



C14-M/CHOT/RAC-104

4052

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2015

DME—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.

1. Explain Hund's principle with example.
2. State three properties of covalent compounds.
3. Define mole. Find the no. of moles present in 1 kg of Sodium Hydroxide.
4. Define (a) Ionic product of water and (b) pH.
5. What are 'electrolytes and non-electrolytes'? Give examples.
6. Define degree of hardness. State its Units.
7. State any three properties of vulcanized rubber.
8. Write the compositions and uses of (a) producer gas (b) natural gas.
9. Define (a) pollutant, (b) receptor and (c) sink.
10. Briefly discuss the scope of environmental studies.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

- 11.** (a) State the postulates of Bohr's atomic theory and list out any two limitations. 7
(b) What are the differences between oxidation number and valency? 3
- 12.** (a) Define 'Normality'. Calculate the normality of 10 gm of Sodium hydroxide (NaOH) dissolved in 500 ml water. 5
(b) Explain the Bronsted and Lowry theory of acids and bases. 5
- 13.** (a) State any five differences between metals and non-metals. 5
(b) Explain the froth floatation process with neat diagram. 5
- 14.** (a) Define electrolysis, and state Faraday's Laws of electrolysis. 5
(b) Explain the electrolysis of fused sodium chloride (NaCl). 5
- 15.** (a) What is rusting? Explain the rusting mechanism of Iron with chemical equations. 6
(b) Explain the formation of concentration cell and composition cell. 4
- 16.** (a) Describe Ion exchange process for softening of hard water. 6
(b) State the essential qualities of drinking water. 4
- 17.** (a) State any four disadvantages of using plastics. 4
(b) Mention the preparations and uses of (i) Buna-S, (ii) PVC (iii) Teflon. 6
- 18.** (a) Explain the methods of control of air pollution. 6
(b) What are the causes of water pollution? 4
