



**DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY UNIVERSITY
EXAMINATION ACADEMIC YEAR 2016/2017 THIRD YEAR SECOND
SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(CRIMINOLOGY AND SECURITY MANAGEMENT)**

BSM 2420: Data mining

August 2017

TIME: 2 HOURS

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)

