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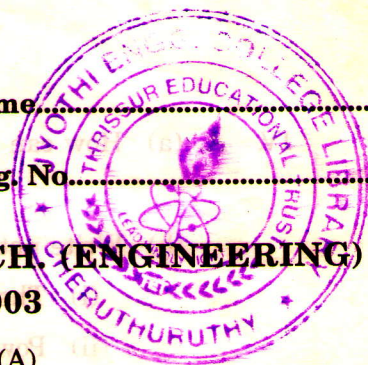
COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2003

EN 2K 104A—ENGINEERING CHEMISTRY (A)

(New Scheme)

(AI/CS/EE/EC/IT/IC)

Time : Three Hours   **Maximum : 100 Marks**

I. (a) What are superconductors ? Give examples.

(b) State free electron theory.

(c) What is a concentration cell ?

(d) Explain the term single electrode potential.

(e) What are organic surface coatings ?

(f) What are the causes of air pollution ?

(g) Write a note on Zieger Natta catalyst.

(h) Give the applications of polymers in industries.

(8 × 5 = 40 marks)

II. A. (a) Write notes on the following :—

(i) Ferro-electric materials.

(ii) Dielectric materials.

(8 marks)

(b) Derive Bragg's equation.   (7 marks)

Or

B. (a) What are conductors and resistors ? What are their applications ?   (7 marks)

(b) Discuss in detail on super conductors.   (8 marks)

III. A. (a) With an example give a detailed account on ionic and covalent solids.   (8 marks)

(b) Discuss in detail the working of a fuel cell.   (7 marks)

Or

B. (a) Define the terms over voltage and polarization.   (7 marks)

(b) Give the construction and functioning of a glass electrode with a neat sketch.

(8 marks)

Turn over

IV. A. (a) How can corrosion be controlled by (i) Sacrificial anoding ; (ii) Proper design ?

(7 marks)

(b) Write notes on the following :—

(i) Thermal pollution.

(ii) Power generation pollution.

(8 marks)

Or

B. (a) Define the following terms :—

(i) Pickling.

(ii) Solvent cleaning.

(7 marks)

(b) Give an account on organic surface coatings.

(8 marks)

V. A. (a) What are high polymers ? Give the classification of polymers.

(8 marks)

(b) Differentiate between addition and condensation polymerisation with examples.

(7 marks)

Or

B. (a) Give the correlation between the structure, properties and molecular weight of a polymer.

(8 marks)

(b) Write about the synthetic lubricants.

(7 marks)