

3004

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

FIRST YEAR (COMMON) EXAMINATION

ENGINEERING CHEMISTRY AND ENVIRONMENTAL STUDIES

Time : 3 hours]

[Total Marks : 80

PART—A

4×5=20

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **four** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write the difference between orbit and orbital.
2. Define Ionic bond. Give example.
3. Define mole. Calculate the number of moles present in 44 grams of CO₂.
4. Define pH. Calculate the pH of 0.001 M HCl solution.
5. Define conductor, electrolyte and non-electrolyte. Give example.
6. Write the disadvantages of using hard water.
7. Define polymerisation. What are different types of polymerisations?
8. Define fuels. Classify the fuels based on physical state.
9. Define producer and consumer. Give example.
10. What is a non-conventional energy source. Give example.

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PART—B

15×4=60

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

11. Explain principal quantum number and azimuthal quantum number.
12. Define normality? Calculate the normality of the solution containing 10.6 grams of Na_2CO_3 in 250 ml solution.
13. Explain roasting, calcination and smelting.
14. Write the difference between galvanic and electrolytic cells.
15. What is cathodic protection? Explain sacrificial anode method of prevention of corrosion.
16. Explain zeolite method of removing permanent hardness of water.
17. Write the advantages of using plastic over traditional materials.
18. Write the causes of water pollution.

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