GALGOTIAS UNIVERSITY

ADMISSION NUMBER

School of Basic Sciences

Bachelor of Science Honours in Chemistry
Semester End Examination - Jul 2024

Duration : 180 Minutes
Max Marks : 100

Sem IV - C1UB403B - Electrochemistry and Magnetism

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)	Define Arrhenius theory of electrolytic dissociation.	K1(3)
2)	Explain Faraday's laws of electrolysis.	K2(4)
3)	Explain Kohlrausch's Law of Independent Migration of Ions and its significance in the study of electrolyte solutions.	K2(6)
4)	Illustrate the application of EMF measurements in determining free energy, enthalpy, and entropy changes for a cell reaction.	K3(6)
5)	Illustrate the relationship between free energy and EMF.	K3(6)
6)	Illustrate the degree of dissociation of weak electrolytes by using conductance measurement.	K3(9)
7)	Illustrate diamagnetism and paramagnetism.	K3(9)
8)	Analyze the construction and components of a typical glass electrode.	K4(8)
9)	Analyze the difference between diamagnetism and paramagnetism based on their response to external magnetic fields.	K4(12)
10)	Examine transference numbers in the context of electrolyte solutions. What do transference numbers represent, and how are they experimentally determined?	K5(10)
11)	Examine the application of EMF measurements in determining equilibrium constants, and pH values by using hydrogen, quinone-hydroquinone, glass electrodes.	K5(15)
	OR	
	Examine the Nernst equation.	K5(15)
12)	Elaborate degree of dissociation of weak electrolytes, Conductometric titrations and Hydrolysis constants of salts.	K6(12)
	OR	

Compare solubility and solubility product of sparingly soluble salts, Conductometric titrations and Hydrolysis constants of salts. K6(12)