UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – Spring 2022

Roll No. .....

Paper: Analytical Chemistry (Sp. Theory-I) **Course Code: CHEM-431** **Time: 3 Hrs. Marks: 60**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short answers to the following questions. (15x2=30)

i. What are three basic mechanisms of mass transport in voltametry?
ii. Differentiate between cathodic current and anodic current in polarography.
iii. Describe the role of inert supporting electrolyte in polarography.
iv. How sputtering takes place in glow discharge?
v. Automation possesses some disadvantages. Describe them.
vi. Write down the principle of amperometry.
vii. How glow discharge atomization takes place?
viii. Distinguish between fixed automation and flexible automation.
ix. How conductance is measured?
x. Write down the basic principle of conductometric titrations.
xi. Give disadvantages of anodic stripping voltammetry.
xii. Distinguish between migration current and residual current.
xiii. Describe amperometric titrations involving electro-reducible vs electro-oxidiseable species.
xiv. What is difference between arc and spark?
xv. What is the effect of charge and size of ions on conductivity?

Q.2. Write detailed answers to the following questions. (6x5=30)

i. Discuss arc and spark sources.
ii. Explain how conductometric titrations are applied in complexometric and participations reactions.
iii. Discuss instrumentation in amperometric titrations.
iv. Discuss the construction and working of voltametric cell.
v. Discuss in detail the factors affecting the limiting current.
vi. Polarography is applied to organic and inorganic substances. Explain it details.