B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
III Year V Semester
Core Major - Paper IX
INORGANIC CHEMISTRY - I

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

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

Answer any **TEN** questions

1. Define an isobar.
2. What are magic numbers?
3. State Group displacement law.
4. What is half life period.
5. d-block elements are called as Transition elements,Why?
6. Salts of Zinc, Cadmium and Mercury are white. Why?
7. Give the important oxidation states of lanthanides.
8. Write any two uses of Cerium compounds.
9. Define nanomaterials.
10. What is caloric value of a fuel? Name its unit.
11. List out the superior properties of nano materials.
12. What is Mass defect?

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

Answer any **FIVE** questions

13. Explain the effect of n/p ratio in the stability of nucleus.
14. How is radioactivity of a substance measured by GM counter?
15. Discuss the variation of atomic radii in a period and group of Transition metals.
16. What is lanthanide contraction? Mention its consequences.
17. Mention the advantages of gaseous fuels over other types of fuels.
18. Explain sol-gel method of synthesis of nanomaterials.
19. Discuss the applications of sodium and potassium in biological system.

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

Answer any **THREE** questions

20. Explain the following

    a. Pi-meson theory on nuclear forces.

    b. Liquid drop model.

21. Differentiate nuclear fission and nuclear fusion reactions.
22. With suitable examples discuss the magnetic properties of transition metals.
23. Compare Lanthanides and Actinides.
24. How are the following produced a) Water gas. b) semi water gas. c) carburetted water gas.

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