Roll No. 940

Total No. of Pages 02

B.Tech. (Group B)

SECOND SEMESTER

May-2014

END SEMESTER EXAMINATION

AC-104 APPLIED CHEISTRY

Time: 3:00 Hours *Max. Marks: 70*

Note: **Q. NO. 1** is compulsory.
Attempt any **FIVE** questions from remaining.
Assume suitable missing data, if any.

1(a) What do you understand by 'theory of indicators'? Explain taking the example of any two neutralization indicators. 5

(b) Hydrazine (N_2H_4) is used for rocket fuel. Calculate the atom economy for hydrazine production. 5

$$2NH_3 + NaOCl \longrightarrow N_2H_4 + NaCl + H_2O$$

2(a) Define and classify volumetric analysis. Write short note on redox titration. 6

(b) Define DSC. Explain the principle and significance of DSC. 6

3(a) Equal number of polymeric molecules with M_1 = 10,000 and M_2 = 100000 are mixed. Calculate polydipersity index. 6

(b) Draw schematic diagram of double beam UV-Visible spectrophotometer. Explain the term involved. 6

4(a) Classify polymer on the basis of tacticity. Explain the mechanism of anionic polymerization with suitable example. 6

(b) Write the characteristic IR Absorption Frequencies of the following Organic Functional Groups: O-H; N-H; NO_2; C=O for Aldehyde; C=O for ester; C≡N. 6

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5(a) Write any six principles of green chemistry. Explain any one in detail. 6

(b) What is a secondary battery? Write charging-discharging reactions taking place in Lead-Acid batteries. 6

6 (a) Define peptide bond. Explain the structure of proteins in detail. 6

(b) What is triple point of water? Draw the phase diagram of water system and explain. 6

7(a) Draw the phase diagram of Lead-Silver System. Explain the areas, curves, lines and points involved in the diagram. 6

(b) What do you understand by Electroplating? Explain the reactions involved by taking a suitable example. 6

8. Write short note on **any two** of the following: 12

(a) Use of Green Solvents

(b) Cellulose and their Derivatives

(c) Biodegradable Polymer

(d) Lithium-Ion Batteries

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