



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY SPECIAL/SUPPLEMENTARY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FOURTH YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE

OF

BACHELOR OF SCIENCE (SST, SME AND SMT)

COURSE CODE: BIT 415

COURSE TITLE: DATA WAREHOUSING AND MINING

DATE: WEDNESDAY 27/01/2022 TIME: 8:00A.M-10:00P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (1) AND ANY OTHER TWO QUESTIONS

TIME: 2 HOURS

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over. ►

QUESTION ONE [30 MARKS]-COMPUSORY

- a) Define the following terms [5 marks]
- i) Data warehouse
 - ii) Data mining
 - iii) Meta data
 - iv) Data mart
 - v) Enterprise data warehouse
- b) Differentiate between operational and informational data [4 marks]
- c) State three reasons why it is difficult to build a data warehouse [3 marks]
- d) State six reasons for building a data warehouse [6 marks]
- e) What is **Cognous Impromptu**? Discuss list its four features [6 marks]
- f) Elaborate the following schemas as used in data warehouse.
- i) Simple Star Schemas [2 marks]
 - ii) Multi-Star Schema [2 marks]
 - iii) Snowflake Schema [2 marks]

QUESTION TWO [20 MARKS]

- a) Describe OLAP as used in data warehousing [5 marks]
- b) Discus three categories of OLAP tools [10 marks]
- c) State five components that make up architecture of a typical data mining system [5 marks]

QUESTION THREE [20 MARKS]

- a) Elaborate on Association analysis as used in data mining [5 marks]
- b) Identify and explain the classification of data mining systems [10 marks]
- c) Explain any three issues in data mining [5 marks]

QUESTION FOUR [20 MARKS]

- a) Organizations interested in development of a data warehouse can choose one of the following two approaches that is Top - Down Approach (Suggested by Bill Inmon) and Bottom - Up Approach (Suggested by Ralph Kimball). Differentiate between this approaches [6 marks]
- b) State seven components of a data warehouse [7 marks]
- c) State four common characteristics that successful data warehouses have [4 marks]
- d) State three technical consideration when building a data warehouse [3 marks]

QUESTION FIVE [20 MARKS]

- a) The term Data Warehouse was coined by Bill Inmon in 1990, which he defined in the following way: "A warehouse is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision making process". Define the terms subject-oriented, integrated, time-variant and non-volatile as coined by Bill Inmon. [6 marks]
- b) State and explain any four **Access tools used** to provide info to business users in data warehousing [8 marks]
- c) Explain two reasons why organizations consider data warehousing a critical need. [6 marks]