NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF SOFTWARE ENGINEERING

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE	
QUALIFICATION CODE: 07BACS	**LEVEL:** 7
COURSE: DATA AND WEB MINING	**COURSE CODE:** DWM710S
DATE: JULY 2023	**SESSION:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER:	MR GEREON KOCH KAPUIRE
MODERATOR:	MRS JOSEPHINA MUNTUUMO

THIS QUESTION PAPER CONSISTS OF 3 PAGES
(Including this front page)

INSTRUCTIONS TO STUDENTS

1. Answer all questions.

2. All questions have to be answered in the Answer Booklet. Clearly indicate the question number for each answer.

3. The allocation of marks is an indication of the extent of the expected answer. Answering more than expected does not result in higher marks. Keywords alone are not enough.

4. There are no books, notes or any other additional aids allowed in the examination.

5. Please, ensure that your writing is legible, neat and presentable.

Question 1 [8 Marks]

Discuss (shortly) whether or not each of the following activities is a data mining task.

a)   Predicting the outcomes of tossing a (fair) pair of dice. [4 Marks]

b)   Predicting the future stock price of a company using historical records. [4 Marks]

Question 2 [4 Marks]

What is the difference between data mining and pattern evaluation?

Question 3 [4 Marks]

List the four primitives for the specification of a data mining task.

Question 4 [7 Marks]

What are some of the data mining techniques? List at least seven.

Question 5 [6 Marks]

a)   What is the descriptive model? [2 Marks]

b)   Please list the data mining tasks that belong to the descriptive model. [4 Marks]

Question 6 [10 Marks]

According to the classifications of data mining systems, based on the kinds of databases mined, please list them:

a)   According to the model. [5 Marks]

b)   Based on applications adopted. [5 Marks]

Question 7 [7 Marks]

Describe the challenges to data mining regarding data mining methodology and user interaction issues.

Question 8 [4 Marks]

Define and provide an example to explain support and confidence in Association rule mining.

Question 9 [4 Marks]

What is the purpose of the Apriori algorithm?

Question 10 [8 Marks]

a)   What is the difference between clustering and cluster analysis? [4 Marks]

b)   What are the basic requirements of cluster analysis? List at least any four. [4 Marks]

<u>Question 11</u>   [4 Marks]

What is the difference between nominal and ratio scaled variables?

<u>Question 12</u>   [8 Marks]

How is data mining used in health care analysis?

<u>Question 13</u>   [2 Marks]

What is text mining?

<u>Question 14</u>   [8 Marks]

What are the factors involved while choosing a data mining system?

<u>Question 15</u>   [8 Marks]

Why do we need data transformation?

<u>Question 16</u>   [4 Marks]

Why do we need data preprocessing?

<u>Question 17</u>   [4 Marks]

What is the difference between characterization and discrimination?

<<<<<<End of Exam Paper>>>>>