

M.Sc. Examination, 2017
Semester-IV
Chemistry (Elective)
Course: CH-1022
(Inorganic Chemistry)

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin.

Answer *any four* questions.

1. a) What is sample clean up? Why it is urgent in analytical chemistry? Mention six different methods of sample clean up. 2+2+2
b) "Solvent extraction is guided by partition co-efficient" – Explain. 2
c) "A multiple extraction is more efficient than a single step extraction" – Explain. 2
 2. a) Write down the advantages of column chromatography over batch adsorption process. 2
b) How does the concentration of an analyte is increased by column chromatography? 2
c) What is preconcentration factor? Write down the mathematical expression of preconcentration factor. 2
d) What is R_f value? Give its significance in paper chromatography. 4
 3. a) What is reverse phase chromatography? What are the types of stationary and mobile phases are used in reverse phase chromatography? 4
b) What do you mean by eluant and elution profile. Explain the nature of elution profile by plate theory. 4
c) Write down the significance of retention factor. 2
 4. a) Write down the basic principle of AAS. 3
b) Discuss the role of uses the hollow cathod lamp in AAS. 3
c) Discuss about cationic and anionic interferences in AAS. 4
 5. a) Write a brief note on "Ionisation supressor" in Flame Emission Spectroscopy. 3
b) What is the significance of Saha's equation involved in Flam Emission Spectroscopy? 2
c) What do you mean by the spectral interference in AAS? 2
d) Discuss about different atomizers applicable in AAS. 3
 6. a) How can you quantitatively detect the toxic environmental pollutant through fluorescence spectroscopy? 5
b) Discuss the theory of fluorecence and phosphorescence. 3
c) What is quantum yield? Give its significance. 2
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