

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name: Inorganic Chemistry-II**Subject Code: 4SC06CHC1****Branch: B.Sc.(Chemistry)****Semester: 6****Date: 11/04/2017****Time: 02:30 To 05:30****Marks: 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

- Q-1** **Attempt the following questions:** **(14)**
- a) Define: Poly-nuclear metal carbonyl. **(1)**
 - b) Give limitation of polarization theory. **(1)**
 - c) Define: Laporte forbidden rule. **(1)**
 - d) Calculate microstate for p^2 . **(1)**
 - e) Give any one preparation for $\text{Fe}(\text{CO})_5$. **(1)**
 - f) Find out ground state term for the following set of term symbol.
 $^3F, ^3P, ^1G, ^1D, ^1S$. **(1)**
 - g) How many terminal B-H bonds found in pentaborane -10? **(1)**
 - h) Give formalytic pairs for d^1, d^2, d^3, d^4 . **(1)**
 - i) Define: Hund's rule **(1)**
 - j) Draw the structure of $\text{Fe}_3(\text{CO})_{12}$. **(1)**
 - k) Define: Hole formalism. **(1)**
 - l) Define: Spherical charge symmetry of d orbitals. **(1)**
 - m) Define: π acid ligands. **(1)**
 - n) Define: Trans effect. **(1)**

Attempt any four questions from Q-2 to Q-8

- Q-2** **Attempt all questions** **(14)**
- a) Draw and explain combine Orgel energy level diagram for D and F term splitting. **(7)**
 - b) Calculate possible term for d^2 and draw the Pigeon hole diagram. **(7)**
- Q-3** **Attempt all questions** **(14)**
- a) Discuss the preparation and properties and structure of $\text{Fe}_2(\text{CO})_9, \text{Ni}(\text{CO})_4$. **(8)**
 - b) Write a note on Metal Nitrosyls. **(6)**
- Q-4** **Attempt all questions** **(14)**
- a) Draw and explain MO diagram for $[\text{PtCl}_4]^{-2}$. **(7)**
 - b) Discuss various types of bond found in higher boranes and explain structure of B_4H_{11} . **(7)**



