

B. Sc. II Year (IIIrd Semester)
Paper- VIII (CH- 201) Inorganic Chemistry (Theory)
M. Marks: 32 **Time: 3 Hrs.**

Note: Nine questions will be set. **Q. No. 1**, based on whole syllabus, is compulsory. There will be four questions from section **A** and four from section **B**. Candidates will be required to attempt five questions in all, selecting at least two questions from each section. Question no. 1 carry 8 marks and all questions in Section A & B (not more than 2 - 3 parts) carry 6 marks each .

Section – A (23 periods)

Chemistry of d-Block elements

Definition of transition elements, position in the periodic table, General characteristic properties of d-Block elements, Comparison of properties of 3d elements with 4d and 5d elements with reference only to ionic radii, oxidation state, magnetic and spectral properties and stereo chemistry.

Stability of various oxidation states and e.m.f (Latimer and Frost diagrams), Structure and properties of some compounds of transition elements- TiO_2 , VOCl_2 , FeCl_3 , CuCl_2 and $\text{Ni}(\text{CO})_4$.

Section – B (22 periods)

Coordination Compounds

Werner's theory of coordination compounds, effective atomic number, chelates, nomenclature of coordination compounds, Isomerism in coordination compounds, valence bond theory of transition metal complexes.

Non-aqueous solvents

Physical properties of solvents, types of solvents and their general characteristics, reactions in non-aqueous solvents with reference to liquid NH_3 and liquid SO_2 .

