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School of Basic Sciences
Bachelor of Science Honours in Chemistry
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem III - C1UB303B - Chemistry of Group Elements

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Summarise the complexes of EDTA with calcium and magnesium. K2 (2)
- 2) Why atomic radii are different from ionic radii in alkali metals? K1 (3)
- 3) Copper and silver are below hydrogen in the electrochemical series and yet they are found in the combined state as sulphides in nature. Illustrate. K2 (4)
- 4) Explain the process of 'Zone refining' using diagram. K2 (6)
- 5) Utilize the principles of refining of metals by the following methods : K3 (6)
(i) Electrolytic refining (ii) Zone refining (iii) vapour phase refining.
- 6) Apply the statement that a strong acid has a weak conjugate base and a strong base has a weak conjugate acid. K3 (9)
- 7) Compare the principle of the following process in detail : K4 (8)
(i) Hydrometallurgy (ii) Mond's process (iii) van Arkel-de Boer process (iv) Electrolytic refining
- 8) Analyze the wet cyanide process and name the metal ions for which this process is used. K4 (12)

OR

Analyze the role of Ellingham diagram in deciding the reducing nature of Carbon and Carbon monoxide. K4 (12)