1. Answer any three:
   (a) Explain Amperometric titrations in detail.
   (b) Derive Ilkovic equation.
   (c) Discuss the polarographic method to determine stability constant of a complex
   (d) Explain the following (i) Biamporometric titration (ii) Types of current in Polarography

2. Answer any three:
   (a) Explain concentration profiles at micro electrode surface during electrolysis.
   (b) Discuss the following in AC Polarography (i) Peak Current equation (ii) Peak Polarogram
   (c) Explain differential pulse polarography in detail.
   (d) Discuss square wave polarography.

3. Answer any three:
   (a) Discuss solid state electrode in potentiometry.
   (b) Explain sulphide ion and calcium selective ion electrodes.
   (c) How will you determine selectivity coefficient from Separate and Mixed Solution method?
   (d) Explain (i) Enzyme electrode (ii) SO₂ electrode (iii) NH₃ electrode

[Contd...]
Answer any four:

(a) Explain importance of Faradic current.
(b) Explain interference of oxygen DME in polarography.
(c) Write a note on $O_2$ and $CO_2$ sensing gas electrode.
(d) Explain electro-capillary maxima.
(e) Write a note on acid and alkali error.