm

**Answer: B**



**Watch Video Solution**

3. The amount of oxygen required for healthy growth of plants and animals in water is

A. 1-2 mg/ml

B. 4-6g/lit

C. 1-2g/100 ml

D. 4-6mg/litre

**Answer: D**



**Watch Video Solution**

4. The amount of oxygen used by micro organisms present in water for five days at  $20^{\circ}C$  is called

A. COD

B. DO

C. TLV

D. BOD

**Answer: D**



**Watch Video Solution**

5. Which of the following is a measure of bacteria present in water

A. D.O

B. COD

C. B.O.D

D. TLV

**Answer: C**



**Watch Video Solution**

**6.** Which of the following does not indicate high level of pollutants or the toxic substances I) High DO value II) High COD value III) High BOO value IV) High TLV The correct combination is

A. All are correct

B. I and IV only

C. II and III only

D. III and IV only

**Answer: B**



**Watch Video Solution**

7. The study of toxicity of organo metallic compounds is termed as

- A. classification
- B. categorization
- C. eutrophication
- D. speciation

**Answer: D**



**Watch Video Solution**

8. The level of CO gas in air that causes immediate death is

- A. 10 ppm

B. 100ppm

C. 500ppm

D. 1000 ppm

**Answer: D**



**Watch Video Solution**

**9. The source of  $CO_2$  in the atmosphere is**

A. combustion of fuel

B. fermentation

C. Respiration

D. All the above

**Answer: D**



**Watch Video Solution**

10. Which is incorrect about 'green house effect'

- A. It is due to high concentration of  $CO_2$  in atmosphere
- B. It is influenced by gases like  $CH_4$  and CFCs
- C. It results in lowering of the level of oceans
- D. It results in warming up of the earth

Answer: C



Watch Video Solution

11. The species formed in the depletion of ozone layer by chlorofluorocarbons in free radical mechanism is

- A.  $ClO^*$
- B.  $F^*$
- C.  $O_2F_2$
- D.  $ClO_2$



**Answer: A**



**Watch Video Solution**

**12.** Ozone is useful in \_\_\_\_\_ and harmful in \_\_\_\_

- A. Troposphere & Mesosphere
- B. Mesosphere & Troposphere
- C. Thermosphere & Stratosphere
- D. Stratosphere & Troposphere

**Answer: D**



**Watch Video Solution**

**13.** Carcinogenic pollutant is

- A. CO

B.  $SO_2$

C. Benzopyrene

D. PAN

**Answer: C**



**Watch Video Solution**

**14. Which of the following is a sink for  $CO$  ?**

A. Hemoglobin

B. Micro organisms present in the soil

C. Oceans

D. Plants

**Answer: B**



**Watch Video Solution**

15. Depletion of ozone layer causes

- A. Blood cancer
- B. Lung cancer
- C. Skin cancer
- D. Brast cancer

**Answer: C**



**Watch Video Solution**

16. The type of hybridisation of carbon atoms of the molecule of the gas involved in Bhopal gas tragedy

- A.  $sp$ ,  $sp^2$
- B.  $sp$ ,  $sp^3$
- C.  $sp^3$ ,  $sp$
- D.  $sp^2$ ,  $sp^3$

**Answer: B**



**Watch Video Solution**

**17.** The non-viable particulate is among the following is

- A. Dust
- B. Bacteria
- C. Moulds
- D. Fungi

**Answer: A**



**Watch Video Solution**

**18.** The loss or reduction of chlorophyll in the leaves is termed as

- A. Necrosis

B. Chlorosis

C. Epinasty

D. Lichen

**Answer: B**



**Watch Video Solution**

**19.** Increase in concentration of pollutant by the process of food chains is called

A. Eutrophication

B. Bioamplification

C. Defluoridation

D. Biological oxidation

**Answer: B**



**Watch Video Solution**

20. Eutrophication is mainly caused by

- A. Food chains
- B. Chlorotlorocarbons
- C.  $SO_2$  and  $CO_2$
- D. Nitrates and Phosphates

**Answer: D**



**Watch Video Solution**

21. Which of the following is not an algae nutrient?

- A. Hg
- B.  $PO_4^{3-}$
- C.  $NO_3^-$
- D.  $CO_2$

**Answer: A**



**Watch Video Solution**

**22.** Lakes containing excess of nutritive substance are called

- A. Polluted lakes
- B. Eutrophic lakes
- C. Dead lake
- D. Green Lake

**Answer: B**



**Watch Video Solution**

**23.** Which of the following decreases the dissolved oxygen in water?

- A. Organic matter

B. flourides

C. Carbonates

D. Methyl Hg

**Answer: A**



**Watch Video Solution**

**24. Which of the following is used as "Bioremedies"**

A. Nitrates & phosphates

B. Enzymes & microorganisms

C. Sediments & oils

D. Oxides of nitrogen

**Answer: B**



**Watch Video Solution**



25. 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)

**Answer: D**



**Watch Video Solution**

26. Identify the incorrect statement.

- A. Plants and sea water are receptors of  $CO_2$
- B. Micro organism acts as sink for dead plants and animals
- C. methyl isocyanate and DDT are contaminants
- D. Pb, Hg,  $CO_2$ , and  $SO_2$  are pollutants

**Answer: A**



**Watch Video Solution**

**27. Identify incorrect statement regarding photochemical smog**

- A. It is oxidising in nature
- B. It is formed when intensity of solar radiation is very high
- C. It is formed by PBN,  $O_3$  and oxides of nitrogen
- D. It is formed by the particulate carbon and  $SO_2$

**Answer: D**



**Watch Video Solution**

**ADDITIONAL PRACTICE EXERCISE (LECTURE SHEET)(ASSERTION & REASON  
TYPE QUESTIONS)**

1. (A): Nowadays surface of the earth gets heated up.

(R):  $CO_2$  and water vapour partly reflects IR radiation back to earth's surface.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



**Watch Video Solution**

2. (A): Holes in ozone layer are observed at the north and the south poles by scientists.

(R): UV radiation damages eyes causing cataract of eyes.

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

**Answer: B**



**Watch Video Solution**

3. (A): CO pollution is very high from 9AM to 10 AM in Urban areas

(R): Almost 80% CO is released from Automobiles

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

D. (A) is false but (R) is true

**Answer: A**



**Watch Video Solution**

4. (A): The pH of normal rain is 5.6.

(R)  $CO_2$  present in atmosphere absorbed in moisture to give  $H^+$  and  $HCO_3^-$

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



**Watch Video Solution**

5. (A): Instead of using conventional fuels and energy systems, non-conventional fuels and non-conventional energy systems must be put into practice.

(R): Non-conventional fuels and non-conventional energy systems will cause more pollution.

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

**Answer: C**



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6. (A): Research must be carried in such a manner that there will not be any waste by product in the reactions.

(R) : The reaction which gives no by product is an environment friendly reaction.

A. Both (A) and (R) are true and (R) is the correct explanation'of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



**Watch Video Solution**

7. (A): Concentration of soluble  $F^-$  ions in drinking water about 1 ppm is essential.

(R) Enamel on teeth is made much harder by converting hydroxyapatite

$3Ca_3(PO_4)_2Ca(OH)_2$  into  $3Ca_3(PO_4)_2CaF_2$

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

**Answer: B**



**Watch Video Solution**

8. (A): Cellulose is used as sizing agent in place of starch in textile industry.

(R) : By changing process and raw-materials polluted waste is reduced.

- A. Both (A) and (R) are true and (R) is the correct explanation of (A)



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

**Answer: B**



**Watch Video Solution**

## ADDITIONAL PRACTICE EXERCISE (PRACTICE SHEET)

1. Ultra violet light causes

- A. Sticky metaphases
- B. Photodynamic action
- C. Destruction of hydrogen bonds between complementary DNA strands

D. Formation of pyrimidines

**Answer: C**



**Watch Video Solution**

2. Method of incineration is mostly applicable to

A. Plastics

B. Nuclear waste

C. Dried leaves & bodies

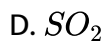
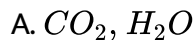
D. Pesticides

**Answer: C**



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3. Incomplete combustion of petrol in automobile engines can be detected by testing the fuel gases for the presence of

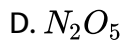
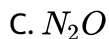


**Answer: B**



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4. Among the oxides of nitrogen, a brown coloured gas is



**Answer: A**



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**5. The compound used as refrigerant is**

A. Westeron

B. Hydrogen peroxide

C. Gammaxene

D. Freon

**Answer: D**



**Watch Video Solution**

**6. An example of major air pollutant is**

A.  $O_2$

B.  $CO_2$

C.  $O_2$

D.  $N_2$

**Answer: C**



**Watch Video Solution**

7. Which of the following combines with blood to form oxy-haemoglobin

A.  $CO$

B.  $CO_2$

C.  $O_2$

D.  $N_2$

**Answer: C**



**Watch Video Solution**

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

A.  $CH_4$

B.  $C_2$

C.  $CO$

D.  $CO_2$

**Answer: C**



**Watch Video Solution**

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

A. Ultraviolet rays

B. Cosmic rays

C. Free radical

D. Nitrogen oxides

**Answer: A**



**Watch Video Solution**

**10.** Surface water contains

- A. Salt + Organic matter
- B. Only salt
- C. Oranic matter
- D. Suspended impurity

**Answer: A**



**Watch Video Solution**

**11.** The temperature of troposphere decreases with altitude and is minimum at about 10 km. This point of temperature inversion is known as

A. Tropopause

B. Stratopause

C. Tempopause

D. Tropoinversion

**Answer: A**



**Watch Video Solution**

**12.** The nature of poisonous gas present in the exhausts of car is

A. Acidic ,CO

B. Acidic ,  $CO_2$

C. Neural  $CO_2$

D. Acidio,  $C_2H_2$

**Answer: A**



**Watch Video Solution**



13. A secondary pollutant is

- A. CO
- B.  $CO_2$
- C. PAN
- D. Aerosol

**Answer: C**



**Watch Video Solution**

14. Cyclonic collector is used for reducing:

- A. Water pollution
- B. Air pollution
- C. Soil pollution

D. All the above

**Answer: B**



**Watch Video Solution**

**15. Which statement is not correct ?**

- A. Positive soil pollution refers to the reduction in soil productivity due to use of fertilizers and pesticides
- B. Negative soil pollution refers to the reduction in soil productivity due to erosion and over use
- C. Nuclear chemistry is not a part of green chemistry
- D. Loam soil contains unequal amounts of sand, silt and clay.

**Answer: D**



**Watch Video Solution**

16. Tolerable limits of lead and fluorides drinking water according to international standard are respectively

- A. 50 ppm and 3 ppm
- B. 50 ppm and 1 ppm
- C. 50 ppm and 5 ppm
- D. 1ppm and 50 ppm

**Answer: B**



**Watch Video Solution**

17. In Antarctica ozone depletion is due to the formation of following compound

- A. acrolein
- B.  $SO_2$  and  $SO_3$
- C. peroxy acetyl nitrate

D. Formaldehyde

**Answer: D**



**Watch Video Solution**

**18.** Pollutant of automobile exhausts that affects nervous system and produces mental diseases is

A. Lead

B. Mercury

C. Nitric oxide

D. Sulphur dioxide

**Answer: A**



**Watch Video Solution**

**19.** 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

**Answer: A**



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**20.** Positive soil pollution is

- A. Reduction in soil productivity due to addition of pesticides fertilizers and industrial wastes

- B. Reduction in soil productivity due to erosion and over use :
- C. Converting fertile land into barren land by dumping ash garbage and rubbish
- D. None of these

**Answer: C**



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**21.** TLV values of four pollutants A,B,C and D are 2ppm, 9 ppm, 20 ppm and 50 ppm. Among these four pollutants which one is the most toxic pollutant ?

- A. A
- B. B
- C. C
- D. D

**Answer: A**



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22. 100 ml of sample of water requires 3.92 mg of  $K_2Cr_2O_3$  in presence of  $H_2SO_4$  for the oxidation of dissolved organic matter present in it. The COD of the water sample in ppm

A. 3: 1

B. 6: 4

C. 12: 4

D. 8.2

**Answer: B**



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**23.** Proper management of disposal of household and industrial wastes can be done by

- A. Recycling the waste material to give useful products again
- B. Burning (Incineration)
- C. Sewage treatment
- D. All the above

**Answer: D**



**Watch Video Solution**

**24.** Incorrect statement regarding waste management is

- A. Bio-degradable and non-biodegradable wastes are separated from garbage waste
- B. Bio-degradable waste is deposited in land-fills and used as manure



C. Non-biodegradable waste is recycled to convert into useful chemicals

D. Green fuel is obtained from recycling of plastic waste which contains lead

**Answer: D**



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**25. The correct statements regarding green chemistry**

A. It is a cost effective approach that involves minimum chemical usage, minimum waste generation

B. It involves not to produce green house gases like  $CH_4$ ,  $CO_2$

C. It works for not producing wasteful by products in the process

D. All

**Answer: D**



[Watch Video Solution](#)

26.  $O_2^+$ ,  $NO^+$  are present in

- A. troposphere
- B. stratosphere
- C. Acid rain
- D. thermosphere

**Answer: D**



[Watch Video Solution](#)

27. Which of the following is viable particulates

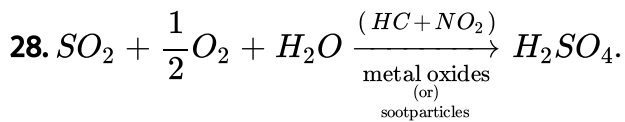
- A. Fungus
- B. pulverised coal
- C. Herbicides

D. moulds

**Answer: D**



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A.  $Mn^{2+}$

B.  $Fe^{2+}$

C.  $Ni^{2+}$

D.  $Cu^{+}$

**Answer: D**



**Watch Video Solution**

29. Which of the following is carcinogenic?

A. Benzopyrene

B.  $O_3$

C.  $CH_4$

D.  $CO_4$

**Answer: A**



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**30. Carcinogens which can cause**

A. malaria

B. respiratory illness

C. chlorosis

D. minamata

**Answer: B**



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LEVEL - I (EXERCISE -I) (Definition of terms , Introduction , Environmental segments - Air pollution , Water pollution)

1. Identify the secondary pollutant among the following.

A.  $CH_4$

B. peroxy acetyl nitrate

C.  $SO_2$

D. No

Answer: B



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2. Which of the following is/are primary pollutant,,

(A) Ozone (B)  $SO_2$  (C)  $SO_3$  (D)  $NO_2$  PBN

A. A,C and E

B. B and D

C. A, B and D

D. C, D ,E

**Answer: B**



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**3. Which of the following is a primary pollutant?**

A. Sulphuric acid

B. acrolein

C. formaldehyole

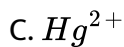
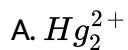
D. Carbon monoxide

**Answer: D**



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4. Which of the following is most toxic ?



D. methyl mercury

**Answer: D**



**Watch Video Solution**

5. In which of the following region of atmosphere, lowest temperatures are observed ?

A. troposphere

B. stratosphere

C. mesosphere

D. thermosphere

**Answer: C**



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6. Four samples of water A, B, C and D have the D.O. levels of 4 ppm, 3.8 ppm, 2.1 ppm and 4.9 ppm respectively. The most polluted sample of water is

A. D

B. B

C. C

D. A

**Answer: C**



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7. Identify the incorrect statement

- A. Plants and sea water are receptors of  $CO_2$
- B. Microorganism acts as sink for dead plants and animals.
- C. Methyl isocyanate and DDT are contaminants.
- D. Pb, Hg,  $CO_2$  and  $SO_2$  are pollutants

**Answer: A**



**Watch Video Solution**

8. Gradual warming of the atmosphere due to trapping of radiation of long wavelength is called

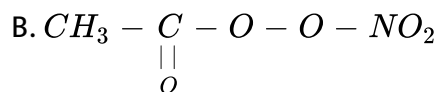
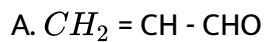
- A. air pollution
- B. depletion of ozone layer
- C. photosynthesis
- D. green house effect

**Answer: D**



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**9. Composition of PAN is**



**Answer: B**



**Watch Video Solution**

**10. Match the following**

List-I

- (A) Biodegradable pollutant
- (B) Non-biodegradable pollutant
- (C) Viable particulate sewage
- (D) Non-viable Particulate

List-II

- (1) MIST
- (2) Algae
- (3) Domestic
- (4) Plastic

A. 

A	B	C	D
3	4	2	1

B. 

A	B	C	D
1	2	4	3

C. 

A	B	C	D
4	3	1	2

D. 

A	B	C	D
3	4	1	2

**Answer: A**



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**11. Among the following which is a conrnminent**

A.  $SO_2$

B. Pb

C. Methylmercury

D.  $CO_2$

**Answer: C**



**Watch Video Solution**

12. Which of the following is contaminant responsible for Bhopal gas tragedy

A.  $CO_2$

B.  $SO_2$

C.  $CH_3NCO$

D.  $O_3$

**Answer: C**



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13. A substance which is not present in nature but added to atmosphere due to human activity and causes adverse effect on environment is called

- A. Pollutant
- B. Contaminant
- C. Sink
- D. Receptor

**Answer: B**



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14. Identification of a pollutant as organic, inorganic (or) organometallic origin is called

- A. Classification
- B. Categorization
- C. differentiation

D. Speciation

**Answer: D**



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**15.** The medium which reacts with pollutant is called

A. Sink

B. Receptor

C. Contaminant

D. Speciation

**Answer: A**



**Watch Video Solution**

**16.** The sink for dead plants and animals is

- A. Sea water
- B. River
- C. Microorganisms
- D. Atmosphere

**Answer: C**



**Watch Video Solution**

**17. Which of the following can act as sink for  $CO_2$  and  $SO_2$**

- A. aqKOH
- B. Plants
- C. Sea water
- D. Soil

**Answer: C**



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**18.** Water is said to be polluted if the D.O value of water is less than

A. 152 ppm

B. 4 ppm

C. 50 ppm

D. 100 ppm

**Answer: B**



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**19.** The amount of oxygen required for healthy growth of plants and animals in water is

A. 1-2 mg/ml

B. 4-6g/lit

C. 1-2g/100ml



D. 4-6mg/litre

**Answer: D**



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**20.** A good quality of water will have

A. high D.O.

B. high B.O.D

C. high C.O.D

D. High T.I.V

**Answer: A**



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21. The amount of oxygen required to oxidise organic substance present in water is called

- A. DO
- B. COD
- C. BOD
- D. TLV

**Answer: B**



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22. Chemical oxygen demand is determined by using

- A. Methylorgane
- B.  $K_2Cr_2O_7 + 50\% H_2SO_4$
- C.  $CaOCl_2 + 50\% H_2SO_4$
- D. Alum + CaO

**Answer: B**



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**23.** COD is a measure of

- A. Organic substances in water
- B. Oxides of S, P and N in air
- C. Inorganic pollutants in water
- D. Salinity of water

**Answer: A**



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**24.** The amount of oxygen used by micro organisms present in water for five days at  $20^{\circ}C$  is called

A. COD

B. DO

C. TLV

D. BOD

**Answer: D**



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**25.** Which of the following is a measure of bacteria present in water

A. DO

B. COD

C. BOD

D. TLV

**Answer: C**



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List-I

- (A) Pollutant but not contaminant  
(B) Contaminant in Bhopal gas tragedy  
(C) Receptor to smoke of automobiles  
(D) sink to dry leaves and garbage

List-II

- (I) Methyl isocyanate  
(II)  $CO_2$   
(III) Human eyes  
(IV) Microorganisms  
(V) Mercury

26.

A. 

A	B	C	D
IV	III	I	II

B. 

A	B	C	D
I	III	II	IV

C. 

A	B	C	D
II	I	III	IV

D. 

A	B	C	D
I	IV	III	II

Answer: C



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27. Which of the following does not indicate high level of pollutants or the toxic substances I) High DO value II) High COD value III) High BOO value IV) High TLV The correct combination is

A. All are correct

B. I and IV only

C. II and II only

D. III and IV only

**Answer: B**



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**28.** The study of toxicity of organo metallic compounds is termed as

A. classification

B. categorization

C. eutrophication

D. speciation

**Answer: D**



**Watch Video Solution**

29. (A): COD of water is determined by oxidising the organic matter with acidified (50%  $H_2SO_4$ ) potassium dichromate solution

(R) Greater the COD value of water greater is its pollution

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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30. The TLV values of four pollutants A, B, C and D are 9ppm, 10ppm, 100ppm and 500 ppm respectively. The most toxic amount among them is

A. A

B. B

C. C

D. D

**Answer: A**



**Watch Video Solution**

**31.** The region which is greatly affected by air pollution is

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Thermosphere

**Answer: A**



**Watch Video Solution**



**32.** The region which contains water vapour is

- A. Stratosphere
- B. Troposphere
- C. Mesosphere
- D. Thermosphere

**Answer: B**



**Watch Video Solution**

**33.** Solid component of the earth consisting of soil, rocks and mountains is called

- A. Hydrosphere
- B. Lithosphere
- C. Atmosphere

D. Biosphere

**Answer: B**



**Watch Video Solution**

**34.** Which of the following is a primary pollutant

A. CO

B. PNA

C. Aldehydes

D.  $H_2SO_4$

**Answer: A**



**Watch Video Solution**

**35.** The greatest affinity for haemoglobin is shown by

A. NO

B. CO

C.  $O_2$

D.  $CO_2$

**Answer: B**



**Watch Video Solution**

**36.** The most abundant hydrocarbon pollutant is

A. Ethane

B. Methane

C. Propane

D. Butane

**Answer: B**



**Watch Video Solution**

**37.** Ozonc layer is present in the region

- A. Troposphere
- B. Stratosphere
- C. Mesosphere
- D. Exosphere

**Answer: B**



**Watch Video Solution**

**38.** In which or the following region ionisation of gases takes place

- A. Troposphere
- B. Thermosphere
- C. Lithosphere

D. Stratosphere

**Answer: B**



**Watch Video Solution**

**39.** Heat balance on earth surface is maintained by circulation of air in

A. Troposphere

B. Hydrosphere

C. Lithosphere

D. Biosphere

**Answer: A**



**Watch Video Solution**

**40.** The extent of conversion of oxyhaemoglobin to carboxy haemoglobin depends on

- A. Concentration of CO in air
- B. time of exposure of the person to CO
- C. Both 1 & 2
- D. amount of haemoglobin in blood

**Answer: C**



**Watch Video Solution**

**41.** The level of CO gas in air that causes immediate death is

- A. 10 ppm
- B. 100 ppm
- C. 500 ppm
- D. 1000 ppm

**Answer: D**



**Watch Video Solution**

**42.** The source of  $CO_2$  in the atmosphere is

A. Combustion of fuel

B. Fermentation

C. Respiration

D. All the above

**Answer: D**



**Watch Video Solution**

**43.** Which is incorrect about 'green house effect'

A. It is due to high concentration of  $CO_2$  in atmosphere

- B. It is influenced by gases like  $CH_4$ ,  $O_3$  and CFCs
- C. It results in lowering of the level of oceans
- D. It results in warming up of the earth

**Answer: C**



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**44.** Global warming can be prevented by

- A. Constructing more dams on rivers
- B. Deforestation
- C. Growing more trees
- D. Carefully utilizing ground water

**Answer: C**



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45. The set of gases causing green house effect is

A.  $CO_2$ ,  $CO$ ,  $SO_2$ ,  $N_2$

B.  $CO_2$ ,  $CH_4$ ,  $O_3$ ,  $NO$

C.  $CH_4$ ,  $SO_2$ ,  $N_2$ ,  $O_2$

D.  $CO_2$ ,  $Br_2$ ,  $N_2$ ,  $O_2$

Answer: B



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46. Unimely and unusual rains are due to

A. Global wanning

B. Use of Jet planes

C. Increase in  $SO_2$  level

D. Depletion of Ozone layer

**Answer: A**



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**47.** Lung diseases are four times more in urban areas than in rural areas.

