



# **MACHAKOS UNIVERSITY**

**University Examinations for 2020/2021 Academic Year**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY**

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR  
BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)**

**SIT 160: INFORMATION SYTEMS**

**DATE: 17/6/2021**

**TIME: 8.30-10.30 AM**

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## **INSTRUCTIONS**

**Answer question ONE and any other TWO questions.**

### **QUESTION ONE (COMPULSORY) (30 MARKS)**

- a) Define office automation (2 marks)
- b) Explain FIVE office automation benefits. (5 marks)
- c) Your organization has decided to implement an Information system (IS) in order to improve the effectiveness and efficiency of their operations.

You are required to:

- i. Outline FIVE advantages that an information system (IS) could bring to the organization. (5 marks)
- ii. Name and explain FIVE challenges that are anticipated during the implementation of the IS (5 marks)
- iii. Discuss TWO data collection methods that you would recommend to the implementation team. (4 marks)
- iv. Analyze the reasons why you would choose the above methods. (4 marks)
- d) Explain FIVE types of data processing systems (5 marks)

### **QUESTION TWO (20 MARKS)**

- a) Draw the FOUR level pyramid structure of MIS in an organization and name the various subsystems that are used in each level. (4 marks)
- b) Explain TWO types of reports that users can produce from the subsystems in (a) above. (4 marks)
- c) Your organization has decided to adopt a decision support system (DSS) for the management team. You as the ICT director is involved in the procurement and implementation of the system.
  - i. Explain FOUR main software components that you would recommend to be procured for the system to be implemented. (4 marks)
  - ii. In your advice as the ICT director, describe TWO types of decisions that will be supported by the DSS. (4 marks)
  - iii. Describe TWO reasons why you prefer the management to procure a decision support system (DSS) and not an expert system (ES). (4 marks)

### **QUESTION THREE (20 MARKS)**

- a) For the following business situation, briefly describe and justify the most suitable system that could be implemented:
  - i. A company wants to provide expert help to its technicians when diagnosing and repairing faults in complex electronic control systems, without having to commission and wait for the human expert to attend each time. (4 marks)
  - ii. A university wants to perform market research, evaluate vendors, solicit bids, negotiate contracts, order goods/services and receive goods/services. (4 marks)
- b) Briefly explain the need for data processing in an organization. (4 marks)
- c) Differentiate between the following types of systems
  - i) Deterministic and probabilistic systems (4 marks)
  - ii) Open and closed systems (4 marks)

**QUESTION FOUR (20 MARKS)**

- a) You have successfully vied and was voted as the Governor of Machakos County, outline FOUR appropriate reasons explaining how information technology will help you to succeed in your new position. (8 marks)
- b) Describe THREE information technology (IT) infrastructure that the county will use to build its information systems on. (6 marks)
- c) Most organizations have now shifted from manual systems to electronic systems. Explain SIX limitations that they have been facing before the shift. (6 marks)

**QUESTION FIVE (20 MARKS)**

- a) Define data backup (2 marks)
- b) Differentiate between data access and data storage? (4 marks)
- c)
  - i) Discuss FOUR reasons why data security is important to an organization. (4 marks)
  - iii) Explain THREE ways in which data security can be achieved. (6 marks)
- d) Outline TWO classifications of information systems. (4 marks)