



C14-EE/CHPP-104

4043

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2015

DEEE—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. Define orbital and draw the shapes of S and P orbitals.
2. Define oxidation number. Calculate the oxidation number of Mn in potassium permanganate.
3. Calculate the equivalent weight of H_2SO_4 and Na_2CO_3 .
4. State any three applications of buffer solutions.
5. Define conductor and insulator. Give examples.
6. State the salts responsible for hardness of water.

- * 7. Define elastomer. Give two examples of elastomers.
8. Classify the fuels based on their occurrence with examples.
9. Define BOD and COD.
10. Define renewable energy resources and 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) State the postulations of Bohr atomic model. 5
 (b) Write any five differences between ionic and covalent compounds. 5
12. (a) Define normality. Calculate the normality of 500 ml solution containing 5.3 grams of sodium carbonate (M. wt. of Na_2CO_3 = 106). 5
 (b) Discuss the Arrhenius concept of acids and bases. 5
13. (a) Explain roasting, calcination and smelting with examples. 6
 (b) Write a short note on electrolytic refining of metals. 4
- * 14. (a) State and explain Faraday's laws of electrolysis. 5
 (b) Certain quantity of electricity is passed through a aqueous solution of AgNO_3 and CuSO_4 connected in series. The amount of silver deposited at cathode is 1.08 grams. What amount of copper will be deposited (Atomic wt. of Ag = 108, At. wt. of Cu = 63.5)? 5

- * 15. (a) Define corrosion. Write any four factors that influence the rate of corrosion. 6
(b) Explain impressed voltage method. 4
16. (a) Distinguish between thermoplastics and thermosetting plastics. 4
(b) State any four reasons 'why we should discourage the usage of plastics'. 6
17. (a) Explain the softening of hard water by Permutit process. 6
(b) Define reverse osmosis. Mention its advantages. 4
18. (a) Write any five causes of water pollution. 5
(b) Write short notes on : 5
(i) Global warming
(ii) Ozone depletion
