UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2019

Paper: Analytical Chemistry

Course Code: CHEM-319 Part – I (Compulsory) **Time: 15 Min. Marks: 10**

Roll No. in Fig. .....

Roll No. in Words. .....

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Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct choice. **(1x10=10)**

(i) Which of the following is not application of flame emission photometer?.
- a) Analysis of biological fluid
- b) Determination of sodium and potassium ions in soil analysis
- c) Determination of metal
- d) Analysis of complex mixture

(ii) Solvent extraction is controlled by
- a) Distribution law
- b) Dilution law
- c) Particle size
- d) All

(iii) Ether layer is used to separate
- a) Fiber
- b) Inorganic impurity
- c) Organic impurity
- d) Gases

(iv) Absorbed wavelength is AAS appear as
- a) Dark background
- b) Dark lines
- c) Light background
- d) None

(v) In flame emission photometer, the measurement of _____ is used for qualitative analysis
- a) Color
- b) Intensity
- c) Velocity
- d) Frequency

(vi) Laminar flow burner, used in flame photometer is known as
- a) Turbulent burner
- b) Premix burner
- c) Total consumption burner
- d) Nozzle mix burner

P.T.O.

(vii) In Gel electrophoresis, how do we make DNA migrate through the gel

a) Gravity
b) Place a positive electrode away from wells
c) Large fragments drift to end of the gel
d) Place a negative electrode away from wells

(viii) Ion exchange resin is

a) Linear
b) Low molecule weight
c) Organic polymer with porous structure
d) Soluble

(ix) Which of the following is not component of emission system in flame photometer?

a) Burner
b) Atomizer
c) Fuel gases
d) Chopper

(x) The pH at which the net charge in the amino acid is zero

a) Isoelectric point
b) Isoelectric focusing
c) Capillary point
d) None

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B.S. 4 Years Program / Sixth Semester – 2019

Roll No. .....

Paper: Analytical Chemistry
Course Code: CHEM-319 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

SUBJECTIVE

Section I

Q.2- Attempt all Short questions **(2x10=20)**

(i) What is isoelectric point?
(ii) Differentiate between Flame photometry and atomic absorption spectroscopy.
(iii) Write examples of strong acid cationic resins.
(iv) What do you mean by percent extraction?
(v) Write principle of atomic absorption of spectroscopy.
(vi) Describe significance of Gel chromatography.
(vii) What do you know about electro osmotic flow?
(viii) How does ion exchange chromatography help in softening of hard water?
(ix) What is solid phase extraction?
(x) What is the role of complexing agents in metal extraction?

Section II

Attempt all questions. **(5x6=30)**

Q 3:

a) Explain all steps involved in flow injection analysis.
b) Discuss different types of resins
c) How are metals extracted by solvent extraction? Explain.
d) Write applications of flame emission spectroscopy.
e) Describe hydride generation in flameless method in AAS.
f) Discuss factors affecting ion exchange chromatography.