6037

BOARD DIPLOMA EXAMINATION

MARCH/APRIL - 2019

DIPLOMA IN ELECTRICAL AND ELECTRONICS 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. Calculate the number of protons, electrons and neutrons in Mg^{2+} ion (A=24)
2. Write any three differences between oxidation number and valency.
3. Define solute, solvent and solution.
4. Define p^H .Calculate the p^H of 0.01M HCl solution
5. Distinguish between eletrolytic cell and galvanic cell
6. Define the following
   1) Degree of hardness of water 2)ppM 3) mg per litre
7. Write the preparation and uses of Neoprene rubber
8. Classify the fuels based on their physical state with examples
9. Write any three reasons of water pollution
10. Define the terms (i) Producers (ii) Consumers (iii) Decomposers

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) Define Ionic-bond and explain it in the formation of NaCl **6M**
    (b) List out any 4 characteristics of Ionic compounds **4M**

12A. Define Normality. How much volume of water is required to dilute 50 ml of 0.4N HCl solution to 0.1N HCl solution **5M**

B. Explain Bronsted – lowry theory of acids and bases with examples. **5M**

13. (a)Distinguish the characteristics of Metals & Non-Metals. 6M
    (b) Explain the purification of metal by electrolytic refining 4M

14. (a)Define and explain Faraday's laws of electrolysis 6M
(b) Same quantity of charge is passed through Sodium Chloride and Silver Nitrate. Find the weight of Sodium deposited on cathode? If Silver deposited is 1.85 g (Atomic Weight of Cu =63, Atomic Weight of Na =23) 4M

15. a)Explain sacrificial Anode method to prevent the rate of corrosion **4M**
b) Explain concentration cell and stress cell during corrosion **6M**

16. a) Explain the softening of Hard water by Permutit process 6M
b) State the applications of Reverse osmosis 4M

17. (a) **Write any four characterstics of vulcanized rubber** **4M**
(b) **Distinguish between Thermoplastics and Thermosetting plastics.** **6M**

18. (a) **Define Air pollution and what are the causes for air pollution?** **4M**
(b) **State the Renewable and non renewable energy sources with examples.** **6M**

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