



**C16-A-AA-AEI-BM-C-CHPC-CHPP-CHOT-CHST-CM-EC-
EE-IT-M-MET-MNG-PET-RAC-TT-104**

6004

BOARD DIPLOMA EXAMINATION, (C-16)

OCTOBER/NOVEMBER—2025

FIRST YEAR (COMMON) 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 the differences between orbit and orbital.
2. Define oxidation number. Calculate the oxidation state of Mn in KMnO_4 .
3. Define the terms saturated, unsaturated, super saturated solutions.
4. Calculate the pH of 0.0001M NaOH.
5. Write any three differences between electrolytic and metallic conductors.
6. What is meant by hardness of water and what salts are responsible for permanent and temporary hardness of water?
7. What are the advantages of plastics over traditional materials?
8. What are characteristics of good fuels?

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1

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9. Define the following terms :
(a) BOD (b) Ecosystem
10. Classify air pollutants based on origin.

PART—B

- Instructions :** (1) Answer *any five* questions. 10×5=50
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.
11. (a) Write the important postulates of Bhor's theory. 5
(b) Define ionic bond. Write the favourable conditions for the formation of ionic bond. 5
12. (a) Define normality and calculate the normality of KOH solution containing 11.2g/L. 5
(b) Explain the concept of Lewis Acid Base theory with example. 5
13. Explain the following terms and give at least one example to each : 5
(i) Mineral (ii) Gangue (iii) Flux (iv) Slag (v) Ore
14. (a) Explain Faraday's laws of electrolysis. 5
(b) The standard reduction potential of Mg and Cd electrodes are -2.37V and -0.40V respectively. Calculate the emf of the cell, Mg/Mg⁺² / / Cd⁺²/Cd. 5
15. (a) Define rusting of iron. Write the mechanism of rusting of iron. 5
(b) State the differences between Anodic coating and Cathodic coating. 5

- 16.** (a) Explain permutit method of softening of hard water. 5
- (b) Write the various sources of water. 5
- 17.** (a) Write the differences between thermoplastics and thermosetting plastics. 5
- (b) State the characteristics properties of plastics. 5
- 18.** (a) Explain green house effect. 5
- (b) Explain the controlling measures of air pollution. 5

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