QP CODE: D4BCH2401	(Pages: 2)	Reg. No	: .....
		Name	: .....

FOURTH SEMESTER FYUGP EXAMINATION, APRIL 2026

Discipline Specific Core (DSC) Courses - Major

CHE4CJ203 : INORGANIC CHEMISTRY II

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)

1.	Describe the structure and bonding of any two of the following nitrogen oxides (i) NO (ii) NO_2 (iii) N_2O (iv) N_2O_4.	BL2	CO1
2.	Discuss the important uses of Helium (He) and Neon (Ne).	BL1	CO1
3.	Distinguish between normal and inverse spinels.	BL2	CO3
4.	What are isopoly anions? Give an example of tungsten isopoly anion.	BL2	CO2
5.	How does geometrical isomerism arise among coordination complexes? Illustrate with an example.	BL1	CO3
6.	Mention any three industrial applications of lanthanides.	BL2	CO2
7.	Differentiate between smelting and electrolytic reduction.	BL2	CO4
8.	Compare brass and bronze with respect to composition and uses.	BL2	CO4
9.	What is the ion-exchange method of refining metals? Mention one application.	BL2	CO4
10.	What is chemical concentration of ore? Give an example.	BL3	CO4

Section B

Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)

11.	Describe the preparation and structure of boric acid and boron nitride.	BL2	CO1
12.	Define the inert pair effect. Discuss its origin and explain how it affects the stability of oxidation states and the chemical reactivity of p-block elements. Illustrate your answer with suitable examples.	BL2	CO1

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13.	Define interhalogen compounds. Discuss their classification, general formula (XY, XY_3, XY_5, XY_7) and explain their preparation methods with suitable examples.	BL2	CO1
14.	What are ion-exchange resins? How are they used in lanthanide separation?	BL2	CO2
15.	Δt is less than Δo. Explain.	BL2	CO3
16.	What are the postulates of VBT as applied to complexes?	BL1	CO3
17.	Discuss the crystal field splitting in tetragonal complexes.	BL2	CO3
18.	What is an Ellingham diagram? Explain its construction and significance in the extraction of metals.	BL3	CO4
	Section C		
	Answer any one question. Each carries 10 marks (1 x 10 = 10 Marks)		
19.	Write briefly on the application of co-ordination compounds in qualitative and quantitative analysis.	BL2	CO3
20.	Describe the extractive metallurgy of titanium. List the applications of titanium.	BL2	CO4
	CO : Course Outcome		
	BL : Bloom's Taxonomy Levels (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)		