

6004
BOARD DIPLOMA EXAMINATION
JUNE - 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. Write the characteristics of fundamental particles of an atom
2. Define unit cell and coordination number
3. Calculate the no of moles in the following
 - (1) 10gm of NaOH
 - (2) 5.3 gm of Na_2CO_3
 - (3) 6.3 gm of HNO_3
4. Define pH. Calculate pH of 0.01M HCl solution.
5. What is Electrode potential and Standard electrode potential
6. State the applications of Reverse osmosis
7. Write the disadvantages of using non bio degradable plastics
8. What are the characteristics of a good fuel
9. Classify the air pollutants-based on origin give one example for each
10. Suggest any three methods to control water pollution

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 and explain covalent bond in the formation of N_2 molecule by Lewis Dot method
 (b) Write any four differences between ionic compounds and covalent compounds
- 12A. Define Normality. Calculate the Normality of Na_2CO_3 solution containing 5.3 gm/litre
- B. Define Bronsted – Lowry Acid, Base & Neutralisation. Write one example for each

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) What is Electrolysis? Explain the Electrolysis of fused NaCl with equations
(b) State & Explain Faradays First law? Calculate the Weight of copper deposited for 100 amperes current in 20 minutes passing through CuSO_4 solution? (Atomic Weight of Cu = 63.5)
15. a) Define Corrosion, Explain composition cell
b) Explain mechanism of rusting of iron
16. a) state essential qualities of drinking water
b) Explain the softening of hard water by ion exchange process
17. a) Explain Additional polymerisation and Write preparation and uses of Polyethylene and Teflon
b) Write any four advantages of plastics over traditional materials
18. a) Explain the controlling methods of air pollution
b) What are the causes for deforestation

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