



**C20-A-AA-AEI-CHST-BM-TT-  
IT-MET-MNG-AMT-WD-CAI-AMG-104  
7004**

**BOARD DIPLOMA EXAMINATION, (C-20)**

**SEPTEMBER/OCTOBER—2021**

**FIRST YEAR (COMMON) EXAMINATION**

**ENGINEERING CHEMISTRY AND ENVIRONMENTAL STUDIES**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**PART—A**

10×3=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 configuration of (a) nitrogen, (b) chlorine and (c) calcium.
2. Define mole. Calculate the number of moles in 53 g of  $\text{Na}_2\text{CO}_3$ .
3. Define  $\text{P}^{\text{H}}$ . Calculate the  $\text{P}^{\text{H}}$  of 0.001 M HCl solution.
4. Define conductor and insulator. Give examples.
5. Write the names of salts causing hardness to water.
6. What is addition polymerization? Give one example.
7. Define fuel. How are they classified on the basis of physical state?
8. Define soap. Give one example.
9. Define pollutant and contaminant.
10. Write any three causes of deforestation.

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**PART—B**

8×5=40

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Write the postulates of Bohr's theory.

**OR**

(b) Define covalent bond. Write the properties of covalent compounds.

12. (a) Define normality. How many grams of sodium hydroxide are required to prepare 500 ml of 0.1 N solution?

**OR**

(b) Explain Lewis acid-base theory.

13. (a) Explain roasting and calcination with equations.

**OR**

(b) State and explain Faraday's laws of electrolysis.

14. (a) Define rusting of iron. Explain the mechanism of rusting of iron.

**OR**

(b) Explain ion-exchange method for removal of hardness of water.

15. (a) What are thermoplastics and thermosetting plastics? Write the differences between them.

**OR**

(b) Explain any four control methods of air pollution.

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**PART—C**

10×1=10

**Instruction :** (1) Answer the following question that carries **ten** marks.

- 16.** Define galvanic cell. Explain structure and working of galvanic cell with neat diagram.

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