	Enrollme	nt No:		Exam Seat No:			
				UNIVERSITY			
	Summer Examination-2022						
	Subject N	lame: Inor	ganic Chemistry-IV				
	Subject Code: 4SC06ICH1			Branch: B.Sc. (Chemistry)			
	Semester:	: 6	Date: 02/05/2022	Time: 02:30 To 05:30	Marks: 70		
	(2) In (3) D	se of Programments of Programment of Programment of States of Programment of States of Stat	written on main answer	any other electronic instrument is p book are strictly to be obeyed. necessary) at right places.	rohibited.		
Q-1	a) b) c) d) e) f) g) h) i) k) l) m)	Find spin in Define "M Calculate in Write spect Write Schills d ⁸ system What is M Who gave What do y What is bat Electronic	m in Oh shows Jahn Telletal Ligand Charge Trans "Valance Bond Theory" ou mean mononuclear mack bonding? configuration of boron in center-2 electron bond.	ectron moving in 1 dimension. ler effect? nsfer transition? "? netal carbonyl?	(14) 01 01 01 01 01 01 01 01 01 01		
Atte	empt any fo	our questic	ons from Q-2 to Q-8				
Q-2	a)	Write Hun		on of ground state spectral term. e ground state term for d^3 .	(14) 8 6		



a) Explain Leporte selection rule and spin selection rule for electronic spectra.

b) Derive Schrodinger equation in polar coordinates for hydrogen atom.

Q-3

Attempt all questions

(14)

6

8

Q-4		Attempt all questions	(14)
	a)	Derive equation of electron in three dimensional box.	14
Q-5		Attempt all questions	(14)
	a)	Discuss the structure of Ni (CO) ₄ .	7
	b)	Explain the structure of Cr (CO) ₆ .	7
Q-6		Attempt all questions	(14)
-	a)	Write π -bonding theory for "Trans effect".	7
	b)	Explain Kurnakov test.	7
Q-7		Attempt all questions	(14)
	a)	Explain B-H-B three center two electron bonds	8
	b)	Draw structure and explain bonding in B_5H_9 and B_5H_{11} .	6
Q-8		Attempt all questions	(14)
-	a)	Explain molecular orbital diagram of [Fe(CN) ₆] ⁴	7
	b)	Discuss the molecular orbital diagram of [Fe(F) ₆] ⁴⁻	7

