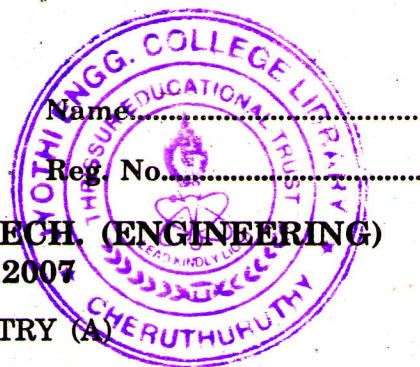


C 31669



COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, JUNE 2007

EN 2K 104 A—ENGINEERING CHEMISTRY (A)

(Common to AI, CS, EE, EC, IT and IC)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Write a note on Chalcogen photoconductors.
(b) At what glancing angle would the first order diffraction from (110) plane of KCl be observed using X-ray of wavelength of 150 pm? [The dimension of the unit cell is 315 pm].
(c) How does fuel cell differ from Battery ?
(d) 30 ml of 0.10 M NaOH is added to 100 ml of 0.10 M of acetic acid. Calculate the pH of the buffer solution. (K_a for Acetic Acid = 1.8×10^{-5}).
(e) Give an account of caustic embrittlement.
(f) Explain Filling bedworth rule with suitable examples.
(g) How is molecular weight of polymers and the chemical resistance related ?
(h) Draw the isotactic, atactic and syndiotactic structure of polypropylene.

(8 × 5 = 40 marks)

- II. (a) Explain the basis of Crystallography.

Or

- (b) List out the rules governing the formation of substitutional solid solution.

- III. (a) How is neutralization reactions carried out by emf measurements ?

Or

- (b) What is an electrochemical series ? How does it help us in predicting whether a redox reaction is feasible or not ?

- IV. (a) Explain the environmental factors influencing corrosion.

Or

- (b) List out few methods used to control air pollution.

- V. (a) What type of substances are added during the moulding of plastics and explain their roles.

Or

- (b) With neat diagrams explain the following properties of lubricants :

- (i) Viscosity index.
- (ii) Cloud point.
- (iii) Pour point.

(4 × 15 = 60 marks)