Name:

Enrolment No:

UPES
End Semester Examination, May 2025

Course: Economic Geology **Semester: VI**
Program: B.Sc. (Hons.) Geology **Time : 03 hrs.**
Course Code: PEGS3049 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q.1	Identify four primary reasons that underscore the importance of studying economic geology.	**[4M]**	**CO1**
Q,2	Outline the characteristic features and mode of formation of stratiform ore deposits, along with suitable examples.	**[4M]**	**CO1**
Q.3	Match the following: **Metal** — **Ore Mineral** 1. Copper — 1.Bauxite 2. Nickel — 2.Cassiterite 3. Lead — 3.Smithsonite 4. Zinc — 4.Pentlandite 5. Manganese — 5.Rutile 6. Aluminum — 6.Galena 7. Titanium — 7.Psilomelane 8. Tin — 8. Chalcocite	**[4M]**	**CO1**
Q.4	Explain the process of formation of contact metasomatic deposits with examples.	**[4M]**	**CO2**
Q.5	Apply the principles of the UNFC system to assign the correct code to a limestone deposit characterized by proven reserves, economic viability, ongoing production, and a high-confidence feasibility study.	**[4M]**	**CO3**

SECTION B
(4Qx10M= 40 Marks)

Q.6	Define Metallogenic Epoch. Describe the significance of the Precambrian Metallogenic Epoch in India highlighting some important mineral deposits of India of this epoch.	**[2+8= 10M]**	**CO1**
Q.7	Distinguish between magmatic dissemination deposits and magmatic segregation deposits in terms of their genesis, textural characteristics, mineral associations, and economic significance. Support your answer with suitable geological examples. **OR**, Explain the process of sublimation and Evaporation in ore deposits and illustrate your answer with suitable examples of economically important ore deposits formed by this process.	**[5+5=10 M]** **[5+5=10 M]**	**CO2**
Q. 8	A processing plant receives 80,000 tonnes of ore with an average grade of 5% Ni. The plant has a recovery rate of 75%. Compute the final yield (in tonnes) of nickel from this operation.	**[10M]**	**CO3**
Q.9	Demonstrate how structural and geobotanical guides can be effectively applied in mineral exploration. Support your answer with examples showing their relevance in identifying potential ore-bearing zones.	**[10M]**	**CO3**
SECTION-C (2Qx20M=40 Marks)			
Q.10	Examine the geological setting, mode of occurrence, and genesis of bauxite deposits in India illustrating the major manganese-producing regions and infer the economic significance of these deposits in the context of industrial applications, **OR,** Illustrate the geological distribution, mode of occurrence, genesis, and economic importance of copper deposits in India highlighting the major manganese-producing states.	**[20M]**	**CO4**

Q.11	Four Trenches have been dug across a hilly bauxite deposit. The average ore thickness and polygonal areas given below. Compute the total reserve and weighted average grade **Trench** | **Ore Thickness (m)** | **Area (m^2)** | **Density (t/m^3)** | **Al_2O_3 Grade (%)** **T1** | **3.5** | **1800** | **2.5** | **45** **T2** | **4.0** | **2200** | **2.5** | **47** **T3** | **2.5** | **1600** | **2.5** | **44** **T4** | **3.0** | **1400** | **2.5** | **46**	**[20M]**	**CO3**