

7037

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DEEE - 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. Draw the shapes of *s* and *p* orbitals.
2. Calculate the equivalent weights of NaOH, H₂SO₄ and Na₂CO₃.
3. Define pH. Calculate the pH of 0.01 M HCl.
4. Write any three differences between galvanic cell and electrolytic cell.
- * 5. Write any three disadvantages of using hard water in industries.
6. Write any three advantages of plastics over traditional materials.
7. Define fuel. Classify the fuels based on physical state.
8. Define soap and detergent.
9. Write a short note on acid rain.
- * 10. Define pollutant and contaminant. Give an example for each.

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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) State and explain four quantum numbers.

(OR)

(b) Write differences between ionic and covalent compounds.

12. (a) Define molarity and normality. Calculate the amount of HCl required for preparation of 0.1 M solution of 500 ml HCl solution.

(OR)

(b) Explain Bronsted-Lowry theory of acids and bases. Give its limitations.

13. (a) Write differences between metals and non-metals.

(OR)

(b) State Faraday's laws of electrolysis. Find the amount of silver deposited by passage of 2 amp current through AgNO_3 for 1 hr 20 min.

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14. (a) Define corrosion. What are the factors which influence the rate of corrosion?

(OR)

(b) Explain permutit process for softening of hard water.

15. (a) Explain vulcanization of rubber with equations.

(OR)

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

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PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Write preparation and uses of following plastics :

- (a) Polythene
- (b) PVC
- (c) Polystyrene
- (d) Teflon

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