B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
I Year II Semester
Core Major - Paper IV
GENERAL CHEMISTRY -IV

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. What is specific rotation?
2. Define diastereoisomers.
3. What is meant by collision number?
4. Calculate the root mean square velocity of oxygen at 300 degree Kelvin.
5. Explain the term parachor.
6. Define vapour pressure.
7. MgSO4 is more soluble in water than BaSO4. Why?
8. Write two exceptional properties of lithium.
9. Define degree of ionisation.
10. What is buffer action?
11. What is plane of symmetry?
12. State Joule - Thomson effect.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Explain Walden inversion with its mechanism.
14. Explain Maxwell's theory of distribution of molecular velocities.
15. What is viscosity? How is it measured?
16. Compare the hydroxide and carbonates of alkali metals.
17. What is common ion effect? Explain with examples.
18. Discuss the optical activity of biphenyl derivatives.
19. Derive the gas laws from kinetic theory of gases.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. (a) Explain the optical isomerism of tartaric acid.
    (b) Describe the geometrical isomerism with suitable examples.
21. Derive Van der Waal's equation and write its limitations.
22. (a) What are liquid crystals? Discuss the different types and the structure of liquid crystals.
    (b) What is meant by surface tension? Explain how stalagmometer is used in the determination of surface tension of a liquid?
23. (a) Compare halides, sulphates and hydroxides of alkaline earth metals
    (b) Describe the exceptional properties of beryllium.
24. (a) Write short note on 'pH scale'.
    (b) Discuss dissociation constant of mono, di and triprotic acids.

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