

Faculty of Engineering & Technology
First Semester B.E. (C.B.S.) Examination
ENGINEERING CHEMISTRY

Paper—III

Time : Two Hours]

[Maximum Marks : 40

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **FOUR** questions as follows :
 - (i) Q. No. 1 OR Q. No. 2
 - (ii) Q. No. 3 OR Q. No. 4
 - (iii) Q. No. 5 OR Q. No. 6
 - (iv) Q. No. 7 OR Q. No. 8
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Diagrams and chemical equations should be given wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.
- (6) Discuss the reaction, mechanism wherever necessary.
- (7) Use of non-programmable calculator is permitted.

- (iii) Rusting of Iron is quicker in saline water than the ordinary water. 6
- (b) Discuss the various factors which influence the corrosion process. 4

OR

4. (a) Write short notes on [any Two] :—
- (i) Hot Dipping Process
 - (ii) Anodic Protection
 - (iii) Cathodic Protection by impressed current. 6
- (b) How corrosion can be prevented with proper design and material selection ? 4
5. (a) For what purpose are the following types of cement used and why :
- (i) Rapid hardening cement
 - (ii) Water proof cement
 - (iii) High Alumina cement
 - (iv) Low Heat cement ? 4
- (b) How is ordinary Portland Cement manufactured by wet process ? Give the various reactions taking place in the Rotary Kiln. Also state the significance of rate of cooling of clinkers. 6

OR

6. (a) What are the important process parameter for manufacturing of good cement clinkers ? 3

(Contd.)

- (b) What is setting and hardening of cement? Discuss with the help of reactions involved. 4
- (c) Write informative notes on cement additives. 3
7. (a) Write notes on :—
- (i) Carbon Credits
- (ii) Biocatalysis. 4
- (b) Define Green Chemistry. State its principles and explain any two principles with example. 4
- OR**
8. (a) Discuss supercritical fluid CO_2 with the help of its phase diagram. 4
- (b) Explain the working of Ni-Cd batteries with its advantages, limitations and applications. 4

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