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**DMI-ST. EUGENE UNIVERSITY****ZAMBIA****DEGREE EXAMINATION – JUNE 2023****Semester: I****800CH104 CHEMISTRY I****Time: 3:00 Hours****Max. Marks: 100****Answer any FIVE Questions (5 x 20 = 100 Marks)**

- Elaborate on the laws of chemical combinations. **(12 Marks)**
 - Give a note on Dalton's Atomic Theory and its limitations. **(5 Marks)**
 - Differentiate Empirical and Molecular formula. **(3 Marks)**
- Outline the importance of the classification of elements. **(4 Marks)**
 - Outline the Classification of the elements in the periodic table on the basis of their electronic configurations. **(8 Marks)**
 - Discuss the Periodic Trends in Properties of Elements. **(8 Marks)**
- Give a detailed note on equilibrium in physical processes. **(6 Marks)**
 - Give a note on equilibrium constant. **(6 Marks)**
 - Outline the factors affecting equilibrium. **(8 Marks)**
- Give a note on sawhorse and Newman projections. **(8 Marks)**
 - Elaborate the Chemical properties of Alkane. **(12 Marks)**
- Outline the preparation of alcohols. **(12 Marks)**
 - Elaborate the chemical reactions of Alcohols. **(8 Marks)**
- Discuss Quantum Numbers in details. **(12 Marks)**
 - Outline Aufbau Principle and Hund's with example. **(8 Marks)**
- List down the rules for the calculation of oxidation number. **(12 Marks)**
 - Illustrate balancing of chemical using Oxidation Number Method. **(8 Marks)**