This is due to the presence of

A.  $SO_2$

B.  $CO_2$

C.  $N_2$

D. Steam

**Answer: A**



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**48.** The pH of acid rain may be

A. 8.2

B. 4.6

C. 6.5

D. 10.1

**Answer: B**



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**49.** Acid rains contain

A.  $\text{HCl}$

B.  $\text{HNO}_3$

C.  $\text{H}_2\text{SO}_4$

D.  $\text{HNO}_3 + \text{H}_2\text{SO}_4$

**Answer: D**



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50. The beauty of Tajmahal is getting destroyed due to

- A. global wanning
- B. photochemical reaction
- C. presence of CO gas in air
- D. acid rain

**Answer: D**



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51. Gases responsible for acid rain are

- A. No and  $NO_2$
- B.  $SO_2$  only
- C.  $NO_2$  and  $SO_2$

D.  $CO$  and  $CO_2$

**Answer: C**



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**52.** Gas commonly used in refrigerators is

A. T.E.L

B.  $C_8H_{18}$

C.  $CCl_2F_2$

D.  $CCl_3NO_2$

**Answer: C**



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**53.** CFC are used extensively, It is because

- A. They are reactive
- B. They are liquids
- C. They are gases
- D. They are cheap and stable

**Answer: D**



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**54.** The species formed in the depletion of ozone layer by chlorofluorocarbons in free radical mechanism is

- A.  $\text{ClO}^*$
- B.  $\text{F}^*$
- C.  $\text{O}_2\text{F}_2$
- D.  $\text{ClO}_2$

**Answer: A**



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55. Ozone is useful in \_\_\_\_\_ and harmful in \_\_\_\_

- A. Troposphere & Mesosphere
- B. Mesosphere & Troposphere
- C. Thermosphere & Stratosphere
- D. Stratosphere & Troposphere

**Answer: D**



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56. Carcinogenic pollutant among the following is

- A. CO
- B.  $SO_2$
- C. Benzopyrene

D. PAN

**Answer: C**



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**57.** The pollutant which deteriorates the plant cellulose

A. Benzopyrene

B. PAN

C. BHC

D.  $H_2SO_3$

**Answer: B**



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**58.** Wrong statement regarding 'London smog' is



- A. It is observed in season
- B. It is reducing in nature
- C. It is due to Carbon particles and  $SO_2$
- D. It observed when solar radiation is high

**Answer: D**



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**59. Smog is mainly due to**

- A. Oxides of sulphur & Carbon particles
- B. Oxides of Lead
- C. Oxides of carbon
- D. Oxides of Chlorine

**Answer: A**



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60. Which of the following pollutant is released from the emissioin tuhes of diesel engines

- A. Mercury
- B. Lead
- C. Benzopyrene
- D.  $CFCI_3$

**Answer: C**



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61. Which of the following are biodegradable pollutants

- A. Pesticides
- B. Domestic wastes
- C. Mercuric salts

D. Lead compounds

**Answer: B**



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**62.** A 50% increase of  $CO_2$  level in atmosphere causes

- A. The increase of surface temperature by  $3^\circ C$
- B. The increase of sea level by 7 meters
- C. The decrease of rate of evaporation of surface water
- D. The decrease in concentration  $CO_2$

**Answer: A**



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63. Which of the following does not contribute towards the formation or photochemical smog?

A. NO

B.  $SO_2$

C.  $O_3$

D. Hydrocarbons

**Answer: B**



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64. The aromatic compounds present as particulates are

A. Benzene

B. Toluene

C. Nitrobenzene

D. Polycyclic aromatic hydrocarbons

**Answer: D**



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**65.** Which of the following statements is false?

- A. Photochemical smog causes irritation in eyes
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN
- D. London smog is oxidising in nature

**Answer: D**



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**66.** Which of the following is a sink for CO ?

- A. Haemoglobin

B. Microorganisms present in the soil

C. Oceans

D. Plants

**Answer: B**



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**67. Depletion of ozone layer causes**

A. Blood cancer

B. Lung cancer

C. Skin cancer

D. Breast cancer

**Answer: C**



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68. Which of the following deplete ozonc layer?

A.  $SO_2$

B.  $CO_2$

C. CO

D. NO and freons

**Answer: D**



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69. UV radiation from sun causes a reaction That produces

A. Carbon monoxide

B. Sulphur dioxide

C. Fluorides

D. Ozone

**Answer: D**



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**70.** Chlorofluorocarbon releases which of the following chemical harmful to ozone ?

- A. Fluorine
- B. Chlorine
- C. Nitrogen dioxide
- D. Sulphur dioxide

**Answer: B**



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**71.** 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

**Answer: C**



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**72.** Ozone layer of stratosphere requires protection from indiscriminate use of

- A. Pesticides
- B. Atomic explosions
- C. Aerosols and high flying jets
- D. Balloons

**Answer: C**

List-I

List-2

(A) Major constituent (I)  $O_2$  and water vapour

73. (B) Minor constituent (II) Ar and  $CO_2$

(B) Minor constituent (III)  $N_2$

(C) Trace constituent (IV) He,  $N_2O$  and  $O_3$

The correct match regarding air

A.  $\begin{matrix} A & B & C \\ III & II & IV \end{matrix}$

B.  $\begin{matrix} A & B & C \\ I & III & IV \end{matrix}$

C.  $\begin{matrix} A & B & C \\ II & III & IV \end{matrix}$

D.  $\begin{matrix} A & B & C \\ IV & III & V \end{matrix}$

Answer: A

74. Which of the following statements are true regarding photochemical smog

It is oxidising in nature

It is formed when intensity of solar radiation is very high

It is formed by PRN, Ozone and oxides of nitrogen

It is formed by the particulate carbon and  $SO_2$

It is reducing in nature

A. A, B, and D

B. A, D and E

C. A, C and D

D. A, B and C

**Answer: D**



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**75.** (A) Acid rains have been reported in some places which are far away from the places where industries are located

(B) (R) : Rain clouds move away from industries.

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

**Answer: A**



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**76.** (A): Nowadays surface of the earth gets heated up.

(R):  $CO_2$  and water vapour partly reflects IR radiation back to earth's surface.

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

D. (A) is false but (R) is true

**Answer: A**



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77. (A): Holes in ozone layer are observed at the north and the south poles by scientists.

(R): UV radiation damages eyes causing cataract of eyes.

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

**Answer: B**



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78. (A): CO pollution is very high from 9AM to 10 AM in Urban areas

(R): Almost 80% CO is released from Automobiles

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

**Answer: A**



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79. Tajmahal is effected by

- A. CO
- B.  $SO_2$

C.  $\text{CaO}$

D.  $\text{CO}_2$

**Answer: B**



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**80. (A):** The pH of normal rain is 5.6.

(R)  $\text{CO}_2$  present in atmosphere absorbed in moisture to give  $\text{H}^+$  and  $\text{HCO}_3^-$

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

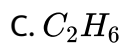
D. (A) is false but (R) is true

**Answer: A**



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81. Poisonous gas present in the exhaust fumes of an automobile is



Answer: D



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82. Which one of the following is mainly responsible for the depletion of ozone layer





C.  $H_2O$

D. CFC

**Answer: D**



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83.  $CFCl_3$  is responsible for the decomposition of ozone to oxygen.

Which of the following reacts with ozone to form oxygen>

A.  $Cl_2$

B.  $Cl^-$

C.  $F^-$

D.  $Cl\cdot$

**Answer: D**



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**84.** An object is located at a height of 5 km from the surface of the earth.

The object is located in which part of atmosphere?

A. Thermosphere

B. Mesosphere

C. Stratosphere

D. Troposphere

**Answer: D**



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**85.** Identify the correct decreasing order of the following with respect to altitude from atmosphere I) Troposphere II) Mesosphere III)

Thermosphere

A. II, III, I

B. III, II, I

C. I,II,III

D. I,III,II

**Answer: B**



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**86.** When organic substances undergo anaerobic degradation the product formed mainly is

A.  $CO_2$

B.  $H_2S$

C.  $CH_4$

D. NO

**Answer: C**



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87. The type of hybridisation of carbon atoms of the molecule of the gas involved in Bhopal gas tragedy

A.  $sp$ ,  $sp^2$

B.  $sp$ ,  $sp^3$

C.  $sp^3$ ,  $sp^3$

D.  $sp^2$ ,  $sp^3$

**Answer: B**



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88. The non-viable particulate is among the following is

A. Dust

B. Bacteria

C. Moulds

D. Fungi

**Answer: A**



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**89.** The loss or reduction of chlorophyll in the leaves is termed as

- A. Necrosis
- B. Chlorosis
- C. Epinasty
- D. Lichen

**Answer: B**



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**90.** The term not responsible for water pollution

- A. Industrial Revolution

B. Environmental friendly reactions

C. Blue Revolution

D. Over population

**Answer: B**



**Watch Video Solution**

**91.** The term not responsible for water pollution

A. Green revolution

B. Blue revolution

C. Industrial revoltion

D. Green chemistry

**Answer: D**



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92. Water pollution does not cause

- A. change in colour and salinity of water
- B. increased fish population
- C. decrease in quality of water
- D. uncontrolled growth of weeds in water

Answer: B



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93. The reagent used to detect fluoride present in water in

- A. Alum + CaO +  $CaOCl_2$
- B. Defluoron -I & II
- C. Zirconium - alizarin - S
- D. Calcium aluminium fluoride

**Answer: C**



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**94.** Which one of the following substances is used to reactivate the deactivated filters in activated carbon method for defluoridation ?

A. Defluoron -I

B.  $CaCOCl_2$ , lime and alum

C. 4% NaOH solution and then 1%  $H_3PO_4$  solution

D. 4% NaCl solution and then 5%  $H_2SO_4$  solution.

**Answer: C**



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**95. Match the following**

List-I

- (A)  $\text{NO}_3^-$  ion in drinking water 50 ppm causes decrease in dissolved oxygen  
(B)  $\text{SO}_4^{2-}$  ion is greater than 550 ppm causes laxative effect  
(C) Mercury poison causing blue baby syndrome  
(D) Domestic sewage

List-II

- (1) Dissolved oxygen  
(2) Minamita disease  
(3) Laxative effect  
(4) Blue baby syndrome

The correct match is

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	2	3	4

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	3	1	2

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	4	2	1

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	3	2	1

**Answer: D**



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**96.** Increase in concentration of pollutant by the process of food chains is called

- A. Eutrophication
- B. Bioamplification
- C. Defluoridation
- D. Biological oxidation

**Answer: B**



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**97. Eutrophication is mainly caused by**

- A. Food chains
- B. Chloroflorocarbons
- C.  $SO_2$  and  $CO_2$
- D. Nitrates and Phosphates

**Answer: D**



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**98.** Carcinogenic water pollutant is

- A. Volatile aromatic compounds
- B. non volatile aromatic compounds
- C. methane
- D. Formaldehyde

**Answer: B**



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**99.** The main source of phosphate pollution in water is

- A. oil pollutant
- B. pesticides
- C. sewage

D. sediments

**Answer: C**



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**100.** Which of the following is not an algal nutrient

A. Hg

B.  $PO_4^{3-}$

C.  $NO_3^-$

D.  $CO_2$

**Answer: A**



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**101.** Lakes containing excess of nutritious substance are called

- A. Polluted lakes
- B. Eutrophic lakes
- C. Dead lake
- D. Green Lake

**Answer: B**



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**102.** Which of the following decreases the dissolved oxygen in water

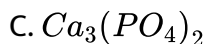
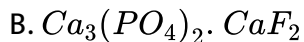
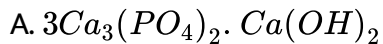
- A. Organic matter
- B. Flourides
- C. Carbonates
- D. Methyl Hg

**Answer: A**



**Watch Video Solution**

**103.** Formula of enamel on teeth is



**Answer: A**



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**104.** Water become useless for drinking purpose if the fluoride concentration exceeds

A. 10 ppm

B. 5 ppm

C. 3 ppm

D. 20 ppm

**Answer: C**



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**105.** In ion exchange method of defluoridation of water, which one of the following is used

A.  $CaOCl_2$

B. defluoron -I

C. defluoron -2

D. Both 2 and 3

**Answer: D**



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**106.** Disease caused by excess of flourides in water is

- A. Minamita
- B. Lung cancer
- C. Paralysis
- D. Fluorosis

**Answer: D**



**Watch Video Solution**

**107.** By using activated carbon method,  $F^-$  ion concentration in water can be decreased from

- A. 12ppm to 5pm
- B. 12ppm to 1ppm
- C. 15ppm to 10ppm
- D. 15ppm to 7ppm

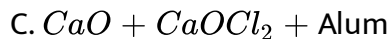
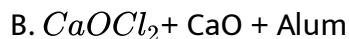
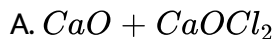


**Answer: B**



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**108.** In the Nalgonda method, chemicals used for defluoridation of water in correct order are



D. Any of the above

**Answer: B**



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**109.** Which of the following is used as "Bioremedies"

- A. Nitrates & phosphates
- B. Enzymes & microorganisms
- C. Sediments & oils
- D. Oxides of nitrogen

**Answer: B**



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**110.** 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)

**Answer: D**



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**111.** Domestic waste mostly constitutes

- A. Non-biodegradable pollutants
- B. Biodegradable pollutants
- C. Effluents
- D. Air pollutants

**Answer: B**



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**112.** DDT is

- A. A fertilizer
- B. Biodegradable pollutant
- C. Non-biodegradable pollutant

D. Greenhouse gas

**Answer: C**



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**113.** The suspected carcinogenic water pollutant is

A. MIC

B. methylated mercury

C. Tetrachloroethene

D. Volatile aromatic compounds

**Answer: C**



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**114.** Phosphate pollution is caused by

A. Weathering of phosphate rocks only

B. Agricultural fertilizers only

C. Phosphate rocks and sewage

D. Sewage and agricultural fertilizers

**Answer: D**



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**115.** Sewage water is purified by

A. Microorganisms

B. Light

C. Fishes

D. Aquatic plants

**Answer: A**



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**116.** Water is often treated with chlorine to

- A. Increase oxygen content
- B. Kill germs
- C. Remove suspended particles
- D. Remove hardness

**Answer: B**



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**117. (A):** Instead of using conventional fuels and energy systems, non-conventional fuels and non- conventional energy systems must be put into practice.

**(R):** Non-conventional fuels and non-conventional energy systems will cause more pollution.

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

**Answer: C**



**Watch Video Solution**

**118.** (A): Research must be carried in such a manner that there will not be any waste by product in the reactions.

(R) : The reaction which gives no by product is an environment friendly reaction.

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

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



**Watch Video Solution**

**119.** Faecal matter polluting drinking water causes

A. Fluorosis

B. Chlorosis

C. Jaundice

D. Minamata disease

**Answer: C**



**Watch Video Solution**



**120.** Correct statements of the following are

Fluorides can be detected by zirconium - alizarin S - dye

Harmless level of fluorides in water is upto 10ppm

In Nalgonda technique bleaching powder, lime and alum are added in the same order

Less than 3ppm of fluoride concentration can cause fluorosis

A. A and C

B. C and D

C. B and D

D. A and B

**Answer: A**



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**121.** Which of the following is not an air pollutant?

A.  $N_2$

B.  $N_2 O$

C. NO

D. CO

**Answer: A**



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**122.**

List-1

(A) Cu Zn from chromium plating industry

(B) Phosphate Nitrates sulphate

(C) Fluorides

(D) Cyanides  $H_2SCO_2$  Nitrogen oxides

List-2

(I) Eutrophication

(II) pH of water changes and

(III) Consumes dissolved oxygen

(IV) Bones and teeth are affected

(V) Affects human health and

The correct match is

A.  $\begin{matrix} A & B & C & D \\ I & IV & III & V \end{matrix}$

B.  $\begin{matrix} A & B & C & D \\ V & I & IV & II \end{matrix}$

- C.  $\begin{matrix} A & B & C & D \\ II & III & V & IV \end{matrix}$
- D.  $\begin{matrix} A & B & C & D \\ I & II & III & IV \end{matrix}$

**Answer: B**



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**123.** Biodegradable materials are

- A. Those which spoil the biological environment
- B. Those which are toxic
- C. Can be broken down by bacteria
- D. Used for converting waste to greenery

**Answer: C**



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**LEVEL - I (EXERCISE -I) (Definition of terms , Introduction , Environmental segments - Air pollution , Water pollution)(ASSERTION & REASON TYPE QUESTIONS)**

1. Assertion (A) : The temperature in the thermosphere increases with altitude.

Reason (R) : Ozone present in stratosphere absorbs ultraviolet radiation

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

**Answer: B**



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2. (A): Ionosphere contains gases in the ionised form which form the bases for wireless communication

(R): The ions reflect back the radio waves to the earth.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: A**



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3. Assertion (A) : Rain water normally has a pH of 5.6.

Reason (R) : The presence of  $H_2SO_4$  and  $HNO_3$  produced from the oxides of sulphur and nitrogen lower the pH of rain

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

**Answer: A**



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4. (A): Smaller particles (Size < 5 microns) cause fibrosis of the lung lining.

(R) : Smaller particles (Size < 5 microns) are more likely to penetrate into the lungs.

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

D. (A) is false but (R) is true

Answer: A



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LEVEL - I (EXERCISE-II) (Terms & segments , Air pollution , Water pollution , Soil Pollution Control of environmental pollution , Green Chemistry)

1.

List-1 Name of the region      List-2

(A) Mesosphere

(1)  $N_2$ ,  $O_2$ ,  $CO_2$ ,  $HO_2O$  Maintenance of beat

(B) Stratosphere

(2)  $O_3$  Prevents the u.v radiations reaching the c

(C) Troposphere

(3)  $O_2^+$ ,  $NO^+$  Non- propagation of sound wave

(D) Thermosphere

(4)  $O_2^+$ ,  $O^+$ ,  $NO^+$  Ionization of gases

The correct match is

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	2	4	1

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	2	1	4

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	1	2	4

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	3	4	2

**Answer: B**



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**2. Which of the following is a primary pollutant**

A.  $SO_2$

B.  $NO_2$

C. PAN

D.  $CO_2$

**Answer: C**



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**3. The density of air is maximum in**

A. Troposphere



B. Stratosphere

C. Mesosphere

D. Thermospbere

**Answer: A**



**Watch Video Solution**

**4. Which is not responsible for environmental pollution**

A. Industrialisation

B. Deforestation

C. Increase in population

D. Photosynthesis

**Answer: D**



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5. The type of bond formed by CO with haemoglobin of blood is

- A. Covalent
- B. Dative
- C. Ionic bond
- D. Van der Waals forces

**Answer: B**



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6. Russia wanted to ban supersonic jets because

- A. They travel with high speed
- B. They are prone to accidents
- C. Their cost is high
- D. The gases coming from jets deplete the ozone layer

**Answer: D**



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7. CFC's are effective scavengers for ozone due to

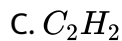
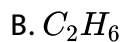
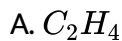
- A. Photolytic reaction of  $O_2$  producing Cl radicals
- B. Photolytic decomposition of  $O_3$  producing  $O_2$
- C. Photolytic decomposition of CFC's producing Cl radicals
- D. None of these

**Answer: C**



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8. When organic substance undergoes degradation through bacteria , the hydrocarbon formed is

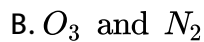


**Answer: D**

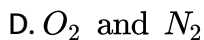


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**9.** The smog is essentially caused by presence of



C. Oxides of sulphur and nitrogen



**Answer: C**



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10. Which of the following statements about ozone layer is true ?

