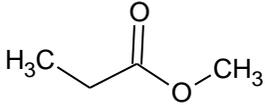
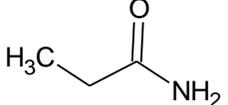
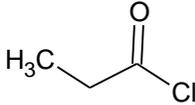
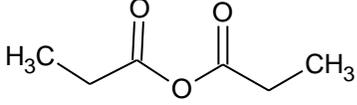


Name:			
Enrolment No:			
UPES End Semester Examination, December 2023			
Course: SPECE & FGOE (Chemistry) Program: B Sc (H) Geo/ B Sc (H) Phy/B Sc (H) Math (GE) Course Code: CHEM1009G		Semester: III Time : 03 hrs. Max. Marks: 100	
Instructions: <ol style="list-style-type: none"> 1. Write your enrolment number on the top left of the question paper 2. Do not write any thing else on the question paper except your enrolment number 3. Attempt all part of a question at one place only 4. Internal choice is given for question number 9 of Section B and question number 11 of Section C only. 			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	How many triple points are in the phase diagram of Sulphur system. Explain them briefly.	4	CO1
Q 2	The molar conductances of CH ₃ COONa, HCl and NaCl at infinite dilution are 95x10 ⁻⁴ , 434.18x10 ⁻⁴ and 133.24x10 ⁻⁴ S m ² mol ⁻¹ , respectively at 25°C. Calculate the molar conductance at infinite dilution for CH ₃ COOH.	4	CO1
Q 3	How will justify that glucose has one aldehydic group and one primary hydroxyl group.	4	CO2
Q 4	What is Nernst distribution law?	4	CO2
Q 5	Give a brief account on isoelectric point and zwitter ions.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	Describe the following: a) Mutarotation b) Enantiomers and Diastereomers	5+5	CO1
Q 7	Propose synthesis of the following from propanoic acid. i) 	10	CO3

	<p>ii) </p> <p>iii) </p> <p>iv) </p>		
Q 8	Elucidate the terms maximum boiling azeotrope and minimum boiling azeotrope?	10	CO3
Q 9	<p>Explain the role of</p> <p>a) Salt bridge in an electrochemical cell</p> <p>b) Reference electrode in potentiometric titration</p> <p style="text-align: center;">OR</p> <p>a) Can we use a silver vessel to store 1M ZnSO₄ solution? Give appropriate reason.</p> <p>Given $E^{\circ}_{\text{Zn}^{2+}/\text{Zn}} = -0.76 \text{ V}$ and $E^{\circ}_{\text{Ag}^{+}/\text{Ag}} = 0.80 \text{ V}$</p> <p>b) 0.1 N solution of a salt placed between two platinum electrodes, 30cm apart and an area of 4cm² has a resistance of 35Ω. Calculate the equivalent conductance of the solution.</p>	10	CO2
SECTION-C (2Qx20M=40 Marks)			
Q 10	<p>a) Draw and explain phase diagram of Silver and lead system.</p> <p>b) Explain the following tests.</p> <p>i) Hinsberg test</p> <p>ii) Carbylamine test</p>	10+10	CO2
Q 11	<p>a) Explain Ruff degradation in detail.</p> <p>b) Briefly explain the following reactions</p> <p>i) Perkin's reaction</p> <p>ii) Reaction of glucose with Bromine water</p> <p style="text-align: center;">OR</p> <p>a) Explain Killani Fischer synthesis in detail</p> <p>b) Briefly explain the following reactions</p> <p>i) Reformatsky reaction.</p> <p>ii) Reaction of glucose with conc. HNO₃</p>	10+10	CO3