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C20-EE-CHPP-104

7037

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

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. Write the differences between orbit and orbital.
2. Explain about unsaturated and supersaturated solutions.
3. Define pH. Calculate the pH of 0.001 M HNO₃ solution.
4. Define (a) electrode potential and (b) EMF of the cell.
- * 5. State any three disadvantages of using hard water in industries.
6. Define the terms plastic and elastomer. Write one example for each.
7. State the advantages of gaseous fuels.
8. Define the term vinegar and give its chemical composition.
9. Write a note on greenhouse effect.
10. Define (a) ecosystem and (b) biodiversity.

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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) What are quantum numbers? Explain their significance.

(OR)

(b) Define ionic bond. Explain the ionic bond formation in NaCl and MgO molecules.

12. (a) Define molarity and normality. Find the molarity and normality of 9.8 g of H₂SO₄ present in 500 ml of solution.

(OR)

(b) Explain the Arrhenius theory of acids and bases with examples.

13. (a) Explain about calcination, roasting and smelting with examples.

(OR)

(b) State the postulates of Arrhenius theory of electrolytic dissociation.

14. (a) Explain the formation of a composition cell and concentration cell with examples.

(OR)

(b) Describe the method of removing of hardness of water by Permutit process.

15. (a) Write the preparation and any two uses of (i) polythene, (ii) teflon, (iii) PVC and (iv) urea-formaldehyde.

(OR)

(b) Define water pollution. Explain any four causes of water pollution.

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PART—C

10×1=10

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

- 16.** Explain and analyse the importance of salt bridge in the construction and working of galvanic cell by taking an example.

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