U.G. 5th Semester Examination - 2020

CHEMISTRY

[HONOURS]

Discipline Specific Elective (DSE)

Course Code : CHEM(H)-P-DSE-2A/PR

[PRACTICAL]

(Analytical Methods in Chemistry)

Full Marks : 20 Time : 2 Hours

The figures in the right-hand margin indicate marks.

Answer any **two** questions: 10×2=20

1. a) What is Retention factor (R_F) in Thin Layer Chromatography(TLC)?

   b) How would you separate a mixture of Sudan Yellow and Sudan Red by TLC technique?

   c) State the principle of paper chromatography.

   d) How would you separate and identify glucose and fructose in a mixture by paper chromatography? 1+3+2+4=10

2. a) What is solvent extraction?

   b) How would you separate Ni^{2+} from a mixture of Ni^{2+} and Fe^{2+} by complexation with DMG through solvent extraction?

   c) State the principle of determination of the concentration of the above separated Ni^{2+} by spectrophotometry. 2+5+3=10

3. a) What are cation exchange resins and anion exchange resins? Give examples.

   b) What do you mean by ion exchange capacity? How it is expressed?

   c) How exchange capacities of cation exchange resins and anion exchange resins are determined in batch method and column method? 2+2+(3+3)=10

4. a) What is the function to each of the following components of spectrophotometer? Radiation source, Photo tube, Prism, Shutter and Exit slit.

   b) How would you determine pKa value of an indicator using spectrophotometry? (1+1+1+1+1)+5=10

———————