- A. Ozone layer is beneficial to us because ozone cuts out the ultraviolet radiation of the sun
- B. The conversion of Ozone to oxygen is an endothermic reaction
- C. Ozone is a triatomic linear molecule
- D. Ozone layer is harmful as it cuts out radiation useful for photosynthesis

**Answer: A**



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11. Which one of the following is mainly responsible for the depletion of ozone layer

- A. Methane

- B. Carbon dioxide
- C. Water
- D. Chlorofluro carbons

**Answer: D**



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**12. Which of the following is true**

- A. It occurs during warm weather
- B. It is reducing in nature
- C. It is a common feature over deserts
- D. It contain oxides of nitrogen

**Answer: B**



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13. Which of the following is not a non-viable particulates

- A. Smoke due to combustion of organic matter
- B. Pulvarised coal particles having the size 1 mm diameter
- C.  $H_2SO_4$  mist
- D. Fungi

Answer: D



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14. A  $\xrightarrow{O_3NO_2}$  PAN, then ratio of  $\sigma$  and  $\pi$  bonds in the starting substance "A" is

- A. 7:2
- B. 2:7
- C. 3:5
- D. 5:3

**Answer: A**



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**15.** Three samples of water A,B and C have the D.O. values  $1\text{mg/l}$  ,  $3\text{mg/l}$  , and  $5\text{ mg/l}$  respectively . The more polluted sample of water is

A. A

B. B

C. C

D. All are equal

**Answer: A**



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16.

List-I

Pollutant

(A)  $SO_4^{-2} > 550\text{ppm}$  baby syndrome

(B)  $(NO_3)^{-1} > 50\text{ppm}$

(C) lead and Hg

(D)  $CO_2, H_2, O_2, N_2, NO_3^{-1}, (PO_4)^{-3}, B, Cl, Cu$

List-2

Effect

(1) Causes disease blue

(2) Damage to kidney, l

(3) Eutrophication of tl

(4) Causes laxative ef

The correct match is

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	1	2	3

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	1	3	2

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	2	3	4

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	3	2	1

Answer: A



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17. 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	4) Erosion of soil by strip mining
	5) Detergents

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	1	4	2

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	5	3	1

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	3	2	4

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	2	1	5

**Answer: A**



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**18.** Chief source of soil and water pollution is

A. Agro industry

B. Thermal power plant

C. Mining

D. All the above

**Answer: D**



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**19.** Fish die in water bodies polluted by sewage due to

A. Pathogens

B. Foul smell

C. Decrease in D.O. below 4ppm

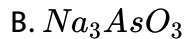
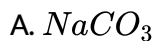
D. Clogging of gills by silt

**Answer: C**



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20. Herbicides are



C. Both 1 & 2

D. DDT

Answer: C



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21. (A) : Instead of pesticides, herbicides like  $NaClO_3$ ,  $Na_3AsO_3$  are used in agriculture sector.

(R) : The fields sprayed with herbicides are more easily attacked by insects and plant diseases

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

**Answer: B**



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**22. Correct statement regarding industrial waste**

A. It is bio degradable

B. It is mostly non biodegradable

C. It causes air pollution only

D. It causes soil pollution only

**Answer: B**



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**23.** Which one of the following can be recycled ?

- A. Garbage
- B. DDT
- C. Plastic
- D. Nuclear waste

**Answer: C**



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**24.** Which pollutant can be used as fertiliser

- A. Vegetable waste
- B. plastic waste
- C. Nuclear waste

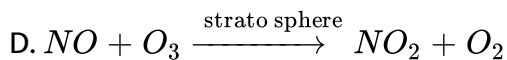
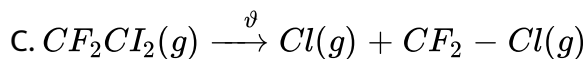
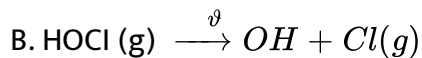
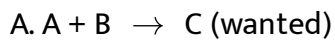
D. D.D.T

Answer: A



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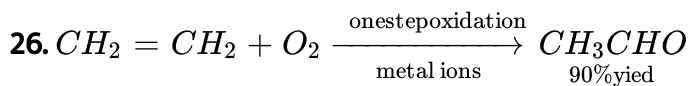
25. Which of the following is environmental friendly reaction



Answer: A



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Oxidation states of metal ions used

A. +2, +4

B. +2, +2

C. -2, -3

D. +2, -3

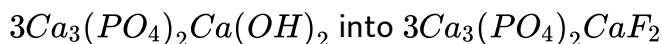
**Answer: D**



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27. (A): Concentration of soluble  $F^-$  ions in drinking water about 1 ppm is essential.

(R) Enamel on teeth is made much harder by converting hydroxyapatite



A. Both (A) and (R) are true and (R) is the correct explanation of (A)



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

**Answer: A**



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**28.** 100 ml of sample of water requires 3.92 mg of  $K_2Cr_2O_3$  in presence of  $H_2SO_4$  for the oxidation of dissolved organic matter present in it. The COD of the water sample in ppm

- A. 78.4 ppm
- B. 1.6 ppm
- C. 3.2 ppm
- D. 6.4 ppm

**Answer: B**



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**29.** A sample of pond water containing 20mg of organic matter requires 16 mg of dissolved oxygen. (Pond water contains 10mg of organic matter per 2 litres). It's BOD is

A. 4000 ppm

B. 400ppm

C. 4 ppm

D. 40 ppm

**Answer: C**



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**30.** Which of the following statements is false?

- A. Photochemical smog causes irritation in eyes
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN
- D. London smog is oxidising in nature

**Answer: D**



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31. A,B,C and D are four 100-mL samples of water. Fluoride ion concentrations in these samples are 2, 5, 8 and 12 ppm respectively. One drop of alizarine - S dye is added to each of these samples. The order of intensity of pink colour in these water samples is

A.  $A > B > C > D$

B.  $D > C > B > A$

C.  $A < B = C < D$

D.  $A = B = C = D$

**Answer: A**



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**32.** Some statements regarding air pollution are given. Among them, the correct statements are

- (a) Above 80% of CO is released from automobiles.
- (b) in urban areas, at the peak time of the traffic the level of CO is 100 to 500ppm
- (c) If the percentage of CO-Hb in the blood is 32% it causes immediate death
- (d) TLV of CO in the atmosphere is 9ppm

A. All one correct

B. Only a,b and d

C. Only a and d

D. Only b, c and d

**Answer: B**



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**33.**  $10^{-3}$  gm equivalents of  $K_2Cr_2O_7$  in 50%  $H_2SO_4$  is needed to oxidise all the organic matter present in 1 lit of water. Then COD of water is

A. 1 ppm

B. 10 ppm

C. 12 ppm

D. 8 ppm

**Answer: D**



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**34.** Green house gases radiate back the following radiations to the earth surface

- A. U.V
- B. Cosmic
- C. Infrared
- D. Gamma rays

**Answer: C**



**Watch Video Solution**

**35. (A):** Photo chemical smog is Oxidising in nature

**(R):** Photo chemical smog is formed due to the combustion of coal and petroleum products

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

**Answer: C**



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**36.** In the treatment of domestic sewage water, the weight of oxygen that can be required to oxidise 10mg of carbon is

A. 2.67 mg

B. 26.7 mg

C. 5 g

D. 10g

**Answer: B**



**Watch Video Solution**

**37.** Which of the following is not the effect of acid rain

- A. The glossy nature of Tajmahal is affected
- B. The  $P^H$  of the soil increases
- C. Historical monuments of Rome are affected
- D. Soil fertility decreases.

**Answer: B**



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**38.** The BOD values of four samples of water A,B,C and D are 165 ppm. 120ppm, 20ppm and 5ppm respectively . The most polluted and least polluted water sample are

- A. A&B
- B. B&C
- C. C&D
- D. A&D



**Answer: D**



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**39.** When rain is accompanied by a thunderstorm, the collected rain water will have a pH value

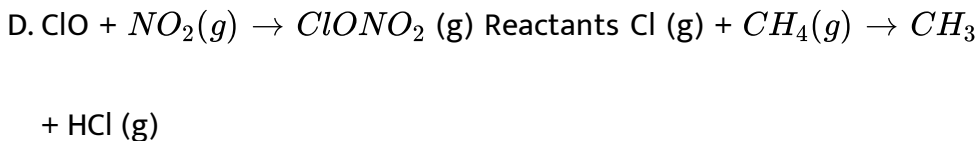
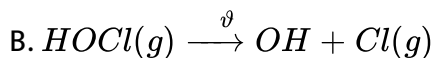
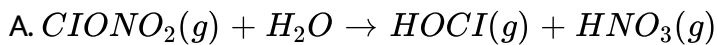
- A. uninfluenced by occurrence of thunderstorm
- B. which depends on the amount of dust in air
- C. slightly lower than that of rain water without thunderstorm
- D. slightly higher than that when the thunderstorm is not there.

**Answer: C**



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**40.** Which of the following reaction causes depletion of ozone layer in summer season.



**Answer: D**



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**41.** A sample of pond water contains 40mg of organic matter requires 32mg of dissolved oxygen. If pond water contains 100mg of organic matter per two litres, BOD value of the water sample is.

A. 10 ppm

B. 30 ppm

C. 20 ppm

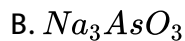
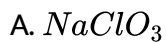
D. 40 ppm

Answer: D



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42. Nerve toxins are



C. Organophosphates

D. Rodenticides

Answer: C



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43. Which is incorrectly matched?

- |    | Disease       | Cause  |
|----|---------------|--|
| A. | (1) Fluorosis | $\text{Flu}$ or $\text{ides} \in \text{water}$ |

- |    |                |                          |
|----|----------------|--------------------------|
|    | Disease        | Cause                    |
| B. | (2)Minamata    | Mercury in fishing water |
|    | Disease        | Cause                    |
| C. | (3)chlorosis   | $NO_2$                   |
|    | Disease        | Cause                    |
| D. | (4)Skin cancer | Ozone hole               |

**Answer: C**



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**44.** Modes of controlling pollution in large cities include

- A. Less use of insecticides
- B. Proper disposal of organic wastes, sewage and industrial effluents
- C. Shifting of factories out of the residential area
- D. All the above

**Answer: D**



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45. TLV values of four pollutants A,B,C and D are 2ppm, 9 ppm, 20 ppm and 50 ppm. Among these four pollutants which one is the most toxic pollutant ?

A. A

B. B

C. C

D. D

**Answer: A**



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46. 100 ml of sample of water requires 3.92 mg of  $K_2Cr_2O_3$  in presence of  $H_2SO_4$  for the oxidation of dissolved organic matter present in it. The COD of the water sample in ppm

A. 3.1

B. 6.4

C. 12.4

D. 8.2

**Answer: B**



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**47.** COD of a water sample is 8ppm the weight of acidified  $K_2Cr_2O_7$  required to oxidise the organic matter present in one litre of water sample is

A. 98 mg

B. 49 mg

C. 196 mg

D. 98 g

**Answer: B**



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**48.** Proper management of disposal of household and industrial wastes can be done by

- A. Recycling the waste material to give useful products again
- B. Burning (Incineration)
- C. Sewage treatment
- D. All the above

**Answer: D**



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## LEVEL-II (LECTURE SHEET)SECTION -A : MORE THAN ONE CORRECT ANSWER TYPE QUESTIONS

**1.** Particulates are added to the atmosphere by :

A. industrial processes

B. combustion of fuels

C. agriculture burning

D. photosynthesis

**Answer: A::B::C**



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**2. The following processes occur in the troposphere**

A. photosynthesis

B. combustion

C. greenhouse effect

D. acid rain

**Answer: A::B::C::D**



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3. The gases which are absorbers of IR radiation

- A. oxygen
- B. nitrogen
- C. carbon dioxide
- D. chlorofluorocarbons

**Answer: C::D**



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4. The gases which are responsible for photochemical smog are :

- A. oxides of nitrogen
- B. hydrocarbons
- C. carbon monoxide

D. inert gases

**Answer: A::B::C**



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**5. Gases responsible for acid rain are**

A. oxides of nitrogen

B. oxides of sulphur

C. hydrocarbons

D. carbon monoxide

**Answer: A::B**



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**6. Pollution can be controlled if :**

- A. all automobiles must be fitted with exhaust system catalytic converters
- B. use of fossil fuels must be minimised and non-conventional energy sources should be developed
- C. emphasis on green chemistry is given
- D. population is stabilised

**Answer: A::B::C::D**



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7. If the greenhouse effect or global warming remains unchecked, it alters :

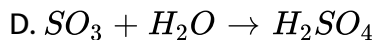
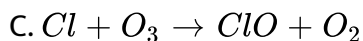
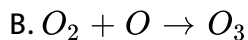
- A. sea, levels
- B. ozone layer
- C. rainfall
- D. temperature

**Answer: A::C::D**



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**8. The following reactions occur in the stratosphere:**



**Answer: A::B::C**



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**9. Identify the correct statement in the following :**

A. acid rain is mostly because of oxides of nitrogen and sulphur

- B. chlorofluorocarbons are responsible for ozone layer depletion
- C. greenhouse effect is responsible for global warming
- D. ozone layer does not permit infrared radiation from the sun to reach the earth

**Answer: B::C::D**



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**10. Which of the following is (are) not an air pollutant (s)**

- A. CO
- B.  $SO_2$
- C. NO
- D.  $N_2$

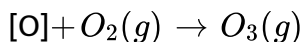
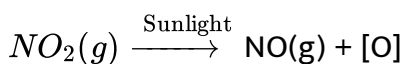
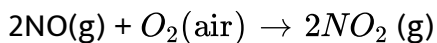
**Answer: A::B::C**



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LEVEL-II (LECTURE SHEET) (SECTION-B : LINKED COMPREHENSION TYPE QUESTIONS)

1. Nitric oxide (NO) is the nucleus of photochemical smog.



Both  $\text{NO}_2$  and  $\text{O}_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be suppressed by certain compounds, which act as free radical trap.

Which are the primary constituents of photochemical smog ?

A.  $\text{SO}_2$  and  $\text{CO}$

B.  $\text{NO}_2$  and hydrocarbons

C.  $CO_2$  and  $NO_2$

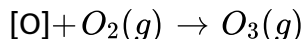
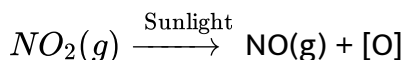
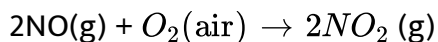
D. Hydrocarbons and CFCs

**Answer: B**



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2. Nitric oxide (NO) is the nucleus of photochemical smog.



Both  $NO_2$  and  $O_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be suppressed by certain compounds, which act as free radical trap.

Photochemical transformation of the automobile exhaust emission in UV wavelength of sunlight results into

A.  $CH_4$  and  $C_6H_6$

B.  $O_3$  and PAN

C.  $CO_2$  and  $NO_2$

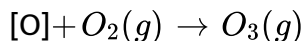
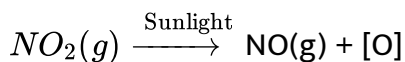
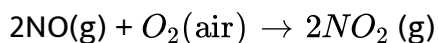
D.  $CO$  and  $CO_2$

**Answer: B**



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**3.** Nitric oxide (NO) is the nucleus of photochemical smog.



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suppressed by certain compounds, which act as free radical trap.

Smog is common pollutant in places having :

- A. high temperature
- B. low temperature
- C. excessive ammonia in the air
- D. excessive sulphur dioxide in the air

**Answer: A**



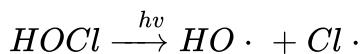
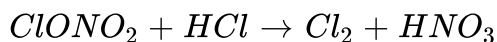
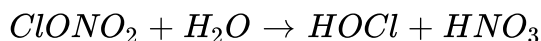
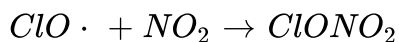
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4. Ozone layer acts as one of the most important life support system. The major cause of ozone layer destruction is believed to be the release of chlorofluorocarbon compounds. UV radiation causes the chlorofluorocarbons to dissociate :  $CF_2Cl \xrightarrow{h\nu} Cl\cdot + CF_2Cl$  A highly reactive chlorine atom is responsible for the decomposition of ozone.

$$Cl\cdot + O_3(g) \rightarrow ClO\cdot + O_2(g)$$
$$ClO\cdot + O_2(g) \rightarrow Cl\cdot + O_2(g)$$

Free radicals of chlorine decompose ozone molecules in a chain reaction. The

depletion of ozone layer leading to ozone hole has, however, been mainly observed in the stratosphere over Antarctica. Special type of cloud called polar stratospheric clouds are formed over Antarctica. These clouds (contain solid  $HNO_3 \cdot 3H_2O$ ) play an important role in ozone depletion.



The reactive chlorine atoms thus formed are rendered to deplete ozone layer.

The ozone layer is present in :

- A. troposphere
- B. stratosphere
- C. mesosphere
- D. thermosphere

**Answer: B**



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5. Depletion of ozone layer causes

- A. acid rain
- B. greenhouse effect
- C. global warming
- D. the UV radiation reach to carth

**Answer: D**

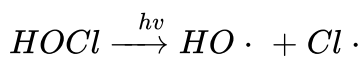
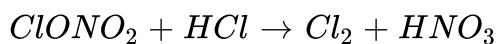
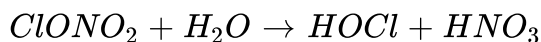
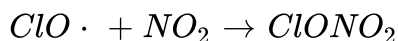


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6. Ozone layer acts as one of the most important life support system. The major cause of ozone layer destruction is believed to be the release of chlorofluorocarbon compounds. UV radiation causes the chlorofluouocarbons to dissociate :  $CF_2Cl \xrightarrow{h\nu} Cl \cdot + CF_2CI$  A highly reactive chlorine atomis responsible for the decomposition of ozone.



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The reactive chlorine atoms thus formed are rendered to deplete ozone layer.

Peeling of ozone umbrella, which protects us from UV rays is caused by:

A. PAN

B.  $CO_2$

C. CFCs

D. coal burning

**Answer: C**

LEVEL-II (LECTURE SHEET) (SECTION - C : MATCHING/STRAIGHT OBJECTIVE TYPE QUESTIONS)

1. Match the following

Column-I

Column-II

(A) Water vapour

(P) pH 5.6

(B) Rain water

(Q) sink for  $CO_2$

(C) Marble building

(R) Greenhouse gas

(D) Plants

(S) Receptor

2. Match the following

Column-I

Column-II

(A)  $H_2SO_4$

(P) Stratosphere

(B)  $O_3$

(Q) Coal mines

10 – 50km

(R) Bhopal gas tragedy

(D) MIC

(S) Acid rain

1. The Tolerable limit of fluoride is \_\_\_\_\_ ppm.



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2. The pH value of less than \_\_\_\_\_ causes harmful effects of acid-polluted water



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3. The BOD of pure water is \_\_\_\_\_ ppm.



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4. The COD of pure sample of water is \_\_\_\_\_ ppm.



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5. How many are the correct statements among the following?

Troposphere is the major portion of atmosphere.

.Stratosphere the region in which mainly ozone layer is present

.Sound waves cannot propagate in mesosphere.

.In mesosphere temperature falls with an increase in the altitude.

. Thermosphere is the region where the temperature increases with increase in altitude.

In thermosphere gases ionise by absorbing solar radiations.



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6. Beyond  $2x$  ppm the oxides of nitrogen can affect the plants, which cannot perform photosynthesis. The value of  $x$  is \_\_\_\_



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7. Among the following, the air pollutants are \_\_\_\_\_

$CO$ ,  $CO_2$ ,  $N_2$ ,  $O$ ,  $NO$ ,  $SO_2$ ,  $O_3$ ,  $CH_4$



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## PRACTICE SHEET (SECTION-A: MORE THAN ONE CORRECT ANSWER TYPE QUESTIONS)

1. Man made sources of air pollution are ?

A. Population increase

B. Deforestation

C. War

D. Pollen grains

Answer: A::B::C



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2. Natural sources of air pollution are ?

- A. Volcanic eruptions
- B. Forest fires
- C. Vegetation decay
- D. Automobile exhausts

**Answer: A::B::C**



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3. Regions of the atmosphere showing decrease in temperature with altitude are \_\_\_

- A. Troposphere
- B. Mesosphere
- C. Stratosphere
- D. Thermosphere

**Answer: A::B**



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**4. Peeling of ozone umbrella, which protects us from UV rays is caused by:**

A. PAN

B. Freons

C.  $CO_2$

D. NO

**Answer: B::D**



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**5. Which of the following are wrong statements ?**

A. NO is more harmful than  $NO_2$

- B.  $SO_2$  is more harmful than  $SO_3$
- C. Acid rain contains mainly  $HNO_3$
- D. Acid rain contains mainly  $H_2SO_4$  and lesser concentrations of  $HNO_3$  and HCl.

**Answer: A::B::C**



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**6. Pick up the incorrect statement(s) ?**

- 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 where as the classical smog occurs in early morning hours

D. During formation of smog the level of ozone in the atmosphere goes down.

**Answer: A::B::D**



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7. Identify the correct statement(s) in the following ?

- A. Acid rain is mostly because of oxides of nitrogen and sulphur.
- B. Chlorofluorocarbons are responsible for ozone layer depletion
- C. Greenhouse effect is responsible for global warming
- D. Ozone layer does not permit infrared radiations from the sun to reach the earth.

**Answer: A::B::C**



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8. Which of the following is green house gas and also causes depletion of ozone layer

A.  $CO_2$

B.  $CH_4$

C.  $O_3$

D.  $CCl_2F_2$

**Answer: A::B::C::D**



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9. DDT is

A. organic pollutant

B. halogenated compound

C. It contain two Benzene rings and 5 halogen atoms

D. It replace by Aldrin in pestisides to decrease water pollution

**Answer: A::B::C::D**



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**10. Which of the following statements are true ?**

- A. Mercury poisoning causes a disease called minamata.
- B. Quality water should be clear and turbidity should be less than 100 ppm.
- C. The  $F^-$  ions make the enamel on teeth much harder.
- D. Excessive lead cause toxic to heart.

