

6004
BOARD DIPLOMA EXAMINATION
MARCH/APRIL - 2019
DIPLOMA IN AUTOMOBILE ENGINEERING
ENGINEERING CHEMISTRY & ENVIRONMENTAL STUDIES
FIRST YEAR EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A **(3m x 10 = 30m)**

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. What is electronic configuration? Write the electronic configuration of Mg & Zn
2. Differentiate between Oxidation number and Valency
3. Define mole. Calculate the weight of 0.1 mole of Na_2CO_3
4. What are different types of Lewis Acids and Bases with suitable examples
5. The Atomic weight of a bivalent element is 40? What is its electrochemical equivalent
6. state any three essential qualities of drinking water
7. Write the preparation and uses of Teflon
8. Write the composition and uses of Bio Gas and Acetylene
9. Write any three reasons for air pollution
10. What are renewable energy sources. Give example.

PART - B **(10m x 5 = 50m)**

Note 1: Answer any five questions and each carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. (a) Write any four postulates of Electronic theory of valency
 (b) Explain ionic bond in the formation of NaCl
12. a) Explain Arrhenius theory of Acids and Bases with suitable examples
 b) Define Molarity. Calculate the Molarity of a 3.65 gms of HCl in 1 litre solution

13. (a) Write any five differences between characteristics of metals and non-metals
(b) Define (1) Mineral (2) Ore (3) Gangue (4) Flux
14. (a) Define and explain Faraday's laws of electrolysis
(b) 10 amperes of electricity is passed through $\text{Ni}(\text{CN})_2$ for 25 minutes. Find the weight of Nickel deposited on cathode? (Atomic Weight of Ni = 58.69)
15. a) Explain sacrificial Anode method to prevent the rate of corrosion
b) Explain concentration cell and stress cell during corrosion
16. a) Explain the softening of Hard water by Permutit process
b) State the applications of Reverse osmosis
17. a) Write the characteristics of vulcanised Rubber.
b) How is vulcanization of Natural rubber done
18. a) Explain the methods of control water pollution.
b) Write any four effects of water pollution on living things.

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