

6019
BOARD DIPLOMA EXAMINATION
JUNE - 2019
 * **DIPLOMA IN CIVIL 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. Define unit cell. Mention the structure of NaCl unit cell.
2. Explain anomalous electronic configurations of Cr and Cu
3. Calculate the Equivalent weight of following
(1) H_2SO_4 (2) NaOH (3) $CaCO_3$
4. What are different types of Lewis Acids and Bases with suitable examples
5. Define Electrolyte, Non – Electrolyte and metallic conductor
6. Define soft and Hard water
7. Define polymerisation, Monomer and polymer.
8. Write the preparation and uses of Acetylene gas.
9. What is Acid rain? Give its effects.
10. Write any three effects of water pollution on living things

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

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| 11. a) Write the main postulates of Bohr's atomic theory | 6M |
| (b) State any four limitations of Bohr's atomic theory | 4M |
| 12A. What is Normality ? Calculate the weight of H_2SO_4 present in 0.05N in 250 ml solution | 5M |
| B. Define Bronsted – Lowry Acid, Base & Neutralisation. Write one example for each | 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 Copper sulphate and Aluminium Nitrate. Find the weight of Copper deposited on cathode? If Silver deposited is 7.35 g (Atomic Weight of Cu =63, Atomic Weight of Al =27) 4M
15. a) Explain impressed voltage method as Cathodic protection method. 4M
 b) Define corrosion. List out the factors which influence rate of corrosion 6M
16. (a) Explain the softening of hard water by permutit process. 6M
 (b) Write any four essential qualities of drinking water. 4M
17. a) Explain extraction of Natural Rubber from Latex 4M
 b) Distinguish between Thermoplastics and Thermo setting plastics. 6M
18. a) write the differences between Renewable and Non Renewable energy sources 5M
 b) Define the following terms: 5M
 (i) Receptor (ii) Sink (iii) COD
 iv) BOD (v) DO

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