**Answer: A::B::C**



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**PRACTICE SHEET (SECTION -B : LINKED COMPREHENSION TYPE QUESTIONS)**

1. Atmosphere, hydrosphere, lithosphere and biosphere are the four main segments of the environment. Atmosphere is a cover of gases that extends to a height of about 1600 km above the surface of the earth and protects the life on the earth from harmful radiations coming from the sun or the outer space. Atmosphere is further divided into four regions such as troposphere, stratosphere, mesosphere and thermosphere. Hydrosphere forms that part of the environment which contains water. Lithosphere is the solid component of the earth consisting of soil, rocks, mountains etc. Biosphere is that part of the above segments where living organisms interact with these parts and live together.

Which of the following is the coldest region ?

- A. Mesosphere
- B. Troposphere
- C. Stratosphere
- D. Thermosphere

**Answer: A**





2. Atmosphere, hydrosphere, lithosphere and biosphere are the four main segments of the environment. Atmosphere is a cover of gases that extends to a height of about 1600 km above the surface of the earth and protects the life on the earth from harmful radiations coming from the sun or the outer space. Atmosphere is further divided into four regions such as troposphere, stratosphere, mesosphere and thermosphere. Hydrosphere forms that part of the environment which contains water. Lithosphere is the solid component of the earth consisting of soil, rocks, mountains etc. Biosphere is that part of the above segments where living organisms interact with these parts and live together.

Hydrogen and Helium are found in which of the following regions ?

- A. Mesosphere
- B. Exosphere
- C. Troposphere
- D. Stratosphere



**Answer: B**



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3. Atmosphere, hydrosphere, lithosphere and biosphere are the four main segments of the environment. Atmosphere is a cover of gases that extends to a height of about 1600 km above the surface of the earth and protects the life on the earth from harmful radiations coming from the sun or the outer space. Atmosphere is further divided into four regions such as troposphere, stratosphere, mesosphere and thermosphere. Hydrosphere forms that part of the environment which contains water. Lithosphere is the solid component of the earth consisting of soil, rocks, mountains etc. Biosphere is that part of the above segments where living organisms interact with these parts and live together.

The biotic component of the environment is

A. Lithosphere

B. Biosphere

C. Hydrosphere

D. Atmosphere

**Answer: B**



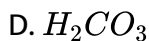
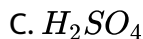
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4. Tropospheric pollution is caused by gaseous air pollutants as well as particulate pollutants. Among the gaseous air pollutants, oxides of sulphur ( $SO_x$ ) oxides of nitrogen ( $NO_x$ ) and carbon monoxide play an important role towards pollution. Formation of acid rain and photochemical smog, green house effect and global warming all are the result of various chemical and photochemical reactions taking place in the environment. Various particulates including viable and non-viable are also responsible for causing serious air pollution.

Which of the following has largest concentration in acid rain ?

A.  $HNO_3$

B. HCl



**Answer: C**



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5. Tropospheric pollution is caused by gaseous air pollutants as well as particulate pollutants. Among the gaseous air pollutants, oxides of sulphur ( $SO_x$ ) oxides of nitrogen ( $NO_x$ ) and carbon monoxide play an important role towards pollution. Formation of acid rain and photochemical smog, green house effect and global warming all are the result of various chemical and photochemical reactions taking place in the environment. Various particulates including viable and non-viable are also responsible for causing serious air pollution.

Which of the following does not contribute towards the formation of photochemical smog ?

A. NO

B.  $SO_2$

C.  $O_3$

D. Hydrocarbons

**Answer: D**



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6. Tropospheric pollution is caused by gaseous air pollutants as well as particulate pollutants. Among the gaseous air pollutants, oxides of sulphur ( $SO_x$ ) oxides of nitrogen ( $NO_x$ ) and carbon monoxide play an important role towards pollution. Formation of acid rain and photochemical smog, green house effect and global warming all are the result of various chemical and photochemical reactions taking place in the environment. Various particulates including viable and non-viable are also responsible for causing serious air pollution.

The aromatic compounds present as particulates are

A. Benzene

B. Toluene

C. Nitrobenzene

D. Polycyclic aromatic hydrocarbons

**Answer: D**



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## PRACTICE SHEET (SECTION- C : MATCHING/STRAIGHT OBJECTIVE TYPE QUESTIONS)

### 1. Match the following

Column-I

Column-II

(A)  $SO_2$

(P) secondary pollutant

(B) PAN

(Q) odegadable

(C) Cow dung

(R) Non-biodegradable

(D) DDT

(S) Primary pollutant



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## 2. Match the following

### Column-I

- (A) Air pollution
- (B) water pollution
- (C) Soil pollution
- (D) White lung disease

### Column-II

- (P) Pb
- (Q) Textile workers
- (R)  $NO_2$
- (S) Acid rain



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## PRACTICE SHEET (SECTION- D : SUBJECTIVE TYPE QUESTIONS )

1. The TLV of CO is \_\_\_\_ppm.



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2. Among the following how many are pollutants ?

Carbonmonoxide, nitric oxide, sulphur dioxide, mercury vapour.



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3. Total number of  $\pi$  bonds in the contaminant, MIC, which is responsible for Bhopal gas Tragedy is \_\_\_\_.



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4. The amount of oxygen (in grams) present dissolved in  $10^x$  gm of water is called dissolved oxygen. Then the value of x is \_\_\_\_.



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5. DO value of a water sample is 6 ppm. The weight of dissolved oxygen present in 100 kg of water sample is  $x \times 10^{-1}$  gm. Then the value of x is \_\_\_\_.



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6. 100 ml of a sample of water requires 1.96 mg of potassium dichromate in the presence of 50%  $H_2SO_4$  for the oxidation of dissolved organic

matter in it. The chemical oxygen demand is  $8x \times 10^{-1}$  ppm. The value of x is \_\_\_\_\_.



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7. Among the following, find the number of correct statements?

Sea water and trees are big sinks for carbon dioxide.

Greater the chemical oxygen demand (COD) and biochemical oxygen demand (BOD) values, greater is the extent of pollution.

Lesser the threshold limit value (TLV), greater the toxicity

Ozone layer present in stratosphere acts as protective umbrella from harmful sunrays.

Fluoride ion in drinking water is detected by using zirconium alizarin - S dye. The dye loses its colour in the presence of fluoride.

Human ear can tolerate the sound up to the intensity 60 decibels.



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1. Dissolved oxygen values of four water samples A, B, C and D are respectively 6 ppm, 5 ppm, 1 ppm and 3 ppm. Which is more polluted?



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2. Biochemical oxygen demand values of four water samples P, Q, R and S are respectively 100 ppm, 50 ppm, 150 ppm and 10 ppm. Arrange them in the descending order of their purity.



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3. 100 ml of a sample of water requires 1.96 mg of potassium dichromate in the presence of 50%  $H_2SO_4$  for the oxidation of dissolved organic matter in it. Calculate the chemical oxygen demand.



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4. DO value of a water sample is 6 ppm. Calculate the weight of dissolved oxygen present in 100 kg of water sample.



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5. Threshold limit value of three pollutants X, Y and Z are respectively 9 ppm, 20 ppm and 5 ppm. Which one is the most toxic ?



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6. The COD value of a water sample is 40 ppm. Calculate the amount of acidified  $K_2Cr_2O_7$  required to oxidise the organic matter present in 500 ml of that water sample.



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7. How are oxides of nitrogen harmful to ozone concentration?



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8. Ozone is harmful in the environment sigment .r. but it is useful in the environment sigment .y.. What are r and y?



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9. Freons are boon to industry, but curse to environment. Justify.



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10. How does chlorine is harmful to ozone layer ?



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11. Fluoride can not be removed by ion-exchange method. Why?



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12. How does sulphide and carbonates present in water toxic ?



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### SUBJECTIVE EXERCISE - 1 (Long answer questions)

1. Define the following terms and give two examples each.

a) Pollutant b) Contaminant

c) Sink d) Receptor and

e) Speciation



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2. Write about the environmental segments.



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## SUBJECTIVE EXERCISE - 1 (Short answer question )

1. What are DO, COD and BOD ?



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## SUBJECTIVE EXERCISE - 1 (Very short answer question )

1. Name the important sinks of carbon dioxide.



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2. How is TLV useful to determine pollution?



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3. Why is the environment getting polluted ?





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4. Name any four Pollutants



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### SUBJECTIVE EXERCISE - 2 (Long answer question )

1. What are air pollutants? How are they causing air pollution?



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2. How do the substances CO, NO,  $SO_2$  and CFCs pollute atmosphere .



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3. How is global warming taking place? What are its effects? Suggest the ways to prevent it.



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## SUBJECTIVE EXERCISE - 2 (Short answer question )

1. How do acid rains occur? What are the effects of acid rains?



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2. Ozone is a pollutant and protector to the environment.. Discuss.



**Watch Video Solution**

3. Explain the reaction of chlorofluorocarbons with ozone.



**Watch Video Solution**

4. Pollution is increased by deforestation. Justify.



**Watch Video Solution**

5. How can you prevent green house effect by growing plants?



**Watch Video Solution**

6. Why is the environment getting polluted ?



**Watch Video Solution**

7. Temperature of earth increasing. Why?



**Watch Video Solution**



8. In which segment of atmosphere, ozone is present? What is the advantage of ozone layer?



**Watch Video Solution**

9. What is acid rain? How is it formed?



**Watch Video Solution**

10. What is photochemical smog? What are its consequences?



**Watch Video Solution**

11. The result of ozone hole is



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## SUBJECTIVE EXERCISE - 2 (Very short answer question )

1. What is the effect of carbon monoxide on human beings?



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2. Name the green house gases.



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3. CFCs are bone to industry but a curse to environment. Discuss.



[Watch Video Solution](#)

4. What is the harm caused by CFCS



[Watch Video Solution](#)

5. Name the important sinks of carbon dioxide.



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6. How is CO released into atmosphere?



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### SUBJECTIVE EXERCISE - 3 (Long answer question )

1. What happens when water is polluted ? Name the diseases caused by water pollution.



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2. Discuss the pollution due to industrial wastes.



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3. Write the strategies of pollution control.



**Watch Video Solution**

4. Discuss soil pollution.



**Watch Video Solution**

5. How is fluoride detected ?



**Watch Video Solution**

6. Discuss on the development of green chemistry.



**Watch Video Solution**

1. Suggest some methods to minimise pollution due to industrial waste



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2. Explain the types of industrial wastes



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3. Write about the inorganic pollutants.



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4. Water pollution depends on the nature of industry. Give examples.



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5. What is the tolerable concentration of  $F^-$  ions in water ?



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### SUBJECTIVE EXERCISE - 3 (Very short answer question )

1. What is bioamplification ?



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2. Write critical notes on the following:

(a) Eutrophication

(b) Biological magnification

(c ) Groundwater depletion and ways for its replenishment



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3. How is water polluted ?



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4. Discuss the Nalgonda method of fluoride removal.



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5. What happens due to oil pollution in sea?



**Watch Video Solution**

6. Name some organic pollutants.



**Watch Video Solution**

7. How can we protect the environment from pollution.



**Watch Video Solution**

1. Identify the secondary pollutant among the following

A.  $CH_4$

B. Peroxy acetyl nitrate

C.  $SO_2$

D.  $NO$

**Answer: B**



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2. Which of the following is/are primary pollutant,,

(A) Ozone (B)  $SO_2$  (C)  $SO_3$  (D)  $NO_2$  PBN

A. A,C and E

B. B and D

C. A, B and D



D. C, D, E

**Answer: B**



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**3. Which of the following is a primary pollutant?**

A.  $H_2SO_4$

B. Acrolein

C. Formaldehyde

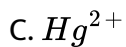
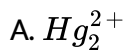
D. CO

**Answer: D**



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**4. Which of the following is most toxic ?**



D. Methyl mercury

**Answer: D**



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5. In which region of atmosphere, lowest temperatures are observed?

A. Troposphere

B. Stratosphere

C. Meso sphere

D. Thermosphere

**Answer: C**



**Watch Video Solution**

6. Three samples of water A, B and C have the D.O levels of 4 ppm, and 3.8 ppm and 2.1 ppm respectively the most polluted sample of water is

A. can not be predicted

B. B

C. C

D. A

**Answer: C**



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7. Identify the incorrect statement

A. Plants and sea water are receptors of  $CO_2$

B. Micro organism acts as sink for dead plants and animals.

C. methyl isocyanate and DDT are contaminants

D.  $Pb$ ,  $Hg$ ,  $CO_2$ , and  $SO_2$  are pollutants

**Answer: A**



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8. Gradual warming of the atmosphere due to trapping of radiation of long wavelength is called

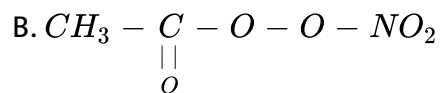
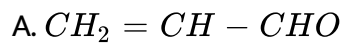
- A. air pollution
- B. depletion of ozone layer
- C. photosynthesis
- D. greenhouse effect

**Answer: D**



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9. Composition of PAN is



Answer: B



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10. Match the following

**List- I**

A) Biodegradable pollutant

B) Non- biodegradable  
pollutant

C) Viable particulate sewage

D) Non- viable particulate

**List - II**

1) Mist

2) Algae

3) Domestic

4) Plastic

The correct match is

	A	B	C	D
1)	3	4	2	1
2)	1	2	4	3
3)	4	3	1	2
4)	3	4	1	2



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11. Assertion (A) : The temperature in the thermosphere increases with altitude.

Reason (R) : Ozone present in stratosphere absorbs ultraviolet radiation

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: B**



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**12.** (A): Ionosphere contains gases in the ionised form which form the bases for wireless communication

(R): The ions reflect back the radio waves to the earth.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: A**



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**13.** Assertion (A) : Rain water normally has a pH of 5.6.

Reason (R) : The presence of  $H_2SO_4$  and  $HNO_3$  produced from the oxides of sulphur and nitrogen lower the pH of rain

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

**Answer: B**



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14. (A): Smaller particles (Size < 5 microns) cause fibrosis of the lung lining.

(R) : Smaller particles (Size < 5 microns) are more likely to penetrate into the lungs.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: A**



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15. Among the following which is a contaminant

A.  $SO_2$

B.  $Pb$

C. Methyl Mercury

D.  $CO_2$

**Answer: C**



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**16.** Which of the following is contaminant responsible for Bhopal gas tragedy?

A.  $CO_2$

B.  $SO_2$

C.  $CH_3NCO$  (MIC)

D.  $O_3$

**Answer: C**



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17. A substance which is not present in nature but added to atmosphere due to human activity and causes adverse effect on environment is called

- A. Pollutant
- B. Contaminant
- C. Sink
- D. Receptor

**Answer: B**



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18. Identification of a pollutant as organic, inorganic (or) organometallic origin is called

- A. Classification
- B. Categorization

C. differentiation

D. Speciation

**Answer: D**



**Watch Video Solution**

**19.** The medium which reacts with pollutant is called

A. Sink

B. Receptor

C. Contaminant

D. Speciation

**Answer: A**



**Watch Video Solution**

20. The sink for dead plants and animals is

- A. Sea water
- B. River
- C. Micro organisms
- D. Atmosphere

Answer: C



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21. Which of the following can act as sink for  $CO_2$  and  $SO_2$

- A. aqKOH
- B. Plants
- C. Sea water
- D. Soil

**Answer: C**



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**22.** Water is said to be polluted if the D.O value of water is less than

A. 152 ppm

B. 4 ppm

C. 50 ppm

D. 100 ppm

**Answer: B**



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**23.** The amount of oxygen required for healthy growth of plants and animals in water is

A. 1-2 mg/ml

B. 4-6g/lit

C. 1-2g/100ml

D. 4-6mg/litre

**Answer: D**



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**24.** A good quality of water will have

A. high D.O.

B. high B.O.D

C. high C.O.D

D. high T.L.V

**Answer: A**



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25. The amount of oxygen required to oxidise organic substance present in water is called

- A. DO
- B. COD
- C. BOD
- D. TLV

**Answer: B**



**Watch Video Solution**

26. Chemical oxygen demand is determined by using

- A. Methyl organe
- B.  $K_2Cr_2O_7 + 50\% H_2SO_4$
- C.  $CaOCl_2 + 50\% H_2SO_4$



D. Alum + CaO

**Answer: B**



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**27. COD is a measure of**

A. Organic substances in water

B. Oxides of S, P and N in air

C. Inorganic pollutants in water

D. Salinity of water

**Answer: A**



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**28.** The amount of oxygen used by micro organisms present in water for five days at  $20^{\circ}C$  is called

- A. COD
- B. DO
- C. TLV
- D. BOD

**Answer: D**



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**29.** Which of the following is a measure of bacteria present in water

- A. D.O
- B. COD
- C. B.O.D
- D. TLV

**Answer: C**



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**30.** Which of the following does not indicate high level of pollutants or the toxic substances I) High DO value II) High COD value III) High BOO value IV) High TLV The correct combination is

- A. All are correct
- B. I and IV only
- C. II and III only
- D. III and IV only

**Answer: B**



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**LIST - 1**

- A) Pollutant but not contaminant  
B) Bhopal tragedy  
C) Receptor to smoke of automobiles  
D) Sink to dry leaves and garbage

**LIST - 2**

- I) Methyl isocyanate  
 $\text{CH}_3 - \text{N} = \text{CO}$   
II)  $\text{CO}_2$   
III) Human eyes  
IV) Micro organisms  
V) Mercury

The correct match is

- |    | A  | B   | C   | D  |
|----|----|-----|-----|----|
| 1) | IV | III | IV  | II |
| 2) | I  | III | II  | IV |
| 3) | II | I   | III | IV |
| 4) | I  | IV  | III | II |

31.



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32. The study of toxicity of organo metallic compounds is termed as

- A. classification  
B. categorization

C. eutrophication

D. speciation

**Answer: D**



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**33.** The TLV values of four pollutants A, B, C and D are 9ppm, 10ppm, 100ppm and 500 ppm respectively. The most toxic amount among them is

A. A

B. B

C. C

D. D

**Answer: A**



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## OBJECTIVE EXERCISE - 1 (Environmental segments - Air Pollution)

1. The region which is greatly affected by air pollution is

- A. Troposphere
- B. Stratosphere
- C. Mesosphere
- D. Thermosphere

**Answer: A**



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2. The region which contains water vapour is

- A. Stratosphere
- B. Troposphere
- C. Mesosphere

D. Thermosphere

**Answer: B**



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3. Solid component of the earth consisting of soil, rocks and mountains is called

A. Hydrosphere

B. Lithosphere

C. Atmosphere

D. Biosphere

**Answer: B**



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4. Which of the following is a primary pollutant?

A. CO

B. PAN

C. Aldehydes

D.  $H_2SO_4$

**Answer: A**



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5. The greatest affinity for haemoglobin is shown by

A. NO

B. CO

C.  $O_2$

D.  $CO_2$



**Answer: B**



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**6. The most abundant hydrocarbon pollutant is**

A. Ethane

B. Methane

C. Propane

D. Butane

**Answer: B**



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**7. Ozone layer is present in**

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Thermosphere

**Answer: B**



**Watch Video Solution**

**8.** In which or the following region ionisation of gases takes place

A. Troposphere

B. Thermosphere

C. Lithosphere

D. Stratosphere

**Answer: B**



**Watch Video Solution**

9. Heat balance on earth surface is maintained by circulation of air in

- A. Troposphere
- B. Hydrosphere
- C. Lithosphere
- D. Biosphere

**Answer: A**



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10. The extent of conversion of oxyhaemoglobin to carboxy haemoglobin depends on

- A. Concentration of CO in air
- B. time of exposure of the person to CO
- C. Both 1&2
- D. amount of haemoglobin in blood

**Answer: C**



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**11.** The level of CO gas in air that causes immediate death is

A. 10ppm

B. 100ppm

C. 500ppm

D. 1000ppm

**Answer: D**



**Watch Video Solution**

**12.** The source of  $CO_2$  in the atmosphere is

A. Combustion of fuel

B. Fermentation

C. Respiration

D. All the above

**Answer: D**



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**13. Which is incorrect about 'green house effect'**

A. It is due to high concentration of  $CO_2$  in atmosphere

B. It is influenced by gases like  $CH_4$ ,  $O_3$  and CFCs

C. It results in lowering of the level of oceans

D. It results in warming up of the earth

**Answer: C**



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14. Global warming can be prevented by

- A. Constructing more dams on rivers
- B. Deforestation
- C. Growing more trees
- D. Carefully utilizing ground water

**Answer: C**



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15. The set of gases causing green house effect is

- A.  $CO_2$ ,  $CO$ ,  $SO_2$ ,  $N_2$
- B.  $CO_2$ ,  $CH_4$ ,  $O_3$ ,  $NO$
- C.  $CH_4$ ,  $SO_2$ ,  $N_2$ ,  $O_2$
- D.  $CO_2$ ,  $Br_2$ ,  $N_2$ ,  $O_2$

**Answer: B**



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**16.** Unimely and unusual rains are due to

- A. Global warming
- B. Use of Jet planes
- C. Increase in  $SO_2$  level
- D. Depletion of Ozone layer

**Answer: A**



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**17.** Lung diseases are four times more in urban areas than in rural areas.

