



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SCO 421/SIT 408: DECISION SUPPORT SYSTEMS

DATE:

TIME:

INSTRUCTIONS

- i) Answer question ONE and other TWO questions**
- ii) Begin each new answer on a separate page of the answer sheet**
- iii) Write on both sides of the answer sheet**

QUESTION ONE (COMPULSORY, 30 MARKS)

- a) Use an example to explain the meaning of the following in decision making
 - i) Scenario (4 marks)
 - ii) sensitivity analysis (4 marks)
- b) Distinguish between Knowledge and Information (4 marks)
- c) List down the tools used in data mining (4 marks)
- d) What do the following Abbreviations stand for?
 - i) DSS (2 marks)
 - ii) ERP (2 marks)
 - iii) OLAP (2 marks)
- e) Define the following terms
 - i) Business Analytics (4 marks)
 - ii) Expert system (4 marks)

QUESTION TWO (20 MARKS)

- a) Briefly describe any TWO types of Transaction Processing Systems (10 marks)
- b) Describe the components of a Linear Programming problem (10 marks)

QUESTION THREE (20 MARKS)

- a) What is a model (1 mark)
- b) What are the benefits of using models in decision making? (5 marks)
- c) Use a diagram to describe the components of a Decision Support System(DSS) (8 marks)
- d) In order for a user to be redirected to a homepage, he(he) must provide the correct Username and Password otherwise, an error message will be displayed., In addition, the user must have been registered in a domain. Use a Decision Table to analyse this problem (6 marks)

QUESTION FOUR (20 MARKS)

- a) A store has requested a manufacturer to produce pants and sports jackets. For materials, the manufacturer has 750 m² of cotton textile and 1,000 m² of polyester. Every pair of pants (1 unit) needs 1 m² of cotton and 2 m² of polyester. Every jacket needs 1.5 m² of cotton and 1 m² of polyester. The price of the pants is fixed at 40 and that of sports jacket at 40. What is the number of pants and jackets that the manufacturer must give to the stores so that these items obtain a maximum sale? (10 marks)
- b) Using a diagram briefly explain the general structure of a mathematical model used for decision making (10 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss the components of knowledge management system (6 marks)
- b) What are the advantages and disadvantages of using simulations in decision making? (6 marks)
- c) Describe Knowledge Management System Cycle (6 marks)