

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN COMPUTER SCIENCE

COSC 442: DECISION SUPPORT SYSTEMS

STREAMS: COMP SCI. Y4S2

TIME: 2 HOURS

DAY/DATE: TUESDAY 21/09/2021

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Sketch maps and diagrams may be used whenever they help to illustrate your answer
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **No** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely

QUESTION ONE COMPULSORY - (THIRTY MARKS)

- Briefly explain what makes a good decision. [2 Marks]
- Define the concept of data mining. [2 Marks]
- Explain the term organization. [2 Marks]
- Define sensitivity analysis and state its value to the decision maker. [2 Marks]
- List the major components of the decision-making process [4 Marks]
- List and briefly describe the classes of decision makers. [3 Marks]
- List and briefly describe the three fundamental components of a problem structure. [3 Marks]
- List and briefly describe the types of abstract models. [3 Marks]
- Define Groupware and where it is applicable. [3 Marks]

- j) Briefly explain a data warehouse, and how it is better than traditional information-gathering techniques. [3 Marks]
- k) Briefly explain information quality and discuss its importance to DSS design. [3 Marks]

QUESTION TWO (TWENTY MARKS)

- a) Briefly explain any two categories of potential negative impacts of an EIS on organizations. [2 Marks]
- b) Describe the activity-based typology of decisions. Give an example of each class. [4 Marks]
- c) Using relevant example explain the two common methods of modeling a problem structure, state what each of them focuses. [4 Marks]
- d) List and briefly describe four basic types of communication networks in group interactions. [4 Marks]
- e) Describe the five basic methods for executive information determination. [6 Marks]

QUESTION THREE (TWENTY MARKS)

- a) Describe genes and chromosomes as applied to genetic algorithms. [2 Marks]
- b) Explain the following concepts as used in DSS:
 - i) Data visualization [2 Marks]
 - ii) Logical thinking. [2 Marks]
- c) State the difficulties of decision making from the perspective of problem structure. [2 Marks]
- d) Outline three primary challenges to obtaining valid knowledge. [3 Marks]
- e) List and describe the five dimensions of organizational decisions. [5 Marks]
- f) Discuss any four criteria for evaluation of an expert system. [4 Marks]

QUESTION FOUR (TWENTY MARKS)

- a) Briefly describe the components of Simon's problem-solving model. [6 Marks]
- b) Describe the effect of a decision maker's perception on the decision making process. [3 Marks]

- c) Identify any three risk factors in DSS implementation projects. [3 Marks]
- d) Several factors associated with the design of the DSS can be directly related to the quality of user interface. Identify four interface issues that are extremely important if the DSS is to become a success. [4 Marks]
- e) Identify the generalized framework for DSS success evaluation suggested by Klein and Methlie (1995) [4 Marks]

QUESTION FIVE (TWENTY MARKS)

- a) Describe the three forces that affect a particular individual's decision style. [3 Marks]
 - b) List and briefly describe the three fundamental components of a problem structure. [3 Marks]
 - c) Identify any two advantages and two risks of end-user DSS development. [4 Marks]
 - d) List and briefly describe any four benefits and limitations of prototyping. [4 Marks]
 - e) Discuss any three relative advantages and disadvantages to using the Internet as a DSS server. [6 Marks]
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