



6004

C16- COMMON -104

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BOARD DIPLOMA EXAMINATION, (C-16)

DECEMBER—2022

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 any three differences between orbit and orbital.
- 2. Define atomic number and mass number. Give one example for each.
- 3. Calculate the equivalent weights of (a) HCl, (b) NaOH and (c) Na₂CO₃.
- * 4. Define pH. Calculate the pH of 0.01M HNO₃ solution.
- 5. Distinguish between metallic conduction and electrolytic conduction.
- 6. Write any three disadvantages of hard water in industries.
- 7. Write any three characteristics of plastics.
- 8. Define primary and secondary fuels. Give one example for each.
- 9. Define (a) COD, (b) BOD and (c) dissolved oxygen.
- 10. State any three causes of water pollution.

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PART—B

- Instructions :**
- (1) Answer *any five* questions.
 - (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) State five postulates of Bohr's atomic theory. 5
(b) Write any five differences between ionic compounds and covalent compounds. 5
12. (a) Define molarity. Calculate the molarity of solution containing 2 gm of NaOH dissolved in 250 ml of the solution. (GMW of NaOH=40). 5
(b) Explain Bronsted-Lowry theory of acids and bases with examples. 5
13. (a) Explain Froth flotation process. 5
(b) Explain the following terms with suitable examples :
(i) Roasting (ii) Calcination 5
14. (a) Explain the construction and working of galvanic cell with neat diagram. 5
(b) What is electrochemical series? Explain its significance. 5
15. (a) What is rusting of iron? Explain the rusting of iron with chemical equations. 6
(b) Explain prevention of corrosion by sacrificial anode method. 4
- * 16. (a) Describe permutit process for softening of hard water with neat diagram. 5
(b) Define reverse osmosis. Give any four applications. 5
17. (a) Write the preparation and uses of Buna-s and Neoprene rubber. 5
(b) Write any five differences between thermo plastics and thermo setting plastics. 5
18. (a) Explain any three methods to control air pollution. 6
(b) Write a short note on Depletion of Ozone Layer. 4

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