



CHJ-7201 Seat No. _____

M. Sc. (Sem. I) Examination

November - 2019

Chemistry : Paper - IV - CHNN - 401

("Inorganic Chem.") (New Course)

Time : 2 1/2 Hours

[Total Marks : 70

Instruction : All questions are compulsory.

1 Answer any two of the following in detail : 18

- (1) Explain the V.S.E.P.R. theory with appropriate examples.
- (2) Explain the atomic inversion by proper illustration.
- (3) Write short notes on :
 - (i) $d\pi - p\pi$ bonding
 - (ii) Bent rule.

2 Answer in detail : (any two) 17

- (1) What is chelate effect ? Explain the chelate effect with appropriate example and thermodynamic origin for metal complexes.
- (2) Explain the spectrophotometric method for determination of binary formation constant.
- (3) Explain the factors affecting the stability of the metal complexes.

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3 Answer any two of the following in brief :

- (1) Explain the inert and labile complexes with taking appropriate examples.
- (2) Explain the electron transfer reactions.
- (3) What is trans effect ? Explain the substitution reaction in square planar complexes of Pt.

4 Answer any two of the following :

- (1) Explain the M.O. theory for octahedral complexes of CO. (III).
- (2) Explain the Tanabe - Sugano diagram for the d^2 case.
- (3) Calculate the C.F.S.E. value for the following complexes :

