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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – DECEMBER 2023

Semester: X 055EE127 BUSINESS INTELLIGENCE AND ANALYTICS

Time: 3:00 Hours

Max. Marks: 100

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

1. a) What are the key differences between descriptive analytics, diagnostic analytics, predictive analytics, and prescriptive analytics? **(10 Marks)**
b) Explain how Data Mining techniques can be applied to uncover hidden patterns? **(10 Marks)**
2. a) Explain the critical role of data preprocessing in the data analysis pipeline. **(10 Marks)**
b) Describe the various mechanisms of data collection, including both traditional and modern methods. **(10 Marks)**
3. a) Define Standard Error and discuss its significance in inferential statistics. **(10 Marks)**
b) Describe the process of generating random samples for statistical analysis. **(10 Marks)**
4. a) What is the purpose of data modeling in the context of database design and analysis? **(10 Marks)**
b) Explain the concept of similarity measures in the context of recommender systems. **(10 Marks)**
5. a) Provide an overview of Hadoop and are the key components of the Hadoop ecosystem. **(10 Marks)**
b) Explain the basics of Linear Optimization Models, also known as linear programming. **(10 Marks)**
6. a) What elements make a dashboard valuable for decision-makers? **(10 Marks)**
b) Describe the role of data visualization in Business Intelligence. **(10 Marks)**
7. a) Discuss the concept of data standardization and normalization. **(10 Marks)**
b) Discuss different techniques for visualizing data based on the nature of the data and the insights needed. **(10 Marks)**