

COMBINED FIRST AND SECOND SEMESTER B. TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2608

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.

 $(8 \times 5 = 40 \text{ marks})$

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)

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IV. (a) (i) Discuss the water system on the basis of phase rule.			(8 marks)	
	Write a note on the differ	ent types of nickel alloys.		(7 marks)
(b) (i	 (b) (i) Give an account of the lead-silver system on the basis of phase rule. (ii) Discuss the different types of light metal alloys and their uses. V. (a) (i) Give an account of the factors influencing corrosion. 			(8 marks)
(ii				(7 marks)
V. (a) (i				(8 marks)
(ii) Mention some common	Mention some common pollutants and their origin. What are their effect on the		
	environment?	Part A		(7 marks)
(b) (i) Write notes on: 1 anodisation of alumin	lo gains flus lo ex coro agas		
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(ii	Define the terms ROD an	d COD. How are they deter		
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