This is due to the presence of

A.  $SO_2$

B.  $CO_2$

C.  $N_2$

D. Steam

**Answer: A**



**Watch Video Solution**

**18.** The pH of acid rain may be

A. 8.2

B. 4.6

C. 5.6

D. 10.1

**Answer: B**



**Watch Video Solution**



19. Acid rains contain

A.  $\text{HCl}$

B.  $\text{HNO}_3$

C.  $\text{H}_2\text{SO}_4$

D.  $\text{HNO}_3 + \text{H}_2\text{SO}_4$

**Answer: D**



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20. The beauty of Tajmahal is getting destroyed due to

A. global warming

B. photochemical reaction

C. presence of  $\text{CO}$  gas in air

D. acid rain

**Answer: D**



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**21. Gases responsible for acid rain are**

A. NO and  $NO_2$

B.  $SO_2$  only

C.  $NO_2$  and  $SO_2$

D.  $CO$ ,  $CO_2$

**Answer: C**



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**22. Gas used in refrigerators is**

A. T.E.L

B.  $C_8H_{18}$

C.  $CCl_2F_2$

D.  $CCl_3NO_2$

**Answer: C**



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**23.** CFC are used extensively, It is because

A. They are reactive

B. They are liquids

C. They are gases

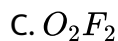
D. They are cheap and stable

**Answer: D**



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24. The species formed in the depletion of ozone layer by chlorofluorocarbons in free radical mechanism is



**Answer: A**



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25. Ozone is useful in \_\_\_\_\_ and harmful in \_\_\_\_

A. Troposphere & Mesosphere

B. Mesosphere & Troposphere

C. Thermosphere & Stratosphere

D. Stratosphere & Troposphere

**Answer: D**



**Watch Video Solution**

**26.** Carcinogenic pollutant is

A. CO

B.  $SO_2$

C. Benzopyrene

D. PAN

**Answer: C**



**Watch Video Solution**

**27.** The pollutant which deteriorates the plant cellulose

A. Benzopyrene

B. PAN

C. BHC

D.  $H_2SO_3$

**Answer: B**



**Watch Video Solution**

**28.** Wrong statement regarding 'London smog' is

A. Observed in winter season

B. It is reducing in nature

C. It is due to Carbon particles,  $SO_2$

D. It observed when solar radiation is high

**Answer: D**



**Watch Video Solution**

**29.** Smog is mainly due to

- A. Oxides of sulphur & Carbon particles
- B. Oxides of Pb
- C. Oxides of carbon
- D. Oxides of Chlorine

**Answer: A**



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**30.** Which of the following pollutant is released from the emission tubes of diesel engines

- A. Mercury
- B. Lead
- C. Benzopyrene

D.  $CFCl_3$

**Answer: C**



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**31.** Which of the following are biodegradable pollutants

A. Pesticides

B. Domestic wastes

C. Mercuric salts

D. Lead compounds

**Answer: B**



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**32.** A 50% increase of  $CO_2$  level in atmosphere causes



- A. The increase of surface temperature by  $3^{\circ}\text{C}$
- B. The increase of sea level by 7 meters
- C. The decrease of rate of evaporation of surface water
- D. The decrease in  $\text{CO}_2$

**Answer: A**



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**33.** Which of the following does not contribute towards the formation or photochemical smog?

- A. NO
- B.  $\text{SO}_2$
- C.  $\text{O}_3$
- D. Hydrocarbons

**Answer: B**

**34.** The aromatic compounds present as particulates are

- A. Benzene
- B. Toluene
- C. Nitrobenzene
- D. Polycyclic aromatic hydrocarbons

**Answer: D**

**35.** Which of the following statements is false ?

- A. Photochemical smog causes irritation in eyes
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN

D. London smog is oxidising in nature

**Answer: D**



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**36.** Which of the following is a sink for CO ?

A. Haemoglobin

B. Microorganisms present in the soil

C. Oceans

D. Plants

**Answer: B**



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**37.** Depletion of ozone layer causes

A. Blood cancer

B. Lung cancer

C. Skin cancer

D. Breast cancer

**Answer: C**



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**38.** Which of the following deplete ozone layer?

A.  $SO_2$

B.  $CO_2$

C.  $CO$

D. NO and freons

**Answer: D**



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**39.** UV radiation from sun causes a reaction That produces

- A. Carbon monoxide
- B. Sulphur dioxide
- C. Fluorides
- D. Ozone

**Answer: D**



**Watch Video Solution**

**40.** Chlorofluorocarbon releases which of the following chemical harmful to ozone ?

- A. Fluorine
- B. Chlorine
- C. Nitrogen dioxide

D. Sulphur dioxide

**Answer: B**



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**41. 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

**Answer: C**



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**42.** Ozone layer of stratosphere requires protection from indiscriminate use of

- A. Pesticides
- B. Atomic explosions
- C. Aerosols and high flying jets
- D. Balloons

**Answer: C**



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**LIST - 1****A) Major constituent****B) Minor constituent****C) Trace constituent****LIST - 2****I)  $O_2$  and  $HO_{2(g)}$** **II) Ar and  $CO_2$** **III)  $N_2$** **IV) He,  $N_2O$  and  $O_3$** **The correct match regarding air**

	A	B	C		A	B	C
1)	I	II	IV	2)	I	III	IV
3)	II	III	IV	4)	IV	III	V

**43.****Watch Video Solution**

**44.** Which of the following statements are true regarding photochemical smog

It is oxidising in nature

It is formed when intensity of solar radiation is very high

It is formed by PRN, Ozone and oxides of nitrogen

It is formed by the particulate carbon and  $SO_2$

It is reducing in nature



A. A, B and D

B. A, D and E

C. A, C and D

D. A, B and C

**Answer: D**



**Watch Video Solution**

**45.** (A) Acid rains have been reported in some places which are far away from the places where industries are located

(B) (R) : Rain clouds move away from industries.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: A**



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**46.** (A): Nowadays surface of the earth gets heated up.

(R):  $CO_2$  and water vapour partly reflects IR radiation back to earth's surface.

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

**Answer: A**



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**47. (A):** Holes in ozone layer are observed at the north and the south poles by scientists.

**(R):** UV radiation damages eyes causing cataract of eyes.

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

**Answer: B**



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**48. (A):** CO pollution is very high from 9AM to 10 AM in Urban areas

**(R):** Almost 80% CO is released from Automobiles

- A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: A**



**Watch Video Solution**

**49.** Tajmahal is effected by

A. CO

B.  $SO_2$

C.  $CaO$

D.  $CO_2$

**Answer: B**



**Watch Video Solution**

50. (A): The pH of normal rain is 5.6.

(R)  $CO_2$  present in atmosphere absorbed in moisture to give  $H^+$  and  $HCO_3^-$

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of (A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

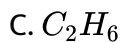
**Answer: A**



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51. Poisonous gas present in the exhaust fumes of an automobile is

A.  $CO_2$

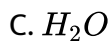


**Answer: D**



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**52.** Which one of the following is mainly responsible for the depletion of ozone layer



**Answer: D**



**Watch Video Solution**

53.  $CFCl_3$  is responsible for the decomposition of ozone to oxygen.

Which of the following reacts with ozone to form oxygen>



**Answer: D**



**Watch Video Solution**

54. An object is located at a height of  $5 \times 10^5$  m from the surface of the earth.

The object is located in which part of atmosphere?

A. Thermosphere

B. Mesosphere

C. Stratosphere

D. Troposphere

**Answer: D**



**Watch Video Solution**

**55.** Identify the correct decreasing order of the following with respect to altitude from atmosphere.

I Troposphere

II Mesosphere

III Thermosphere

A. II , III, I

B. III, II, I

C. I,II,III

D. I,III,II

**Answer: B**





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56. When organic substances undergo anaerobic degradation the product formed mainly is

A.  $CO_2$

B.  $H_2S$

C.  $CH_4$

D.  $NO$

**Answer: C**



[Watch Video Solution](#)

57. The non-viable particulate is among the following is

A. Dust

B. Bacteria

C. Moulds

D. Fungi

**Answer: A**



**Watch Video Solution**

**58.** The loss or reduction of chlorophyll in the leaves is termed as

A. Necrosis

B. Chlorosis

C. Epinasty

D. Lichen

**Answer: B**



**Watch Video Solution**

1. The term not responsible for water pollution

- A. Industrial Revolution
- B. Environmental friendly reactions
- C. Blue Revloution
- D. Over population

**Answer: B**



**Watch Video Solution**

2. The term not responsible for water pollution

- A. Green revolution
- B. Blue revolution
- C. Industrial revolution
- D. Green chemistry

**Answer: D**



**Watch Video Solution**

**3. Water pollution does not cause**

A. Change in colour and salinity of water

B. increased fish population

C. decrease in quality of water

D. uncontrolled growth of weeds in water

**Answer: B**



**Watch Video Solution**

**4. The reagent used to detect fluoride present in water in**

A. Alum + CaO +  $CaOCl_2$

B. defluoron - I & II

C. Zirconium - alizarin - S- dye

D. calcium aluminium fluoride

**Answer: C**



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**5. Match the following**

**List- I**

A)  $\text{NO}_3^-$  ion in drinking water is greater than 50 ppm causes

B)  $\text{SO}_4^{2-}$  ion is greater than 550ppm causes

C) Mercury poison causing

D) Domestic sewage

**List - II**

1) Dissolved oxygen decreases

2) Minamita disease

3) Laxative effect

4) Blue baby syndrome



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6. Which one of the following substances is used to reactivate the de-activated filters in activated carbon method for defluoridation ?

- A. Defluoron - 1
- B.  $CaOCl_2$  lime and alum
- C. 4% NaOH solution and then 1%  $H_3PO_4$  solution
- D. 4% NaCl solution and then 5%  $H_2SO_4$  solution.

**Answer: C**



**Watch Video Solution**

7. Increase in concentration of pollutant by the process of food chains is called

- A. Eutrophication
- B. Bioamplification
- C. Defluoridation

D. Biological oxidation

**Answer: B**



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**8. Eutrophication is mainly caused by**

A. Food chains

B. Chloroflorocarbons

C.  $SO_2$  and  $CO_2$

D. Nitrates and Phosphates

**Answer: D**



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**9. Carcinogenic water pollutant is**

- A. Volatile aromatic compounds
- B. non volatile aromatic compounds
- C. methane
- D. Formaldehyde

**Answer: B**



**Watch Video Solution**

**10.** The main source of phosphate pollution in water is

- A. oil pollutant
- B. pesticides
- C. sewage
- D. sediments

**Answer: C**



**Watch Video Solution**



11. Which of the following is not an algal nutrient

A. Hg

B.  $PO_4^{3-}$

C.  $NO_3^-$

D.  $CO_2$

**Answer: A**



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12. Lakes containing excess of nutritious substance are called

A. Polluted lakes

B. Eutrophic lakes

C. Dead lake

D. Green Lake

**Answer: B**



**Watch Video Solution**

**13.** Which of the following decreases the dissolved oxygen in water

A. Organic matter

B. Flourides

C. Carbonates

D. Methyl Mercury

**Answer: A**



**Watch Video Solution**

14. Water become useless for drinking purpose if the fluoride concentration exceeds

- A. 10 ppm
- B. 5 ppm
- C. 3 ppm
- D. 20 ppm

**Answer: C**



**Watch Video Solution**

15. In ion exchange method of defluoridation of water, which one of the following is used

- A.  $CaOCl_2$
- B. defluoron - 1
- C. defluoron -2

D. Both 2 and 3

**Answer: D**



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**16.** By using activated carbon method,  $F^-$  ion concentration in water can be decreased from

A. 12ppm to 5ppm

B. 12ppm to 1ppm

C. 15ppm to 10ppm

D. 15ppm to 7ppm

**Answer: D**



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17. In the Nalgonda method, chemicals used for defluoridation of water in correct order are

- A.  $CaO + CaOCl_2$
- B.  $CaOCl_2 + CaO + Alum$
- C.  $CaO + CaOCl_2 + Alum$
- D. Any of the above

**Answer: B**



**Watch Video Solution**

18. Which of the following is used as "Bioremedies"

- A. Nitrates and phosphates
- B. Enzymes and microorganisms
- C. Sediments and oils
- D. Oxides of nitrogen

**Answer: B**



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**19.** 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)

**Answer: B**



**Watch Video Solution**

**20.** Domestic waste mostly constitute

- A. Non-biodegradable pollutants

B. Biodegradable pollutants

C. Effluents

D. Air pollutants

**Answer: D**



**Watch Video Solution**

**21. DDT is**

A. A fertilizer

B. Biodegradable pollutant

C. Non-biodegradable pollutant

D. Greenhouse gas

**Answer: B**



**Watch Video Solution**

22. The suspected carcinogenic water pollutant is

- A. MIC
- B. methylated mercury
- C. Tetrachloroethene
- D. Volatile aromatic compounds

**Answer: C**



**Watch Video Solution**

23. Phosphate pollution is caused by

- A. Weathering of phosphate rocks only
- B. Agricultural fertilizers only
- C. Phosphate rocks and sewage
- D. Sewage and agricultural fertilizers



**Answer: C**



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**24.** Sewage water is purified by

- A. Microorganisms
- B. Light
- C. Fishes
- D. Aquatic plants

**Answer: D**



**Watch Video Solution**

**25.** Water is often treated with chlorine to

- A. Increase oxygen content

B. Kill germs

C. Remove suspended particles

D. Remove hardness

**Answer: B**



**Watch Video Solution**

**26. Faecal matter polluting drinking water causes**

A. Fluorosis

B. Chlorosis

C. Jaundice

D. minamata disease

**Answer: C**



**Watch Video Solution**

**27.** Correct statements of the following are

Fluorides can be detected by zirconium - alizarin S - dye

Harmless level of fluorides in water is upto 10ppm

In Nalgonda technique bleaching powder, lime and alum are added in the same order

Less than 3ppm of fluoride concentration can cause fluorosis

A. A and C

B. C and D

C. B and D

D. A and B

**Answer: A**



**Watch Video Solution**

**28.** Which of the following is not an air pollutant ?

A.  $N_2$

B.  $N_2O$

C.  $NO$

D.  $CO$

**Answer: A**



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**29. Biodegradable materials are**

A. Those which spoil the biological environment

B. Are toxic

C. Can be broken down by bacteria

D. Used for converting waste to greenary

**Answer: C**



**Watch Video Solution**

## OBJECTIVE EXERCISE - 2A (Term & segments- air pollutions)

### LIST- 1

Name of the region

A) Meso sphere

B) Strato sphere

C) Tropo sphere

D) Thermo sphere

### LIST - 2

1)  $N_2, O_2, CO_2, H_2O$ ,

Maintenance of heat balance

2)  $O_3$ , prevents the u.v radiations from reaching the earth

3)  $O_2^+$ ,  $NO^+$ , Non-propagation of sound waves

4)  $O_2^+$ ,  $O^+$ ,  $NO^+$  Ionization of gases.

The correct match is

	A	B	C	D		A	B	C	D
1)	3	2	4	1	2)	3	2	1	4
3)	3	1	2	4	4)	1	3	4	2

1.



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2. Which of the following is a primary pollutant?

A.  $SO_2$

B.  $NO_2$

C.  $PAN$ ,  $O_3$

D.  $CO_2$

**Answer: C**



**Watch Video Solution**

**3. The density of air is maximum in**

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Thermosphere

**Answer: A**



**Watch Video Solution**

4. Which is not responsible for environmental pollution

- A. Industrialisation
- B. Deforestation
- C. Increase in population
- D. Photosynthesis

**Answer: D**



**Watch Video Solution**

5. The type of bond formed by CO with haemoglobin of blood is

- A. Covalent
- B. Dative
- C. Ionic bond

D. Vanderwalls forces

**Answer: B**



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**6. Russia wanted to ban supersonic jets because**

- A. They travel with high speed
- B. The are prone to accidents
- C. Their cost is high
- D. The gases coming from jets deplete the ozone layer

**Answer: D**



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**7. CFC's are effective scavengers for ozone due to**



- A. Photolytic reaction of  $O_2$  producing Cl radicals
- B. Photolytic decomposition of  $O_3$  producing  $O_2$
- C. Photolytic decomposition of CFC.s producing Cl radicals
- D. None of these

**Answer: C**



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8. When organic substance undergoes degradation through bacteria , the hydrocarbon formed is

- A.  $C_2H_4$
- B.  $C_2H_6$
- C.  $C_2H_2$
- D.  $CH_4$

**Answer: D**

9. The smog is essentially caused by presence of

- A.  $O_2$  and  $O_3$
- B.  $O_3$  and  $N_2$
- C. Oxides of sulphur and nitrogen
- D.  $O_2$  and  $N_2$

**Answer: C**

10. Which of the following statements about ozone layer is true ?

- A. Ozone layer is beneficial to us because ozone cuts out the ultraviolet radiation of the sun
- B. The conversion of Ozone to oxygen is an endothermic reaction

C. Ozone is a triatomic linear molecule

D. Ozone layer is harmful as it cuts out radiation useful for photosynthesis

**Answer: A**



**Watch Video Solution**

11. Which one of the following is mainly responsible for the depletion of ozone layer

A. Methane

B. Carbon dioxide

C. Water

D. Chlorofluorocarbons

**Answer: D**



**Watch Video Solution**

12. Which of the following is true for London smog ?

- A. It occurs during warm weather
- B. It is reducing in nature
- C. It is a common feature over deserts
- D. It contain oxides of nitrogen

**Answer: B**



**Watch Video Solution**

13. Which of the following is not a non-viable particulates

- A. Smoke due to combustion of organic matter
- B. Pulverised coal particles having the size 1mm diameter
- C.  $H_2SO_4$  mist
- D. Fungi

**Answer: D**



**Watch Video Solution**

14. A  $\xrightarrow{O_3NO_2}$  PAN, then ratio of  $\sigma$  and  $\pi$  bonds in the starting substance "A" is

A. 7: 2

B. 2: 7

C. 3: 5

D. 5: 3

**Answer: A**



**Watch Video Solution**

15. Three samples of water A,B and C have the D.O. values 1mg/l , 3mg/l , and 5 mg/l respectively . The more polluted sample of water is

A. A

B. B

C. C

D. All are equal

**Answer: A**



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**LIST -1****Pollutant****A)  $\text{SO}_4^{2-} > 550$  ppm****B)  $(\text{NO}_3)^{-1} > 50$  ppm****C) Lead and Hg****D)  $\text{CO}_2$ ,  $\text{H}_2$ ,  $\text{O}_2$ ,  $\text{N}_2$   
 $\text{NO}_3^{-1}$ ,  $(\text{PO}_4)^{-3}$ ,  
B, Cl, Cu****LIST - 2****Effect****1) causes disease blue baby syndrome****2) Damage to kidney, liver, reproduction system.****3) Eutrophication of the pond****4) Causes laxative effect****5) fluorosis****The correct match is****A B C D****1) 4 1 2 3****3) 1 2 3 4****A B C D****2) 4 1 3 2****4) 4 3 2 1****16.****Watch Video Solution**

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      4) Erosion of soil by strip mining

5) Detergents

The correct match is

A   B   C   D

1) 3   1   4   2

3) 1   3   2   4

A   B   C   D

2) 2   5   3   1

4) 4   2   1   5

17.



**Watch Video Solution**

18. Chief source of soil and water pollution is

A. Agro industry

B. Thermal power plant



C. Mining

D. All the above

**Answer: D**



**Watch Video Solution**

**19.** Fish die in water bodies polluted by sewage due to

A. Pathogens

B. Foul smell

C. Decrease in D.O below 4ppm

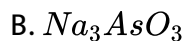
D. Clogging of gills by silt Soil pollution

**Answer: C**



**Watch Video Solution**

20. Herbicides are



C. Both 1&2

D. DDT

Answer: C



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21. (A) : Instead of pesticides, herbicides like  $NaClO_3$ ,  $Na_3AsO_3$  are used in agriculture sector.

(R) : The fields sprayed with herbicides are more easily attacked by insects and plant diseases

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true but (R) is false

D. Both (A) and (R) are false

**Answer: B**



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**22. Correct statement regarding industrial waste**

A. It is bio degradable

B. It is mostly non biodegradable

C. it causes air pollution only

D. it causes soil pollution only

**Answer: B**



**Watch Video Solution**

## OBJECTIVE EXERCISE - 2A (Control of environmental pollution)

1. Which one of the following can be recycled ?

A. Garbage

B. DDT

C. Plastic

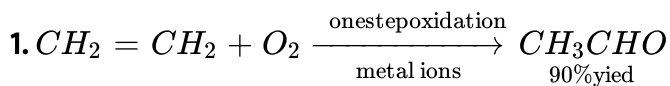
D. Nuclear waste

**Answer: C**



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## OBJECTIVE EXERCISE - 2A (Green Chemistry)



Oxidation states of metal ions used

A. +2, +4

B. +2, +2

C. -2, -3

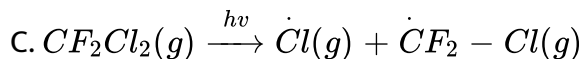
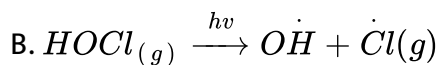
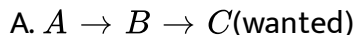
D. +2, -3

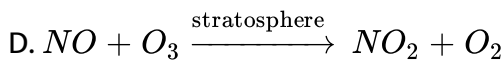
**Answer: B**



**Watch Video Solution**

2. Which of the following is environmental friendly reaction





**Answer: A**



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### OBJECTIVE EXERCISE - 2B

1. Which of the following is a correct statement?

- A. PAN,  $O_3$  are formed by chemical reactions from the primary pollutants
- B.  $SO_2$ ,  $CO_2$  are secondary pollutants
- C. Sewage, domestic waste are non degradable pollutants
- D. DDT, B.H.C, are degradable pollutants.

