



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)

MARCH/APRIL—2026

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 electronic configurations of Cl and Cr.
2. Define the terms 'Unit cell' and 'Coordination number'.
3. Calculate the gram equivalent of H_2SO_4 .
4. Write any three applications of buffer solution.
5. Distinguish (any three) between Electrolytic cell and Galvanic cell.
6. Define temporary hardness and permanent hardness with examples.
7. Write the disadvantages of plastics.
8. Write the composition and uses of water gas.

9. Define primary and secondary pollutants. Give examples.
10. Write the uses of forest resources.

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) Explain the following :
(i) Aufbau principle, (ii) Hund's rule and (iii) Pauli's exclusion principle. 6
(b) Write the limitations of Bhor's atomic theory. 4
12. (a) Define normality. Calculate the normality of 20 ml of NaOH that exactly neutralizes 50 ml of 0.02N H₂SO₄. 5
(b) Define pH and write its importance. 5
13. (a) Write the differences between metals and non-metals. 5
(b) Explain the following methods of concentration of are : 5
(i) Hand picking and (ii) Froth flotation.
14. (a) What is electrolysis? Write Faraday's laws of electrolysis. 5
(b) Explain the construction and working of galvanic cell. 5
15. (a) What is rusting? Explain the mechanism of rusting of iron with chemical equation. 5
(b) Write the factors influencing the rate of corrosion. 5
16. (a) Define soft and hard water and state any two disadvantages of hard water. 5
(b) Write the essential qualities of drinking water. 5

- 17.** Explain the preparation and two uses of the following : 10
(i) PVC and (ii) Bakelite.
- 18.** (a) Explain the controlling methods of water pollution. 5
(b) Explain biodiversity and write the threats to biodiversity. 5

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