B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
III Year V Semester
Inorganic Chemistry - I

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

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

Answer any **TEN** questions

1. What are Isotopes? Give examples.
2. Define – N/P ratio curve.
3. What are magic numbers?
4. Define – Mass defect.
5. Write the Group displacement law.
6. Mention any four uses of immiscible solvents.
7. What is meant by steam distillation?
8. What is Beer – Lambert's law?
9. Write the principles of infrared spectroscopy.
10. Mention the mutual exclusion principle.
11. What are the types of nanoparticles?
12. Write any four applications of nanomaterials.

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

Answer any **FIVE** questions

13. Explain the salient features of Liquid – drop model.
14. Explain the properties of α, β and γ rays.
15. Write note on nuclear fusion and nuclear fission reactions.
16. Explain the fractional crystallization techniques.
17. Explain the types of stretching and bending vibrations.
18. Explain the preparation of nanoparticles by Physical Vapour Deposition method.
19. Write note on Stoke's and anti Stoke's lines.

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

Answer any **THREE** questions

20. Write note on nuclear isomerism and nuclear forces.
21. Describe the detection and measurement of radioactivity by Geiger – Muller counter method.
22. Describe the Soxhlet extraction method with diagram.
23. Discuss the principle, Instrumentation and applications of Raman spectroscopy.
24. Describe the synthesize of nanoparticles by Sol-gel method.

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