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Y—189—2019

FACULTY OF SCIENCE

B.Sc. (Third Year) (Sixth Semester) (Backlog) EXAMINATION

OCTOBER/NOVEMBER, 2019

(CGPA Pattern)

ANALYTICAL CHEMISTRY

Paper XIV

(Modern Techniques of Chemical Analysis—II)

(Tuesday, 26-11-2019)   **Time : 10.00 a.m. to 12.00 noon**

Time—2 Hours   *Maximum Marks—40*

N.B. :— (*i*)   Attempt *All* questions.

(*ii*)   *All* questions carry equal marks.

(*iii*) Figures to the right indicate full marks.

(*iv*) Rewrite the complete MCQ one time on page number *three* only.

1.   Answer any *four* of the following :   4×2=8

(*a*)   Write a short note on ion exchange resin.

(*b*)   Explain the phenomenon of half wave potential.

(*c*)   Define conductance and specific conductance.

(*d*)   Give applications of supercritical fluide chromatography.

(*e*)   Explain in short curent maxima.

(*f*)   Define residual and migration current.

2.   Answer any *two* of the following :   2×4=8

(*a*)   Explain in detail Acid-Base potentiometric titration.

(*b*)   Discuss the principle of DC polarography and write its applications.

(*c*)   Describe in detail instrumentation of size exclusive chromatography.

P.T.O.

3. Answer any *two* of the following : 2×4=8

 (*a*) Discuss the Nernst equation.

 (*b*) Give an account of measurement of the conductance by using Wheat stone bridge apparatus.

 (*c*) Give the types of Ion exchange resins.

4. Answer any *one* of the following : 1×8=8

 (*a*) Describe in detail types of potentiometric titration.

 (*b*) Explain batch and column method of ion exchange chromatography.

5. (A) Choose the *correct* choice and rewrite the complete sentence with underline the correct answer : 5×1=5

 (*i*) The ratio of distance between the two electrode to the area of two electrode is called as ....

  (*a*) Specific conductance

  (*b*) Resistance

  (*c*) Conductance

  (*d*) Cell constant

 (*ii*) Nernst equation is used to determine :

  (*a*) Cell constant

  (*b*) Equilibrium constant

  (*c*) Both (*a*) and (*b*)

  (*d*) None of the above

 (*iii*) Mobile phase in ion exchange chromatography contains ....

  (*a*) Acids

  (*b*) Bases

  (*c*) Inorganic salts

  (*d*) Organic salts

(*iv*) Chromatography used for .... of a mixture.

    (*a*)   Preparation

    (*b*)   Separation

    (*c*)   Precipitation

    (*d*)   All the above

(*v*) Rotating platinum microelectrodes are used in ....

    (*a*)   Polarography

    (*b*)   Amperometry

    (*c*)   Potentiometry

    (*d*)   Conductometry

(B)   Write a short note on Ilkovic equation.   1×3=3