

--	--	--	--	--	--	--	--	--	--



**Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET UNIVERSITY)**

M.Sc. (Second Semester - Regular) Examinations, May - 2026

24MCYPC12002 – Inorganic Chemistry-II

(M.Sc Chemistry)

Time: 3 hrs

Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. What type of bonding exists between metal and CO?	CO1	K1
b. Explain anation reaction of co-ordination compounds.	CO5	K1
c. What is Ligand Substitution?	CO3	K1
d. Calculate STYX number of B ₄ H ₈ .	CO2	K2
e. Explain Labile complex.	CO4	K1

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

	Marks	CO #	Blooms Level
2. a. Explain the difference between stepwise stability and overall stability constants.	8	CO4	K2
b. What is kinetics stability?	2	CO1	K1
(OR)			
c. Explain factors affecting stability constants of complexes referring to the properties of ligands.	10	CO3	K2
3.a. Write the preparation, properties and structures of Phosphazines.	10	CO2	K2
(OR)			
b. Write down the preparation properties of Borides and classify the borides.	10	CO3	K2
4.a. Write the preparation, properties and structures of Co ₂ (CO) ₈ .	10	CO2	K2
(OR)			
b. Calculation of Metal- Metal bond and structure of the following complexes. Mn ₂ (CO) ₁₀ , Fe ₂ (CO) ₉ , Os ₄ (CO) ₁₄ , Fe ₃ (CO) ₁₂	10	CO1	K2
5.a. Write down a note on acid hydrolysis reaction with their factor affecting.	10	CO5	K2
(OR)			
b. Write a detailed note on the conjugate base mechanism in substitution reactions of octahedral complexes.	10	CO3	K2
6.a. Discuss the preparation, bonding and important reactions of transition metal cyanide complexes.	10	CO4	K2
(OR)			
b. Explain the preparation, bonding and important reactions of transition metal complexes with dinitrogen (N ₂ complexes).	10	CO4	K2

--- End of Paper ---