



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

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

SIT366: SYSTEM DEVELOPMENT

DATE: 11/4/2023

TIME: 2:00 – 4:00 PM

Instructions

This paper consists of **FIVE** questions.

Answer **QUESTION ONE** and other **TWO** questions in this paper.

QUESTION ONE (COMPULSORY) (30 MARKS)

- (a) Describe two tools used to record system requirements. (4 marks)
- (b) Distinguish between JRP and brainstorming methods of requirement gathering. (4 marks)
- (c)
 - (i) A student created a system for a hospital. Describe two testing methods he could have used before commissioning the system. (4 marks)
 - (ii) XYZ Company has acquired an information system for its operations. Explain **three** non-tangible benefits the company would accrue from the use of this system. (6 marks)
- (d) Peter created a system for an organization, he later sold the same code to another organization.
 - (i) State the legality of Peter's action and justify your answer. (2 marks)
 - (ii) Explain the action the organization should have taken to avoid this. (2 marks)
- (e) Outline **four** contents in a requirement gathering report. (4 marks)
- (f) John, a system analyst broke a system into its sub systems. Describe **two** methods he could have used. (4 marks)

QUESTION TWO (20 MARKS)

- (a) Define the term pseudocode as used in system development. (2 marks)
- (b) Feasibility study is an important activity in the development of a system. Explain three types of such studies. (6 marks)
- (c) Distinguish between functional and non-functional requirements as used in system development. (4 marks)
- (d) A bank has upgraded its system and intends to implement this upgrade. Describe four methods the bank could use in the implementation. (8 marks)

QUESTION THREE (20 MARKS)

- (a)
 - (i) Outline three advantages of using a questionnaire to collect system requirements. (3 marks)
 - (ii) State **three** types of questions in a closed question questionnaire. (3 marks)
- (b) A game of football takes ninety minutes if one team wins, otherwise it takes 120. If no team wins the game is decided through penalties. Draw a decision tree to represent this logic. (6 marks)
- (c) Distinguish between requirement verification and requirement validation. (4 marks)
- (d) Describe the steps followed when collecting requirements for a system. (4 marks)

QUESTION FOUR (20 MARKS)

- (a) Outline three ways of identifying a software project. (3 marks)
- (b) Mary intends to develop a project for a Farmers SACCO. Describe three methodologies she could use. (6 marks)
- (c) HELB gives loans to students according to their needs. A student needs to apply for a loan and upload necessary documents. The Dean of Students sets the semester dates and confirms studentship. This data is accessed by a clerk, verifies the information and forwards it to the board for consideration. The board allocates the loan as per need.

Draw a use case diagram to represent this logic. (6 marks)
- (d) Citing an example in each case, explain **two** methods used to evaluate a system. (5 marks)

QUESTION FIVE (20 MARKS)

- (a) Define the term data conversion as used in system implementation. (2 marks)
- (b) Distinguish between physical and logical security measures as used in system development. (4 marks)
- (c) A system administrator allocates rights to users as per certain criteria. Explain **two** such criteria. (4 marks)
- (d) Winner, a project manager would like to constitute a team for a software project. Describe **five** professionals she could incorporate in the team. (10 marks)