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Total No. of Questions—8] [Total No. of Printed Pages—4

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212344

ENGINEERING CHEMISTRY-II—COURSE NO.—CHM-203

Time Allowed—3 Hours

Maximum Marks—100

Note :—Attempt five questions in all, selecting at least two questions from each Section. All questions carry equal marks.

Section A

1. (a) What is environment ? Discuss briefly the various segments of environment. 10
- (b) Discuss the adverse effects of air pollutants on humans, plants, buildings etc. 10
2. (a) What are the various sources of water pollution ? Suggest methods to control water pollution. 10
- (b) Explain the biochemical effects of Hg, Pb and Cd. Suggest antidotes for the toxic metals. 10

3. (a) Explain the setting and hardening of cement, using chemical equations. What is the role of gypsum in cement ? 10
- (b) Describe with a neat sketch the manufacture of lime. 10
4. (a) What is hardness of water ? Mention various units used for its expression and also show the relation among them. 8
- (b) Differentiate between scale and sludge and explain their formation. 6
- (c) How many grams of MgCO_3 dissolved per litre gives 96 ppm of hardness ? 6

Section B

5. (a) Give preparation, properties and uses of : 12
- (i) PMMA
- (ii) Alkyd resins.
- (b) What is meant by moulding ? Explain with neat diagrams compression and injection moulding of plastics. 8

6. (a) What is a rubber ? Differentiate between a natural rubber and an elastomer. Describe the preparation, properties and uses of styrene and nitrile rubbers. 12
- (b) Why is vulcanization of natural rubber necessary and how is it carried out ? 8
7. (a) Enumerate different constituents of a paint and discuss their role in paints. Give suitable examples. 10
- (b) How is paint manufactured in industry ? 6
- (c) What are the required characteristics of a good paint ? 4
8. Explain the following with giving suitable reasons : $5 \times 4 = 20$
- (i) Why are plastics indispensable in everyday life ?
- (ii) Why cannot thermosetting plastics be reused and reshaped ?

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- (iii) Why does rubber become stiff on stretching ?
- (iv) Why is virgin rubber considered useless as pure Gold ?
- (v) Why is there a change in the colour of paint film ?