UNIVERSITY OF THE PUNJAB

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

Roll No. .....

Paper: Analytical Chemistry **Course Code: CHEM-319** **Time: 3 Hrs. Marks: 60**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions. (15x2=30)

i. Define ion exchange capacity and give its formula?
ii. Why is it necessary to keep resin hydrated during Ion exchange chromatography?
iii. What is the principle of gel chromatography?
iv. Differentiate between simple and multiple extraction system?
v. How does ion exchange chromatography help in softening of hard water?
vi. What is separation efficiency of metal chelates?
vii. Why is solid phase extraction better than liquid phase extraction?
viii. What is Basic principle of AAS?
ix. What are the characteristics of air acetylene flame?
x. Why low temperature is used for alkali and alkaline earth metals?
xi. What is the role of complexing agents in metal extraction?
xii. How is solvent extraction governed by partition law?
xiii. How does electrophoresis help in gene and genome analysis?
xiv. What are the characteristics of anion exchange resins?
xv. What causes the red feather observed in the Nitrous oxide acetylene flame?

Q.2 Write brief answer of following. (6x5=30)

a) Write down the working and characteristics of hollow cathode lamp.
b) Briefly explain the process of packing of column and separation in gel chromatography?
c) Explain countercurrent process in solvent extraction.
d) Explain capillary zone electrophoresis.
e) Describe process of flow injection analysis in solvent extraction.
f) What is basic principle of Gel chromatography? Briefly explain different types of gels used.