



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
