St. Michael Polytechnic College

St. Santhiyagappar Nagar

Kalayarkoil-630 551.

DEPT: **BASIC ENGGYEAR/SEMESTER**: **I /I**

SUB.NAME: **ENGG CHEMISTRY-I**

Each question carries 1(one) mark in PART-A and 6(SIX) marks in PART-B

UNIT-I

PART-A

1. Define molecule.

2. Define molecular mass.

3. Define mole.

4. State Avogadro's hypothesis.

5. What is the relation between vapor density and molecular mass?

6. Define gram molecular volume.

7. What is the value of molar volume of a gas at STP?

8. What is Avogadro's number?

9. What is the value of Avogadro's number?

10. Define Equivalent mass.

11. Define Gram equivalent mass.

12. State Arrhenius concept of acids and bases.

13. State Lowry-Bronzed concept of Acid and Bases.

14. Define Lewis acid.

15. Define Lewis base.

16. AlCl3 (or) BF_3 is called as Lewis acid. Why?

17. Define pH (or)poH.

18. Define buffer solution.

19. Define chemical bond.

20. Define ionic bond (or) electrovalent bond.

PART-B

1. What is the application of Avogadro's hypothesis?

2. Derive the relationship between molecular mass and vapor density of a gas.

3. How will you determine equivalent mass or a metal (Ca or Mg) by oxide method ?

4. Explain Lowry-Bronsted theory of acid and base.

5. Give the Application of pH in industries.

6. Explain the formation of NaCl of ionic boning.

****

UNIT-II

PART-A

1. What is a solution?

2. Define molarity.

3. What is a molar solution?

4. Define molality.

5. Define Normality.

6. Write any two reasons for the depletion of underground water.

7. What is rain water harvesting?

8. Define Soft water.

9. Define hard water.

10. What is the cause for carbonate hardness?

11. What is the expansion of EDTA?

12. What is sterilization?

13. Define ionic solid. Give an example.

14. What is a unit cell?

15. What is bcc solid? Give examples.

PART-B

1. Write a note on rainwater harvesting.

2. What are the disadvantages of hard water?

3. How will you estimate the total hardness of a water sample by EDTA method.

4. Explain Ion exchange process of softening hard water.

5. Write a note on any two types of solids (or) Explain bcc and fcc packing with suitable example

6. Explain hcp packing with suitable example.

****

UNIT-III

PART-A

1. What is colloid?

2. Give any two examples for colloid?

3. Define Lyophilic colloid.

4. How is smoke precipitated?

5. What is Electrophoresis?

6. What is tanning of leather?

7. What is nano technology?

8. What are nano-particles?

9. Give any one applications of nano – particles in tissue engineering?

10. Define Photochemistry

11. Define Fluorescence

12. What is the role of Chlorophyll in green leaf?

13. Mention the disadvantages of deforestation.

14. Give any two harmful effects of CO_2?

15. Define Photoelectric cell.

PART – B

1. Distinguish between true solution and colloidal solution?
2. Write notes on (i) Tyndall effect (ii) Brownian movement
3. Give the important applications of nano-particles in medicine?
4. Write notes on (i) Fluorescence (ii)Phosphorescence
5. Explain Chemiluminescence?
6. Write a note on (i) Light reaction (ii) Dark reaction

****