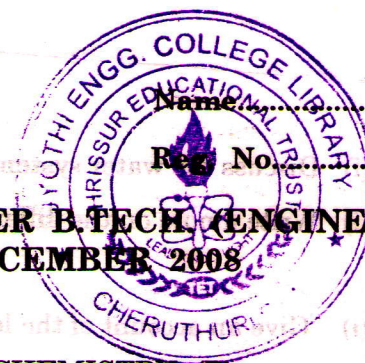


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(Pages 2)



**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, DECEMBER 2008**

Chemistry

EN 04 104 (B)—ENGINEERING CHEMISTRY (B)

(CE, ME, PE, AM)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

- I. (a) Outline the steps involved in the setting and hardening of cement. Give the relevant equations.
(b) Describe the ion exchange process of softening of water.
(c) How are polymers classified ?
(d) Write a note on solid lubricants.
(e) Define the terms : (a) Phase ; (b) component and ; (c) degree of freedom.
(f) Explain the different types of alloy steels and their uses.
(g) What are the constituents of paints ? Give their importance.
(h) Make a note on stratospheric ozone depletion.

(8 × 5 = 40 marks)

Part B

- II. (a) (i) Describe the manufacture of portland cement. **(8 marks)**
(ii) Give the principle involved in the extraction of nickel from its ore. **(7 marks)**
Or
(b) (i) Outline the lime soda process of softening of water. **(7 marks)**
(ii) Write a brief note on special cements. **(8 marks)**
III. (a) (i) Describe the important techniques of polymerisation. **(8 marks)**
(ii) Explain the mechanisms of lubrication. **(7 marks)**
Or
(b) (i) Outline any three methods of fabrication of plastics. **(8 marks)**
(ii) Define the terms 'cloud point' and 'fire point' of a lubricant. How are they determined ? **(7 marks)**

Turn over

- IV. (a) (i) Discuss the water system on the basis of phase rule. (8 marks)
 (ii) Write a note on the different types of nickel alloys. (7 marks)

Or

- (b) (i) Give an account of the lead-silver system on the basis of phase rule. (8 marks)
 (ii) Discuss the different types of light metal alloys and their uses. (7 marks)

- V. (a) (i) Give an account of the factors influencing corrosion. (8 marks)
 (ii) Mention some common pollutants and their origin. What are their effect on the environment ? (7 marks)

Or

- (b) (i) Write notes on :

1 anodisation of aluminium.

2 passivity of metals.

- (ii) Define the terms BOD and COD. How are they determined ? (8 marks)

[4 × 15 = 60 marks]