M.Sc DEGREE EXAMINATION,APRIL 2019
I Year I Semester
Inorganic Chemistry - I

Time : 3 Hours   **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. Give two examples for an Isopolyacid.
2. Define the term heteropolyacid.
3. State Wade's rule.
4. What do you understand by the term metal clusters?
5. Write two limitations of VB theory.
6. Differentiate between weak and strong acid.
7. Draw the structure of EDTA.
8. With an example define the term Schiff base.
9. Identify two differences between complementary and non-complementary reactions.
10. Mention the term trans effect.
11. Provide two examples for Chelating agents.
12. Define the term Nephlelauxetic effect.

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. Give an account on the structure of silicates.
14. Write a method of synthesis of diborane and mention is reaction with oxygen and water.
15. Provide the assumptions associated with crystal field theory.
16. Explain about hard and soft acids and bases with examples.
17. With an example describe substitution in square planar complexes.
18. Account for the following: masking and demasking reagents.
19. Illustrate charge transfer spectra with an example.

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

Answer any **THREE** questions

20. Draw and explain one heteropolyacid of vanadium and chromium.

21. Write a note on carboranes and metallo-carboranes.

22. Account for the following: d-orbital splitting in octahedral and tetrahedral complex.

23. Explain crown ethers and cryptands with an example.

24. Give an account of outer and inner sphere reaction.

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