

Exam. Code : 103202

Subject Code : 1297

B.A./B.Sc. 2nd Semester

CHEMISTRY

(Inorganic Chemistry—II)

Time Allowed—3 Hours]

[Maximum Marks—35

PART—A

Note :— Attempt ALL questions. Each question carries 1 mark.

1. Which oxide of carbon is the anhydride of carbonic acid ?
2. Why PF_3 is known but NF_3 is not ?
3. Write down the formula of Plaster of Paris.
4. Which salt of calcium is found in bones ?
5. What is a Lewis base ? Give an example.
6. What is the main cause of color in KMnO_4 ?
7. Predict the number of unpaired electrons in the high spin Cr(II) complex.
8. Name the geometries possible for coordination number 5.

PART—B

Note :— Attempt **TWO** questions from each section. Each question carries $4\frac{1}{2}$ marks.

SECTION—I

9. (a) What are the most stable oxidation states of carbon and tin ? Why is there any difference ?
- (b) Give reasons why CO_2 is a gas and SiO_2 is a solid ?
10. Give two examples of oxoacids of nitrogen. Discuss the Ostwald process for the preparation of Nitric Acid.
11. What is catenation ? Discuss with the help of examples.

SECTION—II

12. How is silicon tetrachloride prepared ? Discuss its properties.
13. How is fluorine different from other halogens ? Discuss in detail.
14. Draw and discuss the structure of tetrasulfur tetranitride. Comment on the electron distribution in the ring.

SECTION—III

15. How do the stabilities of various oxidation states and ability to form complexes vary in transition elements ? Explain with the help of examples.

16. Which of the M^{2+} and M^{3+} ions of the first row transition elements are stable in aqueous solution ? Which are oxidizing and which are reducing ?
17. How is the magnetic behaviour of 3rd row transition elements different from the elements of 1st and 2nd row transition series ? Explain with the help of examples.