C20-C/CM–104

7019

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DCE - 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. What the are fundamental particles in an atom and who invented them?

2. Define molarity. Write the mathematical formula and units for it.

3. Write any three applications of Buffer solution.

4. Define electrolytes and non-electrolytes and also give example for each.

5. Write any three disadvantages of using hard water in industries.

6. State the advantages of plastic over traditional material.

7. Define the fuel. Write the classification of fuels.

8. What is active charcoal? Give some examples.

9. Write the causes of deforestation.

10. Define producers and consumers. Give example for each.

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 differences between ionic and covalent compounds.

(OR)

(b) State and explain Hund's rule and Pauli's exclusion principle.

12. *(a)* Define atomic weight, molecular weight, equivalent weight and mole. Give two examples for each.

(OR)

(b) Explain Lewis acid-base theory with limitations.

13. *(a)* Discuss about Calcination and Roasting with examples.

(OR)

(b) What is electrolytic cell? Write the differences between electrolytic cell and galvanic cell.

14. *(a)* What is rusting of iron. Write mechanism of rusting of iron and write any four factors that influence the rusting of iron.

(OR)

(b) Define soft water. Write the qualities of drinking water.

15. *(a)* What are elastomers? Write the preparation and uses of Buna S rubber and Neoprene rubber.

(OR)

(b) Define water pollution. Write the causes and controlling methods of water pollution.

PART—C

10×1=10

Instructions : (1) Answer the following question.

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

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. What is electrolysis? Analise the products formed at cathode and anode with electrode reactions during electrolysis of aqueous NaCl with a neat diagram.

★ ★ ★