

Reg. No.:



Name:

University of Kerala

U8712

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

CHEMISTRY

UK2DSCCHE102 - ESSENTIALS OF INORGANIC CHEMISTRY

Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	Write the chemical formula of carbonate anion.	RE	4
2	Name one type of crystal system.	RE	2
3	Write the Henderson equation.	UN	4
4	What types of ores are used for roasting?	UN	1
5	Mention the Bravais lattice of the orthorhombic system.	UN	2
6	Give the first artificial transmutation.	UN	3

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	What is meant by zone refining?	UN	1
8	Describe the concept of isotropy and anisotropy in crystals.	UN	2
9	Differentiate between nuclear fission and nuclear fusion.	AP	3
10	Classify the following oxides into acidic, basic, neutral, amphoteric CO ₂ , SO ₂ , NO, CaO, ZnO, CO, Al ₂ O ₃	AP	4

Qn No.	Question	CL	CO
11	A) Explore the classification of liquid crystals and identify their potential applications in modern technology. OR B) Illustrate crystal structure determination by single crystal and powder diffraction methods.	AP	2, 2
12	A) Elemental nitrogen cannot be absorbed by plants. Discuss OR B) Debate on the pros and cons of levelling effect with suitable examples.	AN	4, 4
13	A) Analyze the differences in the metallurgy of iron and titanium focusing on their extraction process and refining methods. OR B) Describe the method of extraction of thorium from monazite.	EV	1, 1
14	A) Construct the diagram of scintillation counter and explain its working. OR B) b. A fresh sample of wood has a radioactivity of 10 disintegrations per minute, while an old sample has one disintegration per minute. Estimate the age of the old sample given that the half life of ^{14}C is 5570 years.	CR	3, 3