



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

CMT 445: BUSINESS INTELLIGENCE

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Date: APRIL 2018

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

- Q1. a) Provide an explanation of each of below;
- i) Business Intelligence [2 marks]
 - ii) By giving example explain what is business knowledge [2 marks]
 - iii) Decision Support System(DSS) [2 marks]
- b) The logistics manager of a manufacturing company wishes to develop a medium-term logistic-production plan. This is a decision-making process of high complexity which includes, among other choices, the allocation of the demand originating from different market areas to the production sites, the procurement of raw materials and purchased parts from suppliers, the production planning of the plants and the distribution of end products to market areas. Describe three benefits of using that the logistics manager will get in using BI tools. [6 marks]
- c) By giving examples explain the three types of data one can get while carrying out the web mining. [6 Marks]
- d) What are the challenges to developing BI with semi-structured or unstructured data? [2 Marks]
- e) By use of an example explain the similarity in their objective between knowledge management and business intelligence [4 marks]

- f) A rational approach to decision making implies that the option fulfilling the best performance criteria is selected out of all possible alternatives. Besides economic criteria, which tend to prevail in the decision-making process within companies identify other five factors influencing a rational choice. **[6 Marks]**
- Q2. a) Describe data mining **[2 marks]**
 b) Outline the six steps in designing the Knowledge Discovery System **[6 Marks]**
- c) By giving two examples on each discuss the differences between predictive and descriptive Data Mining techniques **[8 Marks]**
- d) Discuss the difference between Intra page structure and Inter page structure as used in web mining **[4 marks]**
- Q3. a) By using appropriate diagram illustrate the three components of Business Intelligence architecture. **[9 marks]**
- b) By use of an example explain how a predictive modeling BI technique can predict value for a specific data item attribute **[6Marks]**
- c) List and explain five criteria for evaluating the classification methods **[5 Marks]**
- Q4. a) List and explain four BI tools as being applied in today's business domain **[4 marks]**
- b) Using an appropriate diagram, discuss the phases of developing a Decision Support System **[8 Marks]**
- c) Using appropriate diagram discuss the major components of a data warehouse architecture **[8 Marks]**
- Q5. a) What is the fundamental distinction between supervised and unsupervised learning processes as used in data mining **[4 marks]**
- b) Using examples differentiate between Regression and Classification as used in Data mining **[4 marks]**
- c) What is Regression Model and its importance in data mining **[4 Marks]**
- d) Development a mathematical model for decision making is a complex process that needs to be broken up into smaller phases while providing feedback mechanism for each phase. Imagine you are involved in managing these requirements for creating such model, using appropriate explain the phases to be done **[8 Marks]**

END