Enrollment No:	Exam Seat No:
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C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Inorganic Chemistry-II

Subject Code: 4SC06CHC1 Branch: B.Sc.(Chemistry)

Semester: 6 Date: 19/05/2016 Time: 2.30 To 5.30 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)
V 1	a)	Give the full form of R-S coupling.	(1)
	b)	Define: Laporte selection rule	(1)
	c)	Define: Hole formalism	(1)
	d)	Give any one preparation for $Fe_3(CO)_{12}$.	(1)
	e)	Define: Spherical charge symmetry of d orbitals	(1)
	f)	Give the shape of $Fe(CO)_{5}$.	(1)
	g)	Define: Trans effect	(1)
	h)	Define: Lability	(1)
	i)	Define: π acid ligands	(1) (1)
	.j)	How many briged B-H-B bonds are found in pentaborane-9?	(1) (1)
	k)	Give any two limitations for VBT.	(1)
	l)	Find microstate for p^2 .	(1) (1)
	m)	Find ground state term for the following set of term symbol.	(1) (1)
	111)	³ P, ⁵ S, ⁴ P, ² D, ¹ S	(1)
	n)	Define: Mononuclear metal carbonyl	(1)
Attemp	ot any i	four questions from Q-2 to Q-8	
Q-2		Attempt all questions	(14)
	A.	Find term symbol of p^2 and f^2 .	(5)
	В.	Discuss Jahn Teller distortion.	(5)
	C.	Calculate total microstate for Cr and excited state of Ti*.	(4)
Q-3		Attempt all questions	(14)
~ ~	A.	Explain particles in three dimentional box.	(7)
	В.	Discuss Schrodinger wave equation for hydrogen atom.	(7)
	₽,	2 10 1 10 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	(1)

Q-4		Attempt all questions	(14)
	A.	Discuss the structure of Mn ₂ (CO) ₁₀	(7)
	B.	Explain Metal Nitrosyls	(7)
Q-5		Attempt all questions	(14)
	A.	Explain substitution reaction of square planar complexes with suitable example.	(7)
	B.	Give any two mechanisms for trans effect.	(7)
Q-6		Attempt all questions	(14)
	A.	Explain molecular orbital diagram of [PtCl ₄] ⁻²	(5)
	В.	Discuss various types of bond found in higher boranes and structure of B_4H_{10} .	(5)
	C.	Give the differences between trans influence and trans effect.	(4)
Q-7		Attempt all questions	(14)
	A.	Discuss the structure of Ni(CO) ₄ .	(5)
	В.	Explain synthetic application of trans effect.	(5)
	C.	Draw combine Orgel energy level diagram for D and F term splitting.	(4)
Q-8		Attempt all questions	(14)
•	A.	Calculate possible term for d ² and draw the Pigeon hole diagram.	(7)
	В.	Discuss Hamiltonian operator.	(7)