**Answer: A**



**Watch Video Solution**

2. The acceptable level of carbon monoxide gas(CO) in the atmosphere in ppm level is

A. 250

B. 9

C. 49

D. 850

**Answer: B**



**Watch Video Solution**

3.  $SO_2$  pollution causes

A. Chlorosis in plants

B. respiratory track problems

C. acid rains

D. all the above

**Answer: D**



**Watch Video Solution**

4. The pollutant that is obtained by the roasting of mineral pyrites is

A.  $H_2S$

B.  $PBN$

C.  $SO_2$

D.  $MIC$

**Answer: C**



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5. Metal that escapes into atmosphere by the fumes of automobile vehicles

A. Hg

B. Pb

C. Na

D. Cu

**Answer: B**



**Watch Video Solution**

6. Which of the following is green house gas and also causes depletion of ozone layer

A. CFCs

B.  $CO_2$

C.  $CH_4$

D.  $H_2O$

**Answer: A**



**Watch Video Solution**

7. The common components of photo chemical smog are

A.  $O_3$ ,  $NO_2$ , acrolein,  $HCHO$ ,  $PAN$

B.  $O_3$ ,  $O_2$ ,  $H_2$ ,  $Ni$ ,  $Cu$

C.  $NO + O_3$

D. Only  $PAN$ , acrolein

**Answer: A**



**Watch Video Solution**

8. Which of the following is not the effect of ozone hole.

- A. Ageing of skin
- B. Killing many phyto planktons
- C. Increasing the moisture content of the soil
- D. Cataracts acrolein

**Answer: B**



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**9. The green house effect is mainly caused by**

- A.  $NO_2$
- B.  $NO$
- C.  $CO$
- D.  $CO_2$

**Answer: D**



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10. Among the following herbicide is

A. DDT

B. Aldrin

C. Dieldrin

D.  $Na_3AsO_3$

**Answer: D**



**Watch Video Solution**

11. Which of the following mainly causes water pollution?

A. Fly ash

B. Auto exhausts

C. Aeroplanes

D. Pesticides

**Answer: D**



**Watch Video Solution**

**12. Anthropogenic water pollutant is**

A. vegetable matter

B. Animal matter

C. Weathered products

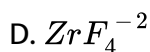
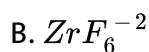
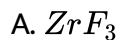
D. Industrial wastes

**Answer: D**



**Watch Video Solution**

13. The colour of the dye zirconium-Alizarin-s fades when added to water containing fluoride ions because of the formation of



**Answer: B**



[View Text Solution](#)

14. The COD values of three water samples A,B and C are 60 ppm, 990 ppm and 120 ppm respectively. The most polluted water sample is

A. A

B. B

C. C

D. All are equally polluted

**Answer: C**



**Watch Video Solution**

**15.** Which of the following chemical is used instead of using  $C_2Cl_4$ , in the dry cleaning process

A. Liquified  $CO_2$

B. Solid  $CO_2$

C. Liquified  $CO_2$  with suitable detergent

D. Solid  $SO_2$

**Answer: C**



**Watch Video Solution**

16. (A): Cellulose is used as sizing agent in place of starch in textile industry.

(R) : By changing process and raw-materials polluted waste is reduced.

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

**Answer: 2**



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17. Incorrect statement regarding waste management is

- A. Bio-degradable and non-biodegradable wastes are separated from garbage waste



- B. Bio-degradable waste is deposited in land fills and used as manure
- C. Non-biodegradable waste is recycled to convert into useful chemicals
- D. Green fuel is obtained from recycling of plastic waste which contains lead

**Answer: D**



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**18.** The correct statements regarding green chemistry

- A. It is a cost effective approach that involves minimum chemical usage, minimum waste generation
- B. It involves not to produce green house gases like  $CH_4$ ,  $CO_2$
- C. It works for not producing wasteful by products in the process
- D. All the above

**Answer: D**



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**19.** A secondary pollutant is

A. CO

B.  $CO_2$

C. *PAN*

D. Aerosol

**Answer: C**



**Watch Video Solution**

**20.** Which statement is not correct ?

- A. Positive soil pollution refers to the reduction in soil productivity due to use of fertilizers and pesticides.
- B. Negative soil pollution refers to the reduction in soil productivity due to erosion and over use.
- C. Nuclear chemistry is not a part of green chemistry.
- D. Loam soil contains unequal amounts of sand, silt and clay.

**Answer: D**



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### OBJECTIVE EXERCISE - 3

1. 100 ml of a sample of water requires 0.98mg of  $K_2$  ( $M. W. = 294$ ) in presence of the  $H_2SO_4$  for the oxidation of dissolved organic matter in it. The COD of the water sample is

A. 78.4 ppm

B. 1.6 ppm

C. 3.2 ppm

D. 6.4 ppm

**Answer: B**



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2. A sample of pond water containing 20mg of organic matter requires 16 mg of dissolved oxygen. (Pond water contains 10mg of organic matter per 2 litres). It's BOD is

A. 4000ppm

B. 400ppm

C. 4 ppm

D. 40ppm

**Answer: C**



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3. Which of the following statements is false?

- A. Photochemical smog causes irritation in eyes
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN
- D. London smog is oxidising in nature

**Answer: D**



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4. A,B,C and D are four 100-mL samples of water. Fluoride ion concentrations in these samples are 2, 5, 8 and 12 ppm respectively. One drop of alizarine - S dye is added to each of these samples. The order of intensity of pink colour in these water samples is

A.  $A > B > C > D$

B.  $D > C > B > A$

C.  $A < B = C < D$

D.  $A = B = C = D$

**Answer: A**



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5. Some statements regarding air pollution are given. Among them, the correct statements are

(a) Above 80% of CO is released from automobiles.

(b) in urban areas, at the peak time of the traffic the level of CO is 100 to 500ppm

(c) If the percentage of CO-Hb in the blood is 32% it causes immediate death

(d) TLV of CO in the atmosphere is 9ppm

A. All one correct

B. Only a,b and d

C. Only a and d

D. Only b, c and d

**Answer: B**



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6.  $10^{-3}$  gm equivalents of  $K_2Cr_2O_7$  in 50%  $H_2SO_4$  is needed to oxidise all the organic matter present in 1 lit of water. Then COD of water is

A. 1

B. 10

C. 12

D. 8

**Answer: D**



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7. Green house gases radiate back the following radiations to the earth surface

- A. U.V
- B. Cosmic
- C. Infrared
- D. Gamma rays

**Answer: C**



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8. (A): Photo chemical smog is Oxidising in nature

(R): Photo chemical smog is formed due to the combustion of coal and petroleum products

- A. Both (A) and (R) are true and (R) is the correct explanation of (A)



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

**Answer: 3**



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9. In the treatment of domestic sewage water, the weight of oxygen that can be required to oxidise 10mg of carbon is

- A. 2.67mg
- B. 26.7mg
- C. 5gr
- D. 10gr

**Answer: B**



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**10.** Which of the following is not the effect of acid rain

- A. The glossy nature of Tajmahal is affected
- B. The pH of the soil increases
- C. Historical monuments of Rome are affected
- D. Soil fertility decreases

**Answer: B**



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**11.** The BOD values of four samples of water A,B,C and D are 165 ppm, 120ppm, 20ppm and 5ppm respectively . The most polluted and least polluted water sample are

- A. A & B

B. B & C

C. C & D

D. A & D

**Answer: D**



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**12.** When rain is accompanied by a thunderstorm, the collected rain water will have a pH value

A. uninfluenced by occurrence of thunderstorm

B. which depends on the amount of dust in air

C. slightly lower than that of rain water without thunderstorm

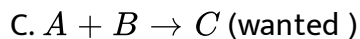
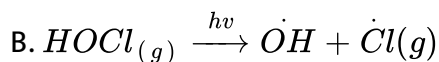
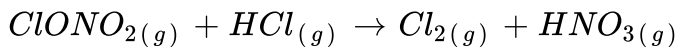
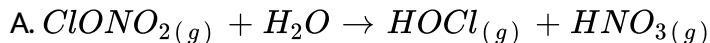
D. slightly higher than that when the thunderstorm is not there.

**Answer: C**

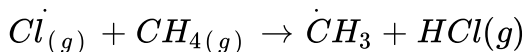
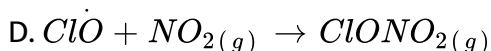


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13. Which of the following reaction causes depletion of ozone layer in summer season.



Reactant   Reactant



**Answer: D**



**Watch Video Solution**

14. A sample of pond water contains 40mg of organic matter requires 32mg of dissolved oxygen. If pond water contains 100mg of organic matter per two litres, BOD value of the water sample is.

- A. 10 ppm
- B. 30 ppm
- C. 20 ppm
- D. 40 ppm

**Answer: D**



**Watch Video Solution**

15. Nerve toxins are

- A.  $\text{NaClO}_3$
- B.  $\text{Na}_3\text{AsO}_3$
- C. Orgaanophosphates

## D. Rodenticides

**Answer: C**



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**16. Which is incorrectly matched ?**

Disease

Cause

1) Fluorosis

Fluorides in water

2) Minamata

Mercury in fishing water

3) chlorosis

$\text{NO}_2$

4) Skin cancer

Ozone hole



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**17. Modes of controlling pollution in large cities include**

A. Less use of insecticides

B. Proper disposal of organic wastes, sewage and industrial effluents

C. Shifting of factories out of the residential area

D. All the above

**Answer: D**



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**18.** TLV values of four pollutants A,B,C and D are 2ppm, 9 ppm, 20 ppm and 50 ppm. Among these four pollutants which one is the most toxic pollutant ?

A. A

B. B

C. C

D. D

**Answer: A**



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19. 100 ml of sample of water requires 3.92 mg of  $K_2Cr_2O_3$  in presence of  $H_2SO_4$  for the oxidation of dissolved organic matter present in it. The COD of the water sample in ppm

- A. 3.1
- B. 6.4
- C. 12.4
- D. 8.2

**Answer: B**



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20. COD of a water sample is 8ppm the weight of acidified  $K_2Cr_2O_7$  required to oxidise the organic matter present in one litre of water sample is

- A. 98 mg
- B. 49 mg



C. 196 mg

D. 98 g

**Answer: B**



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**21.** Proper management of disposal of household and industrial wastes can be done by

A. Recycling the waste material to give useful products again

B. Burning (Incineration)

C. Sewage treatment

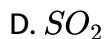
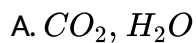
D. All the above

**Answer: D**



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22. Incomplete combustion of petrol in automobile engines can be detected by testing the fuel gases for the presence of

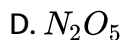
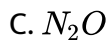


**Answer: B**



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23. Among the oxides of nitrogen, a brown coloured gas is



**Answer: A**



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**24.** The compound used as refrigerant is

- A. Westeron
- B. Hydrogen peroxide
- C. Gammaxene
- D. Freon

**Answer: D**



**Watch Video Solution**

**25.** Poisonous gas present in the exhaust fumes of car is

- A.  $CH_4$

B.  $C_2H_2$

C.  $CO$

D.  $CO_2$

**Answer: C**



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**26. Surface water contains**

A. Salt+Organic matter

B. Only salt

C. Organic matter

D. Suspended impurity

**Answer: A**



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27. Tolerable limits of lead and fluorides in drinking water according to international standard are respectively

- A. 50ppm and 3ppm
- B. 50ppm and 1ppm
- C. 50ppm and 5ppm
- D. 1ppm and 50ppm

**Answer: B**



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28. In Antarctica ozone depletion is due to the formation of following compound

- A. acrolein
- B.  $SO_2$  and  $SO_3$
- C. peroxy acetyl nitrate

D. formaldehyde

**Answer: D**



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**29.** Pollutant of automobile exhausts that affects nervous system and produces mental diseases is

A. Lead

B. Mercury

C. Nitric oxide

D. Sulphur dioxide

**Answer: A**



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**30.** 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

**Answer: A**



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### EXERCISE ON PASSAGE (PASSAGE-I)

1. The amount of oxygen used by the suitable microorganisms present in water during five days at  $20^{\circ}C$  is called as BOD. For pure water BOD is

about 1 ppm fairly pure water 3 ppm and doubtful purity 5 ppm the municipal sewage has BOD values 100-4000 ppm.

$\text{BOD} = \text{Number of moles of } O_2 \text{ required} / \text{Number of liters of water sample}$

BOD is normally expressed for a time period of

- A. 5 hours
- B. 5 minutes
- C. 5 days
- D. 5 seconds

**Answer: C**



**Watch Video Solution**

2. The amount of oxygen used by the suitable microorganisms present in water during five days at  $20^\circ C$  is called as BOD. For pure water BOD is about 1 ppm fairly pure water 3 ppm and doubtful purity 5 ppm the municipal sewage has BOD values 100-4000 ppm.



$\text{BOD} = \text{Number of moles of } O_2 \text{ required} / \text{Number of liters of water sample}$

The BOD value of municipal sewage is

- A. 1 ppm
- B. 5 ppm
- C. 5-10 ppm
- D. 100-4000 ppm

**Answer: D**



**Watch Video Solution**

3. The amount of oxygen used by the suitable microorganisms present in water during five days at  $20^\circ C$  is called as BOD. For pure water BOD is about 1 ppm fairly pure water 3 ppm and doubtful purity 5 ppm the municipal sewage has BOD values 100-4000 ppm.

$\text{BOD} = \text{Number of moles of } O_2 \text{ required} / \text{Number of liters of water sample}$

The BOD values of three water sample x,y and z are 5 mg/litre, 16 mg/Litre and 400 mg/Litre respectively the more polluted sample of water is

A. x

B. y

C. z

D. all are equally polluted

**Answer: C**



**Watch Video Solution**

4. The amount of oxygen used by the suitable microorganisms present in water during five days at  $20^{\circ}C$  is called as BOD. For pure water BOD is about 1 ppm fairly pure water 3 ppm and doubtful purity 5 ppm the municipal sewage has BOD values 100-4000 ppm.

$BOD = \frac{\text{Number of moles of } O_2 \text{ required}}{\text{Number of liters of water sample}}$

If water is polluted its BOD value is

A. 1 ppm

B. 2 ppm

C. 3 ppm

D. 6 ppm

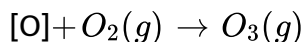
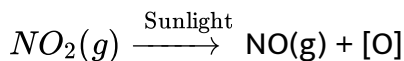
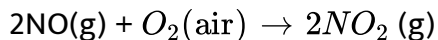
**Answer: D**



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### EXERCISE ON PASSAGE (PASSAGE-II)

1. Nitric oxide (NO) is the nucleus of photochemical smog.



Both  $\text{NO}_2$  and  $\text{O}_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be

suppressed by certain compounds, which act as free radical trap.

Which are the primary constituents of photochemical smog ?

A.  $SO_2$  and  $CO$

B.  $NO_2$  and hydrocarbons

C.  $CO_2$  and  $NO_2$

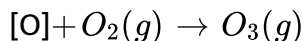
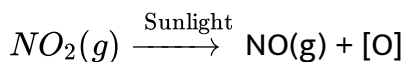
D.  $CO$  and  $CO_2$

**Answer: B**



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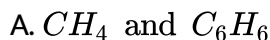
2. Nitric oxide (NO) is the nucleus of photochemical smog.



Both  $NO_2$  and  $O_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and

animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be suppressed by certain compounds, which act as free radical trap.

Photochemical transformation of the automobile exhaust emission in UV wavelength of sunlight results into

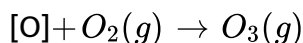
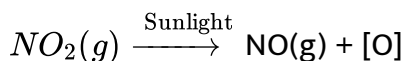


**Answer: B**



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**3. Nitric oxide (NO) is the nucleus of photochemical smog.**



Both  $\text{NO}_2$  and  $\text{O}_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be suppressed by certain compounds, which act as free radical trap.

Smog is common pollutant in places having :

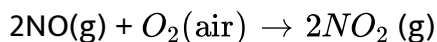
- A. high temperature
- B. low temperature
- C. excessive ammonia in the air
- D. excessive sulphur dioxide in the air

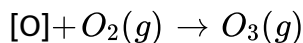
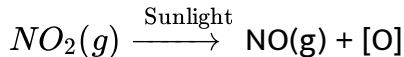
**Answer: A**



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**4.** Nitric oxide (NO) is the nucleus of photochemical smog.





Both  $NO_2$  and  $O_3$  are strong oxidising agents and react with unburnt hydrocarbons in the polluted air to produce formaldehyde, acrolein and peroxyacetyl nitrate (PAN). These products are harmful to the plant and animal life. Catalytic converters are now installed in the automobiles to reduce the photochemical smog. Photochemical smog can also be suppressed by certain compounds, which act as free radical trap.

Smog is common pollutant in places having :

- A. hydrocarbons,  $SO_2$  and  $CO_2$
- B. hydrocarbons, ozone and  $SO_2$
- C. ozone, peroxyacetyl nitrate and  $NO_2$
- D. smoke, peroxyacetyl nitrate and  $SO_2$

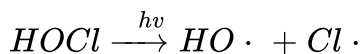
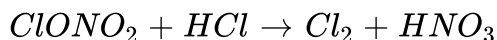
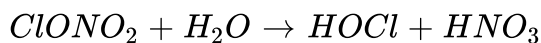
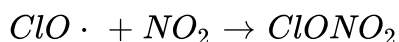
**Answer: C**



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1. Ozone layer acts as one of the most important life support system. The major cause of ozone layer destruction is believed to be the release of chlorofluorocarbon compounds. UV radiation causes the chlorofluorocarbons to dissociate :  $CF_2Cl \xrightarrow{h\nu} Cl \cdot + CF_2Cl$  A highly reactive chlorine atom is responsible for the decomposition of ozone.

$Cl \cdot + O_3(g) \rightarrow ClO \cdot + O_2(g)$   $ClO \cdot + O(g) \rightarrow Cl \cdot + O_2(g)$  Free radicals of chlorine decompose ozone molecules in a chain reaction. The depletion of ozone layer leading to ozone hole has, however, been mainly observed in the stratosphere over Antarctica. Special type of cloud called polar stratospheric clouds are formed over Antarctica. These clouds (contain solid  $HNO_3 \cdot 3H_2O$ ) play an important role in ozone depletion.



The reactive chlorine atoms thus formed are rendered to deplete ozone



layer.

The ozone layer is present in :

- A. troposphere
- B. stratosphere
- C. mesosphere
- D. thermosphere

**Answer: B**



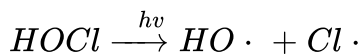
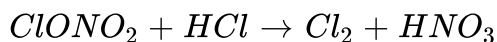
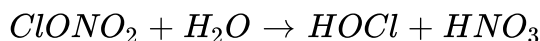
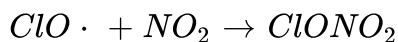
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The reactive chlorine atoms thus formed are rendered to deplete ozone layer.

Peeling of ozone umbrella, which protects us from UV rays is caused by:

- A. acid rain
- B. greenhouse effect
- C. global warming
- D. the UV radiations reach to earth

**Answer: D**



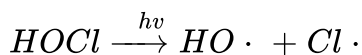
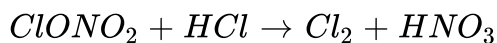
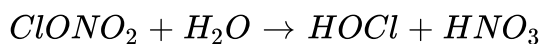
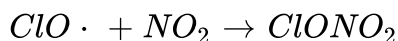
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Peeling of ozone umbrella, which protects us from UV rays is caused by:

A. increase temperature

B. deplete ozone

C. affect environment

D. affect human body

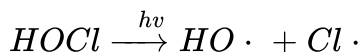
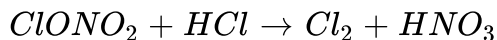
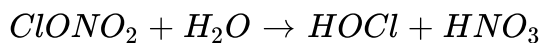
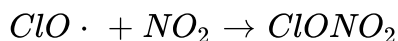
**Answer: B**



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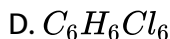
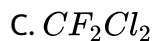
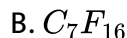
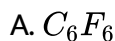
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The reactive chlorine atoms thus formed are rendered to deplete ozone layer.

Peeling of ozone umbrella, which protects us from UV rays is caused by:



**Answer: C**



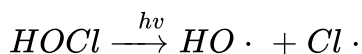
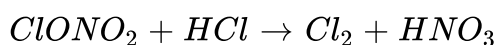
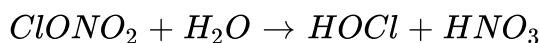
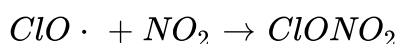
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5. Ozone layer acts as one of the most important life support system. The major cause of ozone layer destruction is believed to be the release of chlorofluorocarbon compounds. UV radiation causes the chlorofluorocarbons to dissociate :  $CF_2Cl \xrightarrow{h\nu} Cl \cdot + CF_2Cl$  A highly reactive chlorine atom is responsible for the decomposition of ozone.

$$Cl \cdot + O_3(g) \rightarrow ClO \cdot + O_2(g)$$

$$ClO \cdot + O(g) \rightarrow Cl \cdot + O_2(g)$$

Free radicals of chlorine decompose ozone molecules in a chain reaction. The depletion of ozone layer leading to ozone hole has, however, been mainly observed in the stratosphere over Antarctica. Special type of cloud called polar stratospheric clouds are formed over Antarctica. These clouds (contain solid  $HNO_3 \cdot 3H_2O$ ) play an important role in ozone depletion.



The reactive chlorine atoms thus formed are rendered to deplete ozone layer.

Peeling of ozone umbrella, which protects us from UV rays is caused by:

A. PAN

B.  $CO_2$

C. *CFCs*

D. Coal burning

**Answer: C**



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## EXAMPLE

1. Dissolved oxygen values of four water samples A, B, C and D are respectively 6 ppm, 5 ppm, 1 ppm and 3 ppm. Which is more polluted?



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2. Biochemical oxygen demand values of four water samples P, Q, R and S are respectively 100 ppm, 50 ppm, 150 ppm and 10 ppm. Arrange them in

the descending order of their purity.



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3. 100 ml of a sample of water requires 1.96 mg of potassium dichromate in the presence of 50%  $H_2SO_4$  for the oxidation of dissolved organic matter in it. Calculate the chemical oxygen demand.



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4. Threshold limit value of three pollutants X, Y and Z are respectively 9 ppm, 20 ppm and 5 ppm. Which one is the most toxic ?



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5. DO value of a water sample is 6 ppm. Calculate the weight of dissolved oxygen present in 100 kg of water sample.



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6. The COD value of a water sample is 40 ppm. Calculate the amount of acidified  $K_2Cr_2O_7$  required to oxidise the organic matter present in 500 ml of that water sample.



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7. How are oxides of nitrogen harmful to ozone concentration?



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8. Freons are boon to industry, but curse to environment. Justify.



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9. Ozone is harmful in the environment segment .r. but it is useful in the environment segment .y.. What are r and y?



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10. Calculate the oxygen requirement for the removal of organic pollutants.



