



C14-EC/CHPC/PET-104

4036

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

DECE—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 Hund rules. Give an example.
2. Define oxidation state. Find the oxidation state of nitrogen in HNO_3 .
3. Define mole. Find the number of moles present in 25 gm of CaCO_3 .
4. Define buffer solution. Give any two applications of buffer solution.
5. Define conductor and electrolyte. Give one example for each.
6. What are the salts responsible for hardness of water?
7. Define plastic. Write any four characteristics of plastic.

- * 8. Give the composition and any two uses of producer gas.
9. What are primary pollutants and secondary pollutants? Give two examples for each.
10. Write a short note on greenhouse effect.

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) What are the important postulates of Bohr theory? Mention the limitations of it. 6
- (b) Write any four differences between ionic and covalent compounds. 4
12. (a) Define normality. Calculate the weight of HCl present in 500 ml of 0.1 N HCl solution. 5
- (b) Explain Brönsted-Lowry theory of acids and bases. 5
13. (a) Discuss about calcination and roasting processes. 6
- (b) Define the following and give one example for each : 4
- (i) Ore
- (ii) Flux
- (iii) Gangue
- (iv) Alloy
14. (a) State and explain Faraday's laws of electrolysis. 6
- (b) A current of 10 amp is passes through a solution of CuSO_4 for 10 minutes. Calculate the weight of copper deposited. [Atomic weight of Cu 63 5] 4

- * 15. (a) What is rusting of iron? Mention any four factors that influence the rate of rusting of iron. 6
- (b) Explain the sacrificial anodic protection method with an example. 4
16. (a) Explain permutit process of softening of hard water. 6
- (b) Define reverse osmosis. Give its applications. 4
17. (a) Define the following and given one example for each : 4
- (i) Monomer
- (ii) Polymer
- (b) Write a method of preparation for the following : 6
- (i) Buna-S
- (ii) Butyl rubber
- (iii) Neoprene
18. (a) Define water pollution. Explain any four causes of water pollution. 6
- (b) Define the terms 'producers' and 'consumers'. Give one example for each. 4
