647510 **MSC2CIcC101x** **Seat No :_____**

M.Sc.(Chem.) Semester - 2 (*CBCS*) Examination
March/April – 2025 (As Per Syllabus Year-2018)
Inorganic Chemistry (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1(A)	**Answer the following.**	**(04)**
	(1) Briefly Explain anti-ferromagnetism? Define its characteristics.	
Que-1(B)	**Answer any two questions out of three.**	**(10)**
	(1) Write a note on magnetic properties of actinides.	
	(2) Derive the equation for multiplet width comparable to Kt.	
	(3) Deduce the equations for LS coupling.	
Oue-2(A)	**Answer the following.**	**(04)**
	(1) Discuss hydride and dihydrogen ligand containing complexes.	
Que-2(B)	**Answer any two questions out of three.**	**(10)**
	(1) Explain the addition and dissociation reaction in OMC.	
	(2) Discuss in detail about ligands similar to CO.	
	(3) Give reaction and mechanism of Monsanto process.	
Que-3(A)	**Answer the following.**	**(04)**
	(1) Briefly explain Hemerythrin (He), Hemocyanin (Hc).	
Que-3(B)	**Answer any two questions out of three.**	**(10)**
	(1) Explain metalloporphyrin and oxygen carrier in biological system.	
	(2) Write a detail note on iron-sulphur protein.	
	(3) Discuss the detoxification and chelating agents in medicine.	
Que-4(A)	**Answer the following.**	**(04)**
	(1) Write a Briefe note on silicone polymers.	
Que-4(B)	**Answer any two questions out of three.**	**(10)**
	(1) Explain borazine polymers in detail.	
	(2) Write a detailed note on zeolites.	
	(3) Give the classification of silicates in detail	
Que-5(A)	**Answer the following.**	**(04)**
	(1) Briefly discuss the types and classification of nanomaterials.	
Que-5(B)	**Answer any two questions out of three.**	**(10)**
	(1) Explain the cause of interest in nanomaterials.	
	(2) Discuss any four-synthesis pathway of nanomaterial.	
	(3) Discuss selected application of nanomaterials.	

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