

Board of Studies: Chemistry

Class: TYBSc (Chemistry)

Subject Code: CHEM3506(D)

Subject: Environmental and Green Chemistry

Semester: V

Question Bank

Q.1) Multiple Choice Questions (1 marks)

1. Which of the following can be called contaminant ?

- a) CO b) SO₂ c) Ar d) Cl₂

2. Source of lead pollution is

- a) Lead chloride b) Lead bromide c) Leaded gasoline d) Galena

3. When concentration of pollutant is less than ppt , it is expressed in the following unit .

- a) ppm b) molecules/cm³ c) microgram/m³ d) ppb

4. Which of the following gas occurs naturally in atmosphere in trace amount ?

- a) CO₂ b) Cl₂ c) N₂O d) Ar

5. The sink for CO is

- a) Sea b) Soil c) Air d) Trees

6. Natural SPM is

- a) Soot b) Fly ash c) Spores d) Smoke

7. Oxygen molecule loses electron mainly in

- a) Troposphere b) Stratopause c) Mesopause d) Thermosphere

8. is the minor component of atmosphere .

- a) O₂ b) CO₂ c) H₂O d) NO₂

9. The photochemical smog is characterized

- a) Eye irritation b) Head ache c) Giddiness d) Foul smell

10. Which of the following gas is not formed during denitrification?

- a) N₂ b) N₂O c) NO d) NH₃

11. Anaerobic microorganism do not produce
- a) H_2S b) NH_3 c) CO_2 d) CH_4
12. BOD can be determined after collecting the sample .
- a) 10 days b) Immediately c) 5 days d) 1 hours
13. Stratification of a lake occurs during
- a) Spring b) Summer c) Autumn d) All the above seasons
14. are used against fungi .
- a) Insecticides b) Fungicides c) Herbicides d) Bactericides
15. A large part of the earth surface is covered by
- a) Lithosphere b) Biosphere c) Hydrosphere d) Thermosphere
16. The antiknocking agent added in petrol is
- a) TEL b) $C_2H_4Br_2$ c) $PbBrCl$ d) PbO_2
17. In turbulant troposphere pollutant usually get
- a) Trapped b) Diluted c) Concentrated d) Stagnated
18. Acid rain is caused by dissolution of atmospheric in rain water .
- a) CO_2 b) NO_2 c) Both (a) and (b) d) None of (a) and (b)
19. BHT is an
- a) Oxidant b) Reductant c) Antioxidant d) none of these
20. In BOD measurement polluted water is allow to undergo for 5 days .
- a) Oxidation b) Eutrophication c) Biodegradation d) Reduction
21. Lean fuel is a mixture of
- a) Fuel + air b) Fuel + water c) Fuel + fuel d) Air + air
22. The chemical formula of nitrous oxide is
- a) NO b) NO_2 c) NO_3 d) N_2O
23. What is the percentage of oxygen in air ?
- a) 21% b) 20% c) 20.94% d) 21.94%
24. Each Cl atom is estimated to destroy O_3 molecule in stratosphere .

a) 10^4 b) 10^3 c) 10^2 d) 10^5

25. Which of the following constitutes lithosphere ?

a) Polar ice cap b) Mantle c) Glacier d) Ground water

Q.2) Answer in one sentence (1 marks)

1. Define sink .
2. What is Residence time ?
3. Name the segment of environment .
4. What do you mean by B.O.D. ?
5. What is dissolved oxygen ?
6. What do you mean by Albedo ?
7. Give any two sources of SOX .
8. Define temperature inversion .
9. What is the residence time of N₂O in troposphere ?
10. Give the sink of NOX .
11. Define Humicsubstances .
12. Name any two organic pollutants .
13. Define alkalinity of water sample.
14. Name any two inorganic pollutants .
15. What is meant by biodegradation ?
16. Give any two examples of green solvent.
17. Name any two sources of Renewable energy .
18. What is meant by risk ?
19. What is meant by Supercritical fluid ?
20. Define Green chemistry .
21. Give the name of natural herbicides and pesticides .
22. Name any two supercritical liquids .
23. Give any two alternative to organic solvents .

24. Name any two green catalyst.

25. Define Speciation.

26. What is ozone depletion ?

Q.3) Write short notes on the following (2 to 4 marks)

1. Pathway of pollutant

2. Biosphere

3. Null and holding cycles

4. Chlorofluorocarbons

5. Reducing smog

6. Eutrophication

7. Oil pollution

8. Reduction of Risk

9. Waste Reduction and Waste Prevention

10. Catalysis for Green Chemistry

11. Use of biomaterials as feedstock

12. Green catalysts

13. Sources of renewable energy

14. Green solvents

15. Cardle to Cardle approach

16. Environmental pollution

17. Biodegradation of pesticides

Q.4) Give short answers to the following (2 to 3 marks)

1. Explain the contaminant with suitable examples .

2. What is C.O.D. ?

3. Explain the term Speciation giving example.

4. What are the atmospheric sink of NOX and SOX ?

5. Name the regions of atmosphere with sign of lapse rate.

6. What is the role of stratosphere in atmosphere ?

7. Explain Ozone chemistry in atmosphere .

8. Explain chlorine chemistry in atmosphere .

9. What is the effect of CO pollutant on humans ?

10. Explain the acid rain due to air pollution.

11. Give an account of organic particulate matter.

12. What do you meant by marine pollution ?

13. Mention any two pesticides .

14. Explain Minamata disaster.
15. What is environmental chemistry ?
16. Write short note on Risk of Non Risks .
17. Give examples of biocatalysis .
18. Give examples of green solvents .
19. Mention the examples of green catalyst.
20. What is advantages of supercritical liquids as solvents ?

Q.5) Long answer questions (5 marks)

1. Explain the relation between ppm and ppb /ppt /pphm
2. What are hydrocarbon ? Explain sources , sinks and concentration profile of HC .
3. Explain inorganic particulate matter with suitable examples .
4. Explain the mechanism of ozone depletion .
5. Discuss in brief The Bhopal disaster .
6. Explain the term water pollution . Give classification of water pollutants .
7. Discuss the microbially mediated aquatic reactions involving Nitrogen transformation .
8. What do you mean by thermal pollution of water ?what are its consequences ?
9. Give examples of Green Chemistry as seen in nature .
10. What is green product ? Give examples .
11. What do you understand by photocatalysis ? Explain the mechanism .
12. What is the effect of hazardous solvents on environmental and workers of a chemical industry.
13. Which are the new methods of organic synthesis which of do not use solvents ?
14. Explain the scientific areas for practical applications of green chemistry .
15. Explain the use of Green technology for sustainable chemistry .