



C14-C/CM-104

4017

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

DCE—FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND
ENVIRONMENTAL STUDIES

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Write any three differences between orbit and orbital.
2. Write any three properties of ionic compounds.
3. Define solute, solvent and solution.
4. Write conjugate acid and conjugate base for HSO_4 .
5. Define equivalent weight and electrochemical equivalent.
6. Define osmosis and reverse osmosis.
7. What are elastomers? Give two examples.
8. What are characteristics of good fuel?

- * 9. Define the terms (a) pollutant, (b) contaminant and (c) receptor.
10. What are renewable and non-renewable energy sources? Give examples.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.
 (2) Each question carries **ten** marks.
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (a) Write important postulations of Bohr's atomic theory. 6
 (b) Define coordinate covalent bond. Explain with example. 4
12. (a) Define equivalent weight. Calculate the equivalent weights of H_2SO_4 , NaOH and Na_2CO_3 . 5
 (b) Explain Arrhenius theory of acids and bases. 5
13. (a) Write any five differences between metals and non-metals. 5
 (b) Define alloy. Write the composition and uses of brass and German silver. 5
14. (a) What is electrolysis? Explain the electrolysis of fused NaCl . 5
 (b) Write the differences between electrolytic cell and galvanic cell. 5
15. (a) Define corrosion. Write the factors affecting corrosion. 5
 (b) Explain the formation of different types of cells in corrosion. 5
16. (a) Explain the softening of hard water by ion-exchange process with relevant equation. 6
 (b) Define temporary hardness and permanent hardness of water. 4

- * **17.** (a) Write the preparation and uses of the following plastics : 6
- (i) Polythene
 - (ii) PVC
 - (iii) Urea—formaldehyde resin
- (b) Explain the process of vulcanization of rubber. 4
- 18.** (a) Explain greenhouse effect and ozone layer depletion. 6
- (b) Define the following terms : 4
- (i) Producers
 - (ii) Consumers
 - (iii) Decomposers
 - (iv) Ecosystem
