UNIVERSITY OF THE PUNJAB

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

Paper: Analytical Chemistry (Sp. Theory-I)

Course Code: CHEM-431 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 option. (10x1=10)

i- At which pressure of argon gas glow discharge takes place ?

(a) 1-10 torr (b) 100-200 torr (c) 10-200 torr (d) 200-1000torr

ii- Which ion possesses the highest equivalent conductivity at infinite dilution at 25^0c

(a) Cl^- (b) K^+ (c) Na^+ (d) H^+

iii- Which is the auxiliary electrode in polarography

(a) Glass (b) SCE (c) DME (d) Pt

iv- Which two parameters in Ilkovic equation are called capillary characteristics

(a) m and t (b) m and D (c) c and n (d) t and D

v Amperometry is sub class of

(a)Polarography (b) Voltametry (c) Coulometry (d) Potentiometry

vi-- Which type of materials are not analyzed by arc and spark sources

(a) metallic solids (b) Alloys

(c) Non metallic solids (d) gases

vii Which method is useful for the neutralization titration of phenol

(a) Conductometry (b) potentiometry (c) indicator method (d) amperometry

viii- The earliest voltametric technique was

(a) Amperometry (b) Polarography

(c) Anodic stripping votamet (d) cathodic stripping votametry

ix- The time for electrodeposition step in anodic stripping voltametry is

(a)1-30 minutes (b)) 10-60 sec (c) 1-5 minutes (d)30-100 sec

(x) What happens to conductance after equivance point in the addition of NaOH to HCl ?

(a) Decreases (b) Increases (c Remains constant (d) Decreases and then constant

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Roll No. ……

Paper: Analytical Chemistry (Sp. Theory-I)
Course Code: CHEM-431 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Section I

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

i – What is the effect of temperature on conductance of solution?

ii-. How sputtering takes place in glow discharge?

Iii-.Give the differences between arc and spark.

iv-How oxygen interferes in polarographic analysis ?

v-Distinguish between specific conductance and molar conductance.

vi- What do you know about residual current in polarography?

vii- What are the advantages and disadvantages of conductometric titrations?

viii Give the characteristic of supporting electrolyte to be used in polarography.

ix- Write down the basic principle of glow discharge technique?

x-. What are the limitations of Amperometry ?.

Section II

Attempt all questions

Q.3(a)-write down the principle and instrumentation of electrical arcs. (5)

(b)-. What is meant by diffusion current ? Discuss factors affecting it. (5)

Q.(4)-(a). Explain conductometric titrations involving

(I) Strong acid with strong base

(ii)Weak acid with strong base (5)

(b) Discuss the applications amperometry? (5)

Q.5- (a) Discuss anodic stripping voltametry. (5)

(b)- . Discuss various types of electrodes in polarography. (5)