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11. How does sulphide and carbonates present in water toxic ?



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12. Bleaching of paper with hydrogen peroxide is preferred now-a-days Why?



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**SUBJECTIVE EXERCISE - 1 (Short answer questions)**

1. Define the following terms and give two examples each.

a) Pollutant b) Contaminant

c) Sink d) Receptor and

e) Speciation



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2. Write about the environmental segments.



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### **SUBJECTIVE EXERCISE - 1 (Very short answer questions)**

1. Name the important sinks of carbon dioxide.



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2. How is TLV useful to determine pollution?



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3. Why is the environment getting polluted ?



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4. Name any four Pollutants



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5. What are air pollutants? How are they causing air pollution?



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### SUBJECTIVE EXERCISE - 2 (Long answer questios)

1. How do the substances  $\text{CO}$ ,  $\text{NO}$ ,  $\text{SO}_2$  and CFCs pollute atmosphere .



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2. How is global warming taking place? What are its effects? Suggest the ways to prevent it.



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3. How do acid rains occur? What are the effects of acid rains?



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## SUBJECTIVE EXERCISE - 2 (Short answer questions)

1. Ozone is a pollutant and protector to the environment.. Discuss.



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2. Explain the reaction of chlorofluorocarbons with ozone.



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3. Pollution is increased by deforestation. Justify.



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4. How can you prevent green house effect by growing plants?



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5. Why is the environment getting polluted ?



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6. During the past century, the temperature of earth has increased by



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7. In which segment of atmosphere, ozone is present? What is the advantage of ozone layer?



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8. What is acid rain? How is it formed?



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9. What is photochemical smog? What are its consequences?



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10. Explain the effect of ozone hole.



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### SUBJECTIVE EXERCISE - 3 ( Very short answer questios)

1. What is the effect of carbon monoxide on human beings ?



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### SUBJECTIVE EXERCISE - 2 ( Very short answer questios)

1. Name the green house gases.



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2. CFCs are bone to industry but a curse to environment. Discuss.



[Watch Video Solution](#)



3. What is the harm caused by CFCS



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4. Name the important sinks of carbon dioxide.



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5. How is CO released into atmosphere?



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### SUBJECTIVE EXERCISE - 3 (Long answer questions)

1. What happens when water is polluted ? Name the diseases caused by water pollution.



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2. Discuss the pollution due to industrial wastes.



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3. Write the strategies of pollution control.



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4. Discuss soil pollution.



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5. How is fluoride detected ?



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6. Discuss on the development of green chemistry.



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### SUBJECTIVE EXERCISE - 3 (Short answer questions)

1. Suggest some methods to minimise pollution due to industrial waste



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2. Explain the types of industrial wastes



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3. Write about the inorganic pollutants.



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4. Water pollution depends on the nature of industry. Give examples.

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5. What is the tolerable concentration of  $F^-$  ions in water ?

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### SUBJECTIVE EXERCISE - 3 (Very short answer questions)

1. What is bioamplification ?

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2. Which of the following is called eutrophication ?

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3. How is water polluted ?



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4. Discuss the Nalgonda method of fluoride removal.



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5. What happens due to oil pollution in sea?



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6. Name some organic pollutants.



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7. How can we protect the environment form polluttional.



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## OBJECTIVE EXERCISE - 1 (Introduction and Terms )

1. What are Troposphere and Stratosphere ?

- A. 10 - 20 km and 1 - 10 km
- B. 5 km and 10 - 50 km
- C. 10 km and 10 - 50 km
- D. 10-30 km and 5 - 10 km

**Answer: C**



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2. Three samples of water A, Band C have the D.O levels of 4 ppm, and 3.8 ppm and 2.1 ppm respectively the most polluted sample of water is

A. can not be predicted

B. B

C. C

D. A

**Answer: C**



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**3. Identify the incorrect statement :**

A. Plants and sea water are receptors of  $CO_2$

B. Microorganism acts as sink for dead plants and animals.

C. Methylisocyanate and DDT are contaminants.

D.  $Pb$ ,  $Hg$ ,  $CO_2$  and  $SO_2$  are pollutants .

**Answer: A**



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4. Gradual warming of the atmosphere due to trapping of radiation of long wavelength is called

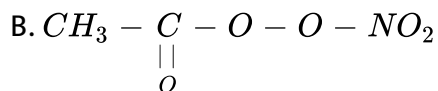
- A. air pollution
- B. depletion of ozone layer
- C. photo synthesis
- D. green house effect

**Answer: D**



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5. Composition of PAN is





C.  $HCHO$

D.  $CH_3CH_2ONO$

**Answer: B**



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**6. Among the following which is a contaminant**

A.  $SO_2$

B. Pb

C. Methyl Mercury

D.  $CO_2$

**Answer: C**



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## 7. Match the following

List-I

- (A) Biodegradable pollutant
- (B) Non-biodegradable pollutant
- (C) Viable particulate sewage
- (D) Non-viable Particulate

List-II

- (1) MIST
- (2) Algae
- (3) Domestic
- (4) Plastic

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	4	2	1

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	2	4	3

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	3	1	2

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	4	1	2

**Answer: A**



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8. A substance which is not present in nature but added to atmosphere due to human activity and causes adverse effect on environment is called

A. Pollutant

B. Contaminant

C. Sink

D. Receptor

**Answer: B**



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9. Identification of a pollutant as organic, inorganic (or) organometallic origin is called

A. Classification

B. Categorization

C. Differentiation

D. Speciation

**Answer: D**



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10. The medium which reacts with pollutant is called

- A. Sink
- B. Receptor
- C. Contaminant
- D. Speciation

**Answer: A**



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11. The sink for dead plants and animals is

- A. Sea water
- B. River
- C. Micro organisms
- D. Atmosphere

**Answer: C**



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**12.** Which of the following can act as sink for  $CO_2$  and  $SO_2$

- A. aq HCl
- B. Plants
- C. Sea water
- D. Soil

**Answer: C**



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**13.** Water is considered to be polluted, if the dissolved oxygen (DO) content is less than....ppm.

A. 152 ppm

B. 4 ppm

C. 50 ppm

D. 100 ppm

**Answer: B**



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**14.** The amount of oxygen required for healthy growth of plants and animals in water is

A. 1-2 mg/ml

B. 4-6 g/lit

C. 1-2 g/100ml

D. 4-6 mg/litre

**Answer: D**



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15. A good quality of water will have

- A. high D.O.
- B. high B.O.D
- C. high C.O.D
- D. high T.L.V

**Answer: A**



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16. The amount of oxygen required to oxidies organic substance present in water is called

- A. DO
- B. COD

C. BOD

D. TLV

**Answer: B**



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17. Chemical oxygen demand is determined by using

A. Methyl organe

B.  $K_2Cr_2O_7 + 50\% H_2SO_4$

C.  $CaOCl_2 + 50\% H_2SO_4$

D. Alum +CaO

**Answer: B**



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**18.** COD is a measure of

- A. Organic substances in water
- B. Oxidies of S , P and N in air
- C. Inorganic pollutants in water
- D. Salinity of water

**Answer: A**



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**19.** The amount of oxygen used by micro organisms present in water for five days at  $20^{\circ}C$  is called

- A. COD
- B. DO
- C. TLY
- D. BOD

**Answer: D**



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**20.** Which of the following is a measure of bacteria present in water

- A. DO
- B. COD
- C. BOD
- D. TLV

**Answer: B**



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**21.** Which of the following does not indicate high level of pollutants or the toxic substances I) High DO value II) High COD value III) High BOO value IV) High TLV The correct combination is

A. All are correct

B. I and IV only

C. II and III only

D. III and IV only

**Answer: B**



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**LIST - 1**

A) Pollutant but not  
contaminant

B) Bhopaltragedy

C) Receptor to smoke  
of automobiles

D) Sink to dry leaves  
and garbage

**LIST - 2**

I) Methyl isocyanate  
( $\text{CH}_3 - \text{N CO}$ )

II)  $\text{CO}_2$

III) Human eyes

IV) Micro organisms

V) Mercury

**22. The correct match is**

The correct match is

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>IV</i>	<i>III</i>	<i>IV</i>	<i>II</i>

- B.  $\begin{matrix} A & B & C & D \\ I & III & II & IV \end{matrix}$
- C.  $\begin{matrix} A & B & C & D \\ II & I & III & IV \end{matrix}$
- D.  $\begin{matrix} A & B & C & D \\ I & IV & III & II \end{matrix}$

**Answer: C**



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**23.** The study of toxicity of organo metallic compounds is termed as

- A. Classification
- B. Categorization
- C. eutrophication
- D. contamination

**Answer: B**



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24. The TLV values of four pollutants A, B, C and D are 9ppm, 10ppm, 100ppm and 500 ppm respectively. The most toxic among them is

A. A

B. B

C. C

D. D

**Answer: A**



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25. The region which is greatly affected by air pollution is

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Thermosphere

**Answer: A**



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**26.** The region which contains water vapour is

- A. Stratosphere
- B. Troposphere
- C. Mesosphere
- D. Thermosphere

**Answer: B**



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**27.** Solid component of the earth consisting of soil, rocks and mountains is called

A. Hydrosphere

B. Lithosphere

C. Atmosphere

D. Biosphere

**Answer: B**



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**28.** The gaseous envelope around the earth is known as atmosphere . The lowest layer of this is extended upto 10km from sea level. This layer is

A. Stratosphere

B. Troposphere

C. Mesosphere

D. Hydrosphere

**Answer: B**



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29. Which of the following is a primary pollutant

A. CO

B. PAN

C. Aldehydes

D.  $H_2SO_4$

**Answer: A**



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30. The most abundant hydrocarbon pollutant is

A. Ethane

B. Methane

C. Propane



D. Butane

**Answer: B**



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**31.** Ozone layer is present in

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Thermosphere

**Answer: B**



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**32.** In which or the following region ionisation of gases takes place

- A. Troposphere
- B. Thermosphere
- C. Lithosphere
- D. Stratosphere

**Answer: B**



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**33.** Heat balance on earth surface is maintained by circulation of air in

- A. Troposphere
- B. Hydrosphere
- C. Lithosphere
- D. Biosphere

**Answer: A**



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**34.** The extent of conversion of oxyhaemoglobin to carboxy haemoglobin depends on

- A. Concentration of CO in air
- B. time of exposure of the person to CO
- C. Both 1 and 2
- D. amount of haemoglobin in blood

**Answer: C**



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**35.** The source of  $CO_2$  in the atmosphere is

- A. Combustion of fuel
- B. Fermentation
- C. Respiration

D. All the above

**Answer: D**



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**36.** Which is incorrect about 'green house effect'

- A. It is due to high concentration of  $CO_2$  in atmosphere
- B. It is influenced by gases like  $CH_4$ ,  $O_3$  and CFCs
- C. It results in lowering of the level of oceans
- D. It results in warming up to the earth

**Answer: C**



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**37.** Global warming can be prevented by

A. Constructing more dams on rivers

B. Deforestation

C. Growing more trees

D. Carefully utilizing ground water

**Answer: C**



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**38.** The set of gases causing green house effect is

A.  $CO_2$ ,  $CO$ ,  $SO_2$ ,  $N_2$

B.  $CO_2$ ,  $CH_4$ ,  $O_3$ ,  $NO$

C.  $CH_4$ ,  $SO_2$ ,  $N_2$ ,  $O_2$

D.  $CO_2$ ,  $Br_2$ ,  $N_2$ ,  $O_2$

**Answer: B**



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39. Unimely and unusual rains are due to

- A. Global warming
- B. Use of jet planes
- C. Increase in  $SO_2$  level
- D. Depletion of Ozone layer

**Answer: A**



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40. Lung diseases are four times more in urban areas than in rural areas.

This is due to the presence of

- A.  $SO_2$
- B.  $CO_2$
- C.  $N_2$

D. Steam

**Answer: A**



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**41.** The pH of acid rain may be

A. 8.2

B. 4.6

C. 5.6

D. 10.1

**Answer: B**



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**42.** Acid rains contain

A.  $\text{HCl}$

B.  $\text{NHO}_3$

C.  $\text{H}_2\text{SO}_4$

D.  $\text{NHO}_3 + \text{H}_2\text{SO}_4$

**Answer: D**



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**43.** The beauty of Tajmahal is getting destroyed due to

A. global warming

B. photochemical reaction

C. presence of CO gas in air

D. acid rain

**Answer: D**



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44. Acid rain is caused by the presence of X and Y in air . X, Y respectively

A.  $NO_2$

B.  $SO_2$

C.  $N_2O_3$

D.  $CO_2$

**Answer: D**



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45. Carbon monoxide is pollutant as it

A. Inactivates nerves

B. Inhibits glycolysis

C. Combines with oxygen

D. Combines with haemoglobin

**Answer: D**



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**46.** Atmosphere content of  $CO_2$  is

A. 0.0034 %

B. 0.034 %

C. 0.34 %

D. 3.4 %

**Answer: B**



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**47.** Which one is not a pollutant normally ?

- A. Hydrocarbons
- B. Corbondioxide
- C. Carbonmonoxide
- D. Sulpher dioxide

**Answer: B**



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**48.** Ozone is useful in \_\_\_\_\_ and harmful in \_\_\_\_

- A. Troposphere & Mesosphere
- B. Troposphere & Mesosphere
- C. Thermosphere & Stratosphere
- D. Stratosphere & Troposphere

**Answer: D**



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**49.** Carcinogenic pollutant is

A. CO

B.  $SO_2$

C. Benzpyrene

D. PAN

**Answer: C**



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**50.** The pollutant which deteriorates the plant cellulose

A. Benzpyrene

B. PAN

C. BHC

D.  $H_2SO_3$

**Answer: B**



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**51.** Wrong statements regarding 'Classical smog' is

- A. Observed in winter season
- B. It is reducing in nature
- C. It is due to Carbon particles,  $SO_2$
- D. It observed when solar radiation is high

**Answer: D**



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**52.** Smog is mainly due to

A. Oxidies of sulphur & Carbon particles

B. Oxidies of Pb

C. Oxidies of carbon

D. Oxidies of Chlorine

**Answer: A**



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**53.** Which of the following pollutant is released from the emissioin tuhes of diesel engines

A. Mercury

B. Lead

C. Benzpyrene

D.  $CFCl_3$

**Answer: C**



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54. Which of the following are biodegradable pollutants

- A. Pesticides
- B. Domestic wastes
- C. Mercuric salts
- D. Lead compounds

**Answer: B**



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55. Which of the following does not contribute towards the formation or photochemical smog?

- A. NO
- B.  $SO_2$

C.  $O_3$

D. Hydrocarbons

**Answer: B**



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**56.** The aromatic compounds present as particulates are

A. Benzene

B. Toluene

C. Nitrobenzene

D. Polycyclic aromatic hydrocarbons

**Answer: D**



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57. (A) Acid rains have been reported in some places which are far away from the places where industries are located

(B) (R) : Rain clouds move away from industries.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true and R is not the correct explanation of A

C. A is true and R is false

D. A is false and R is true

**Answer: A**



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58. Depletion of ozone layer cause

A. Blood cancer

B. Lung cancer

C. Skin cancer

D. Breast cancer

**Answer: C**



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**59.** Which of the following deplete ozone layer?

A.  $SO_2$

B.  $CO_2$

C. CO

D. NO and freons

**Answer: D**



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**60.** UV radiation from sun causes a reaction That produces

- A. Carbon monoxide
- B. Sulphur dioxide
- C. Fluorides
- D. Ozone

**Answer: D**



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**61.** Chlorofluorocarbon releases which of the following chemical harmful to ozone ?

- A. Fluorine radical
- B. Chlorine radical
- C. Nitrogen dioxide
- D. Sulphur dioxide

**Answer: B**



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62. Gas used in refrigerators is

A. T.E.L

B.  $C_8H_{18}$

C.  $CCl_2F_2$

D.  $CCl_3NO_2$

**Answer: C**



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63. CFC are used extensively, It is because

A. They are reactive

B. They are liquids

C. They are gases

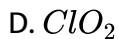
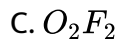
D. They are cheap and stable

**Answer: D**



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**64.** The species formed in the depletion of ozone layer by chlorofluorocarbons in free radical mechanism is



**Answer: A**



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65. Which of the following is green house gas and also causes depletion of ozone layer

A. CFCs

B.  $CO_2$

C.  $CH_4$

D.  $H_2O$

Answer: A



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66. The common components of photo chemical smog are

A.  $O_3$ ,  $NO_2$ , acrolein, HCHO, PAN

B.  $O_3$ ,  $O_2$ ,  $H_2$ ,  $Ni$ ,  $Cu$

C.  $NO + O_3$

D. Only PAN, acrolein

**Answer: A**



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**67.** 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

**Answer: C**



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**68.** Ozone layer of stratosphere requires protection from indiscriminate use of

A. Pesticides

B. Atomics explosions

C. Aerosols and high flying jets

D. Balloons

**Answer: C**



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**69.** Which of the following statements are true regarding photochemical smog

It is oxidising in nature

It is formed when intensity of solar radiation is very high

It is formed by PRN, Ozone and oxides of nitrogen

It is formed by the particulate carbon and  $SO_2$

It is reducing in nature

A. A, B and D



B. A,D and E

C. A,C ad D

D. A,B and C

**Answer: D**



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**70.** Tajmahal is effected by

A.  $CO$

B.  $SO_2$

C.  $CaO$

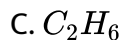
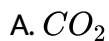
D.  $CO_2$

**Answer: B**



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71. Poisonous gas present in the exhaust fumes of an automobile is

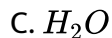
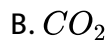


**Answer: D**



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72. Which one of the following is mainly responsible for the depletion of ozone layer



**Answer: D**



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**73.**  $CFCl_3$  is responsible for the decomposition of ozone to oxygen.

Which of the following reacts with ozone to form oxygen>



**Answer: D**



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**74.** An object is located at a height of  $5 \text{ km}$  from the surface of the earth.

The object is located in which part of atmosphere?

A. Thermosphere

B. Mesosphere

C. Stratosphere

D. Troposphere

**Answer: D**



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**75.** Identify the correct decreasing order of the following with respect to altitude from atmosphere.

I Troposphere

II Mesosphere

III Thermosphere

A. II, III, I

B. III, II, I

C. I, II, III

D. I,III, II

**Answer: B**



**Watch Video Solution**

**76.** When organic substances undergo anaerobic degradation the product formed mainly is

A.  $CO_2$

B.  $H_2S$

C.  $CH_4$

D. NO

**Answer: C**



**Watch Video Solution**

77. The non-viable particulate is among the following is

- A. Dust
- B. Bacteria
- C. Moulds
- D. Fungi

**Answer: A**



**Watch Video Solution**

78. The loss or reduction of chlorophyll in the leaves is termed as

- A. Necrosis
- B. Chlorosis
- C. Epinasty
- D. Lichen

**Answer: B**



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**79.** The greatest affinity for haemoglobin is shown by

A. No

B. CO

C.  $O_2$

D.  $CO_2$

**Answer: B**



**Watch Video Solution**

**80.** Poisonous gas present in the exhaust fumes of car is

A.  $CH_4$

B.  $C_2H_2$

C.  $CO$

D.  $CO_2$

**Answer: C**



**Watch Video Solution**

**81. Which of the following statements is wrong ?**

A. Ozone is not responsible for green house effect

B. Ozone can oxidises sulphur dioxide present in the atmosphere to sulphur trioxide

C. Ozone hole in thinning of ozone layer present in stratosphere

D. Ozone is produced in upper stratosphere by the action of UV rays on oxygen

**Answer: A**





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**82.** Which of the following statements is correct?

- A. Ozone hole is a hole formed in stratosphere from which ozone oozes out
- B. Ozone hole is a hole formed in the troposphere from which ozone oozes out
- C. Ozone hole is thinning of ozone layer of stratosphere at some places
- D. Ozone hole means vanishing of ozone layer around the earth completely

**Answer: C**



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**83.** Pick up the correct statement

- A. CO which is a 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 the morning hours
- D. During formation of smog occurs in the morning hours During formation of smog the level of ozone in the atmosphere goes down

**Answer: C**



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**84. Match the following**

List-I

List-II

A) pH of unpolluted rain water

I)  $H_2C = CH - CHO$

B) Acid rain

II) 5.6

C) Acrolein

III)  $NO_2, CO_2$

D) Freon

IV)  $CF_2Cl_2$

V)  $CaOCl_2$

A. 

A	B	C	D
II	I	III	IV

B. 

A	B	C	D
I	II	III	IV

C. 

A	B	C	D
III	I	IV	I

D. 

