



DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

UNIVERSITY EXAMINATION 2017/2018

**THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN CRIMINOLOGY AND SECURITY MANAGEMENT**

BSM 2420: DATA MINING

22nd August ,2017

TIME: 08.30-10.30AM

Instructions: Answer question **ONE** and any other **TWO** questions

Question One:

- a. Define the following terms
 - i. Data mining
 - ii. Artificial intelligent
 - iii. Data warehouse
 - iv. Database (4 marks)
- b. Explain the importance and how link analysis is beneficial in counterterrorism. (4 marks)
- c. There are various artificial intelligent techniques that can be used in pre-crime interactive process, state four. (4 marks)
- d. State the five steps undertaken when conduction text mining; text mining process. (5 marks)
- e. Explain the importance of data integration during the data mining process. (4 marks)
- f. What are the two differences between the traditional and investigative data mining.(4 marks)
- g. List various data that one would consider during investigative data mining. (5 marks)

Question two:

- a. Discuss five benefits of Data mining. (10 marks)
- b. Explain the major challenge on government use of data mining in counterterrorism. (2 marks)
- c. Explain the benefit of using link analysis AI technique compared to the text mining, especially in the crime detection. (4 marks)
- d. State four tools that can be used in data preparation. (4 marks)

Question three:

- a. Discuss the seven steps of Data mining process. (14 marks)
- b. Explain three ways that data mining will be useful in crime detection and counterterrorism. (6 marks)

Question four:

- a. Explain three advantages of data mining (6 marks)
- b. Explain how neural networks artificial intelligent technology is applicable in crime detection. (4 marks)
- c. Explain the two analysis tools that can be utilized in crime prevention scenario. (4 marks)
- d. Explain the applicability of Machine learning technique in crime prevention. (2 marks)
- e. Discuss the different areas or scenarios that the artificial intelligent technologies will suit best especially in crime detection. (4 marks)

Question five:

- a. Differentiate the following terms
 - i. Classes and association
 - ii. Data mining and database
 - iii. Subject based analysis and pattern based analysis (6 marks)
- b. What is behavioral profiling? (2 marks)
- c. Using practical examples, discuss how three artificial intelligent technologies differ from each other. (6 marks)
- d. Discuss the key concept in data preparation for data mining. (4 marks)
- e. State two benefits of data mining in crime investigation. (2 marks)