

QP CODE 2020552301

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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – DECEMBER 2024

Semester: II

055 CH 23 CHEMISTRY

Time: 3:00 Hours

Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

- Outline the Periodic trends in properties of elements on the periodic table. (10 Marks)
 - Explain the types of Polar character of covalent bonding with examples. (5 Marks)
 - Briefly explain the types of orbital overlap. (5 Marks)
- Explain the importance of element classification on the periodic table. (5 Marks)
 - Describe the present form of the modern day scientific periodic table. (5 Marks)
 - With the help clear and neat diagrams, distinguish ionic bonding from covalent bonding. (10 Marks)
- Elaborate the significant Factors that Affect the Chemical Equilibrium. (10 Marks)
 - Explain the Law of mass action and derive an expression with an example for Equilibrium constant. (10 Marks)
- Define hydrocarbons and explain the different types of hydrocarbons. (10 Marks)
 - How does the combustion of hydrocarbons contribute to environmental issues? (5 Marks)
 - Why are alkenes more reactive than alkanes? (5 Marks)
- What are alcohols? (2 Marks)
 - What are some common methods for synthesizing alcohols? (8 Marks)
 - How are alcohols classified based on the number of hydroxyl groups they contain and also based on the type of carbon atom to which the hydroxyl group is attached? (10 Marks)

6. a) Differentiate with examples polar molecules from non-polar molecules. **(10 Marks)**
Explain the role of chemistry in Pharmaceutical industries, Agriculture, and Cosmetology. **(10 Marks)**
7. a) Describe the nomenclature of aldehydes. **(5 Marks)**
b) What are aldehydes and Explain why aldehydes are more reactive than ketones? **(5 Marks)**
c) How are aldehydes synthesized? **(10 Marks)**