A	B	C	D
II	III	I	IV

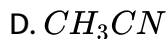
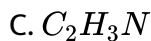
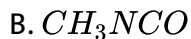
**Answer: D**



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**85. Bhopal gas tragedy of 1984 was caused by**

A. CFC



**Answer: B**



**Watch Video Solution**

**86.** Which of the following practices will not come under green chemistry ?

A. If possible , making use of soap made of vegetable oils instead of using synthetic detergents

B. Using  $H_2O_2$  for bleaching purpose instead of using chlorine based bleaching agents

C. Using bicycle for travelling small distances instead of using petrol/diesel based vehicles

D. Using plastic cans for nearly storing substances

**Answer: C**



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**87.** Carcinogenic water pollutant is

- A. volatile aromatic compounds
- B. non volatile aromatic compounds
- C. methane
- D. formaldehyde

**Answer: B**



**Watch Video Solution**

**88.** Which of the following is not an algal nutrient

A. Hg

B.  $PO_4^{3-}$

C.  $NO_3^-$

D.  $CO_2$

**Answer: A**



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**89.** Lakes containing excess of nutritious substance are called

A. pollutant lakes

B. Eutrophic lakes

C. Dead lake

D. Green Lake

**Answer: B**



**Watch Video Solution**

90. Which of the following decreases the dissolved oxygen in water

- A. Organic matter
- B. Fluorides
- C. Carbonates
- D. Methyl Mercury

**Answer: A**



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91. Water become useless for drinking purpose if the fluoride concentration exceeds

- A. 10 ppm
- B. 5 ppm
- C. 3 ppm

D. 20 ppm

**Answer: C**



**Watch Video Solution**

**92.** The term not responsible for water pollution

- A. Industrial Revolution
- B. Environmental friendly reactions
- C. Blue Revolution
- D. Over population

**Answer: B**



**Watch Video Solution**

**93.** Addition of phosphate fertilizers into water leads to



A. Increased growth of fish

B. Reduced algal growth

C. Increase algal growth

D. Nutrient deficient

**Answer: C**



**Watch Video Solution**

**94.** Domestic waste mostly constitutes

A. Non-biodegradable pollutants

B. Biodegradable pollutants

C. Effluents

D. Air pollutants

**Answer: B**



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95. DDT is an example of

- A. A fertilizer
- B. Biodegradable pollutants
- C. Non-biodegradable pollutant
- D. Greenhouse has

**Answer: C**



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96. The suspected carcinogenic water pollutant is

- A. Methyl isocyanide
- B. Methylated mercury
- C. Tetrachloroethene

D. Volatile aromatic compounds

**Answer: B**



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**97.** Phosphate pollution is caused by

- A. Weathering of phosphate rocks only
- B. Agricultural fertilizers only
- C. Phosphate rocks and sewage
- D. Sewage and agricultural fertilizers

**Answer: D**



**Watch Video Solution**

**98.** Water is often treated with chlorine to

- A. Increase oxygen content
- B. Kill germs
- C. Remove suspended particles
- D. Remove hardness

**Answer: B**



**Watch Video Solution**

**99.** Which of the following is not an air pollutant?

- A.  $N_2$
- B.  $N_2O$
- C. NO
- D. CO

**Answer: A**



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**100.** Biodegradable materials are

- A. Those which spoil the biological environment
- B. Are toxic
- C. Can be broken down by bacteria
- D. Used for converting waste to greenary

**Answer: C**



**Watch Video Solution**

**101.** Which of the following is used as "Bioremedies"

- A. Nitrates and Phosphates
- B. Enzymes and microorganisms
- C. Sediments and oils

D. Oxidies of nitrogen

**Answer: B**



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**102.** Increase in concentration of pollutant by the process of food chains is called

A. Eutrophication

B. Bioamplification

C. Defluoridation

D. Biological oxidation

**Answer: B**



**Watch Video Solution**

**103.** Eutrophication is mainly caused by

- A. Food chains
- B. Chlorofluorocarbons
- C.  $SO_2$  and  $CO_2$
- D. Nitrates and Phosphates

**Answer: D**



**Watch Video Solution**

**104.** The term not responsible for water pollution

- A. Green revaluation
- B. Blue revolution
- C. Industrial revolution
- D. Green chemistry

**Answer: D**



**Watch Video Solution**

**105.** Water pollution does not cause

- A. change in colour and Salinity of water
- B. increased fish population
- C. decrease in quality of water
- D. uncontrollable growth of weeds in water

**Answer: B**



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106. Match the following

List- I

A)  $\text{NO}_3^-$  ion in drinking water is greater than 50 ppm causes

B)  $\text{SO}_4^{2-}$  ion is greater than 550ppm causes

C) Mercury poison causing

D) Domestic sewage

List - II

1) Dissolved oxygen decreases

2) Minamita disease

3) Laxative effect

4) Blue baby syndrome

A.  $\begin{matrix} A & B & C & D \\ 1 & 2 & 3 & 4 \end{matrix}$

B.  $\begin{matrix} A & B & C & D \\ 4 & 3 & 1 & 2 \end{matrix}$

C.  $\begin{matrix} A & B & C & D \\ 3 & 4 & 2 & 1 \end{matrix}$

D.  $\begin{matrix} A & B & C & D \\ 4 & 3 & 2 & 1 \end{matrix}$

Answer: D



Watch Video Solution

**107.** Most abundant water pollutant is

- A. Detergents
- B. Pesticides
- C. Industrial wastes
- D. Ammonia

**Answer: C**



**Watch Video Solution**

**108.** Sewage water is purified by

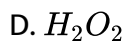
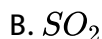
- A. Microorganisms
- B. Light
- C. Fishes
- D. Aquatic plants

**Answer: A**



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**109.** Green method of bleaching of paper can be made using the following chemical

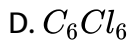
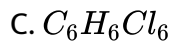
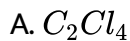


**Answer: D**



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**110.** The conventional solvent used in dry cleaning process is



**Answer: A**



**Watch Video Solution**

**111.** Which of the following is best used for purification of drinking water

A. hydrogen peroxide

B. chlorine

C. sulphur dioxide

D. ozone

**Answer: D**



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**112.** Green chemistry means such reactions which

- A. Produce colour during reactions
- B. Reduce the use and production of hazardous chemicals
- C. Are related to the depletion of ozone layer
- D. Study the reactions in plants

**Answer: B**



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**113.** Which of the following practices will not come under green chemistry ?

- A. If possible , making use of soap made of vegetable oils instead of using synthetic detergents.

- B. Using  $H_2O_2$  for bleaching purpose instead of using chlorine based bleaching agents
- C. Using bicycle for travelling small distances instead of using petrol/diesel based vehicles .
- D. Using plastic cans for neatly storing substances.

**Answer: D**



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**114.** Which one of the following can be recycled ?

- A. Garbage
- B. DDT
- C. Plastic
- D. Nuclear waste

**Answer: C**



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**115.** In which of the following pairs , both of them are common greenhouse gases?

- A. Oxygen , water vapour
- B. Methane, carbondioxide
- C. Ozone, Sulphurdioxide
- D. Nitric oxide chlorofluoro carbons

**Answer: B**



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## OBJECTIVE EXERCISE - 2 (Environmental segments and terms )

**1.** The pair of chemicals that maintain heat balance in troposphere are

A.  $H_2O$ ,  $NO^{\oplus}$

B.  $CO_2$ ,  $O_2^{\oplus}$

C.  $O^{\oplus}$ ,  $O_3$

D.  $N_2$ ,  $O_2$

**Answer: A**



**Watch Video Solution**

**2. Which is not responsible for environmental pollution**

A. Industrialisation

B. Deforestation

C. Increase in population

D. Photosynthesis

**Answer: D**



**Watch Video Solution**



3. Modes of controlling pollution in large cities include

- A. A
- B. B
- C. C
- D. All

**Answer: D**



**Watch Video Solution**

4. TLV value associated with most toxicity

- A. 2 ppm
- B. 10 ppm
- C. 20 ppm

D. 60 ppm

**Answer: A**



**Watch Video Solution**

5. A sample of pond water contains 40mg of organic matter requires 32mg of dissolved oxygen. If pond water contains 100mg of organic matter per two litres, BOD value of the water sample is.

A. 10 ppm

B. 20 ppm

C. 30 ppm

D. 40 ppm

**Answer: D**



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6. The BOD values of four samples of water A,B,C and D are 165 ppm, 120ppm, 20ppm and 5ppm respectively . The most polluted and least polluted water sample are

A. A & B

B. B & C

C. C & D

D. A & D

**Answer: D**



**Watch Video Solution**

7. 100 ml of a sample of water requires 0.98mg of  $K_2$  ( $M. W. = 294$ ) in presence of the  $H_2SO_4$  for the oxidation of dissolved organic matter in it. The COD of the water sample is

A. 78.4 ppm

B. 1.6 ppm

C. 3.2 ppm

D. 6.4 ppm

**Answer: B**



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8. Grams of oxygen required to be present in water for healthy growth of plants and animals is .

A. 1 to 2

B. 2 to 3

C. 3 to 4

D. 4 to 6

**Answer: D**



**View Text Solution**

9. Which of the following is/are primary pollutant,,

(A) Ozone (B)  $SO_2$  (C)  $SO_3$  (D)  $NO_2$  PBN

A. A,C and E

B. B and D

C. A,B and D

D. C,D,E

**Answer: B**



**Watch Video Solution**

10. A sample of pond water containing 20mg of organic matter requires 16 mg of dissolved oxygen. (Pond water contains 10mg of organic matter per 2 litres). It's BOD is

A. 4000 ppm

B. 400 ppm

C. 4 ppm

D. 40 ppm

**Answer: C**



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11.  $10^{-3}$  gm equivalents of  $K_2Cr_2O_7$  in 50%  $H_2SO_4$  is needed to oxidise all the organic matter present in 1 lit of water. Then COD of water is

A. 1

B. 10

C. 12

D. 8

**Answer: D**



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12. 100 ml of sample of water requires 3.92 mg of  $K_2Cr_2O_3$  in presence of  $H_2SO_4$  for the oxidation of dissolved organic matter present in it. The COD of the water sample in ppm

A. 3.1

B. 6.4

C. 12.4

D. 8.2

**Answer: B**



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## OBJECTIVE EXERCISE - 2 (Atmospheric pollution)

1. When rain is accompanied by a thunderstorm, the collected rain water will have a pH value

A. uninfluenced by occurrence of thunder storm

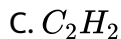
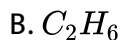
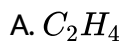
- B. which depends on the amount of dust in air
- C. slightly lower than that of rain water without thunderstorm
- D. slightly higher than when the thunderstorm is not there.

**Answer: C**



**Watch Video Solution**

2. When organic substance undergoes degradation through bacteria , the hydrocarbon formed is



**Answer: D**



**Watch Video Solution**



3. Which of the following statements is false?

- A. Photochemical smog causes irritation in eyes
- B. Classical smog a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN Classical of PAN
- D. Classical smog is oxidising in nature

**Answer: D**



**Watch Video Solution**

4. The smog is essentially caused by presence of

- A.  $O_2$  and  $O_3$
- B.  $O_3$  and  $N_2$
- C. Oxidies of sulphur and nitrogen

D.  $O_2$  and  $N_2$

**Answer: C**



**Watch Video Solution**

**5. Which of the following statements is false ?**

- A. Photochemical smog causes eye irritation
- B. London smog is a mixture of smoke and fog
- C. Photochemical smog results in the formation of PAN
- D. London smog is oxidising in nature

**Answer: D**



**Watch Video Solution**

**6. Gases responsible for acid rain are**

A.  $CO$ ,  $CO_2$

B.  $NO$ ,  $NO_2$

C.  $CO_2$ ,  $SO_2$

D.  $NO_2$ ,  $SO_2$

**Answer: D**



**Watch Video Solution**

7. Green house gases radiate back the following radiations to the earth surface

A. U.V rays

B. Cosmic

C. Infrared

D. Gamma rays

**Answer: C**



Watch Video Solution

8. Which of the following is not the effect of acid rain

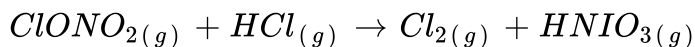
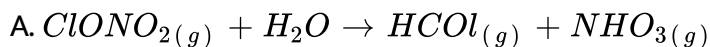
- A. The glossy nature of Tajmahal is affected
- B. The pH of the soil increases.
- C. Historical monuments of Rome are affected
- D. Soil fertility decreases.

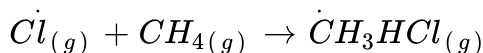
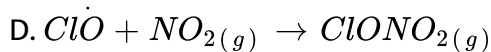
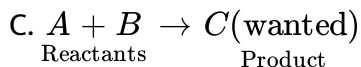
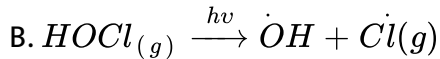
Answer: B



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9. Which of the following reaction causes depletion of ozone layer in summer season.





**Answer: D**



**Watch Video Solution**

**10.** Which of the following statements about ozone layer is true ?

A. Ozone layer is beneficial to us because ozone cuts out the ultraviolet radiation of the sun

B. The conversion of Ozone to oxygen is an endothermic reaction

C. Ozone is a triatomic linear molecule

D. Ozone layer is harmful as it cuts out radiation useful for Photosynthesis

**Answer: D**



**Watch Video Solution**

**11.** Which of the following is mainly responsible for depletion of ozone layer?

A. Methane

B. Carbon dioxide

C. Water

D. Chlorofluoro carbons

**Answer: A**



**Watch Video Solution**

**12.** Which of the following is true for classical smog?

- A. It occurs during warm weather
- B. It is reducing in nature
- C. It is a common feature over deserts
- D. It contain oxides of nitrogen

**Answer: B**



**Watch Video Solution**

**13. Which of the following is not a non-viable particulates**

- A. Smoke due to combustion of organic matter
- B. Pulvarised coal particles having the size 1 mm diameter
- C.  $H_2SO_4$  mist
- D. Fungi

**Answer: D**



**Watch Video Solution**

14. Three samples of water A,B and C have the D.O. values 1mg/l , 3mg/l , and 5 mg/l respectively . The more polluted sample of water is

A. Sample A

B. Sample B

C. Sample C

D. All are equal

**Answer: A**



**Watch Video Solution**

15. (A) : Nowadays , surface of earth gets heated up

(R) :  $CO_2$  and water vapour reflects Infrared radiations back to earth surface

The correct answer is



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

**Answer: A**



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**16.** Which one of the following contribute to the global warming ?

- A.  $H_2$ ,  $NO_2$ ,  $SO_2$
- B.  $SO_2$ ,  $SO_3$ ,  $O_2$
- C.  $N_2$ ,  $C_2H_6$ ,  $SO_3$
- D.  $CO_2$ ,  $CH_4$ ,  $CFCs$

**Answer: B**



**Watch Video Solution**

17. CFC's are effective scavengers for ozone due to

- A. Photolysis reaction of  $O_2$  producing Cl radicals
- B. Photolytic decomposition of  $O_3$  producing  $O_2$
- C. Photolytic decomposition of CFC's producing Cl radicals
- D. Oxidation ability

**Answer: D**



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18. Incomplete combustion of petrol in automobile engines can be detected by testing the fuel gases for the presence of

- A.  $H_2O$
- B. CO
- C.  $NO_2$

D.  $SO_2$

**Answer: B**



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19. The species formed in the depletion of ozone layer by chlorofluorocarbons in free radical mechanism is

A.  $ClO^*$

B.  $F^*$

C.  $O_2F_2$

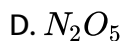
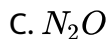
D.  $ClO_2$

**Answer: C**



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20. Among the oxides of nitrogen , a brown coloured gas is



**Answer: B**



**Watch Video Solution**

21. The type of bond formed by CO with haemoglobin of blood is

A. Covalent

B. Dative

C. Ionic bond

D. Vanderwalls forces

**Answer: B**



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**22.** Russia wanted to ban supersonic jets because

- A. They travel with high speed
- B. They are prone to accidents
- C. Their cost is high
- D. The gases coming from jets deplete the ozone layer

**Answer: D**



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**23.** Pickup the correct statements

- A. CO which is major pollutant resulting from the combustion of fuels in automobiles plays a major role in photo chemical smog.
- B. Photochemical smog occurs in daytime whereas classical smog occurs in early morning.
- C. Classical smog has an oxidising character while photochemical smog has reducing character.
- D. Classical smog is good for health but not photochemical smog .

**Answer: B**



**Watch Video Solution**

**24.** The concentration of nitrate ion in drinking water if exceeds 500 ppm, it results in:

- A. Kidney damage
- B. Laxative effect

C. Methemoglobinemia

D. Liver damage

**Answer: C**



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## OBJECTIVE EXERCISE - 2 (Water pollution)

1. Increase in concentration of pollutant by the process of food chains is called

A. Eutrophication

B. Bioamplification

C. Defluoridation

D. Biological oxidation

**Answer: B**



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2. Phosphate pollution is caused by

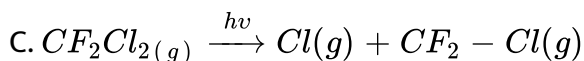
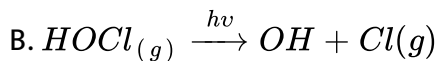
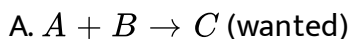
- A. Weathering of phosphate rocks only
- B. Agricultural fertilizers only
- C. Phosphate rocks and sewage
- D. Sewage and agricultural fertilizers

Answer: D

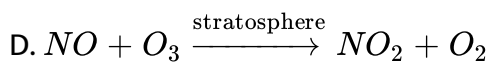


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3. Which of the following is environmental friendly reaction







**Answer: A**



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**4. Which is incorrectly matched?**

- |    | Disease     | Cause                    |
|----|-------------|--------------------------|
| A. | Fluorosis   | Fluorides in water       |
| B. | Minamata    | Mercury in fishing water |
| C. | Chlorosis   | Nitrogendioxide          |
| D. | Skin cancer | Ozone hole               |

**Answer: C**



**Watch Video Solution**

5. (A) : Soil becomes infertile due to acid rain

(R) : Due to acid rain pH of the soil increases

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

**Answer: C**



**Watch Video Solution**

6. Correct statement regarding industrial waste

- A. It is bio degradable
- B. It is mostly non Biodegradable
- C. It causes air pollution only
- D. It causes soil pollution only

**Answer: B**



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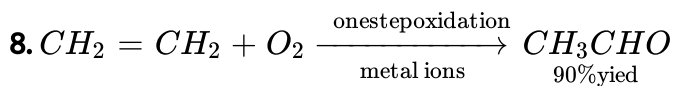
7. Sewage containing organic waste should be disposed in water bodies because it causes major water pollution . Fishes in such a polluted water die because of

- A. Large number of mosquitoes
- B. Increase in the amount of dissolved oxygen.
- C. Decrease in the amount of dissolved oxygen in water
- D. Clogging of gills by mud.

**Answer: C**



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Oxidation states of metal ions used

A. +2, +4

B. +2, +2

C. -2, -3

D. +2, -3

**Answer: B**



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9. (A) Recycling waste to useful products

B) Sewage treatment

C) Green chemistry implementation

Correct related to waste disposal

A. A only

B. B only

C. C only

D. All

**Answer: D**



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**10.** Fish die in water bodies polluted by sewage due to

A. Pathogens

B. Foul smell

C. Decreases in D.O below 4ppm

D. Clogging of gills by silt

**Answer: A**



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11. Chief source of soil and water pollution is

- A. Agro industry
- B. Thermal power plant
- C. Mining
- D. All the above

**Answer: D**



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12. 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	4) Erosion of soil by strip mining
	5) Detergents

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	1	4	2

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	5	3	1

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	3	2	4

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	2	1	5

**Answer: A**



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**13.** Tolerable limits of lead and fluorides in drinking water according to international standard are respectively

A. 50ppm and 3ppm

B. 50ppb and 1ppm

C. 50ppm and 5ppm

D. 1ppm and 50ppm

**Answer: B**



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**14. Which of the following is environmental friendly reaction**

A.  $A + B \rightarrow C$  (wanted)

B.  $HOCl_{(g)} \xrightarrow{h\nu} OH + Cl_g$

C.  $CF_2Cl_{2(g)} \xrightarrow{h\nu} Cl_{(g)} + CF_2 - Cl_{(g)}$

D.  $NO + O_3 \xrightarrow{\text{strato sphere}} NO_2 + O_2$

**Answer: A**



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### OBJECTIVE EXERCISE - 3 (Recent AIPMT/NEET Questions)

1. The greenhouse effect is because of the

- A. Presence of gases, which in general are strong infrared absorbers, in the atmosphere
- B. Presence of  $CO_2$  only in the atmosphere
- C. Presence of  $O_3$  and  $CH_4$  in the atmosphere
- D.  $N_2O$  and chlorofluorocarbons in the atmosphere.

**Answer: A**



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2. Which one of the following statements is not true ?

- A. pH of drinking water should be between 5.5 and 9.5

- B. concentration of DO below 6ppm is good for the growth of fish
- C. clean water would have a BOD value of less than 5 ppm
- D. oxides of sulphur, nitrogen and carbon are the most widespread air pollutant.

**Answer: C**



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**3. Green chemistry means such reactions which**

- A. produce colour during reactions
- B. reduce the use and production of hazardous chemical
- C. are related to the depletion of ozone layer
- D. study the reactions in plants

**Answer: C**



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4. Which one of the following statements regarding photochemical smog is not correct?

- A. Photochemical smog is formed through photochemical reaction involved solar energy
- B. Photochemical smog does not cause irritation in eyes and throat
- C. Carbon monoxide does not play any role in photochemical smog formation
- D. Photochemical smog is in oxidising agent in character

**Answer: C**



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5. Which one of the following statements is not true ?

- A. Dissolved oxygen (DO) in cold water can reach a concentration up to 10 ppm.
- B. Clean water would have a BOD value of 5 ppm.
- C. Fluoride deficiency in drinking water is harmful . Soluble fluoride is often used to bring its concentration upto 1 ppm.
- D. When the pH of rain water is higher than 6. It is called acid rain.

**Answer: D**



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6. The gas leaked from a storage tank of the union Carbide plant in Bhopal gas tragedy was

- A. Ammonia
- B. Phosgene
- C. Methylisocyanate

D. Methylamine

**Answer: C**



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7. Roasting of sulphides gives the gas X as a by product. This is a colorless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as it results in acid rain. Its aqueous solution is acidic and acts as a reducing agent, and its acid has never been isolated. The gas X is

A.  $SO_2$

B.  $CO_2$

C.  $SO_3$

D.  $H_2S$

**Answer: A**



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8. Which of the following is not common component of photochemical smog?

- A. Ozone
- B. Acrolein
- C. Peroxyacetyl nitrate
- D. Chlorofluorocarbons

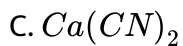
**Answer: D**



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9. The product obtained when atmospheric nitrogen reacts with calcium carbide

- A.  $CaCN_2$
- B.  $Ca_2CN$



**Answer: A**



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**10. Which of the following is a sink for CO ?**

A. Plants

B. Haemoglobin

C. Micro organisms present in the soil

D. Oceans

**Answer: C**



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