



MACHAKOS UNIVERSITY

University Examinations for 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE
IN INFORMATION TECHNOLOGY.**

SIT 204: SYSTEM ANALYSIS AND DESIGN

DATE: 19/12/2017

TIME: 8.30-10.30 AM

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Answer the following in brief: (20 marks)
- i. What are the limitations of the waterfall model?
 - ii. Differentiate between technical feasibility and operational feasibility of a project.
 - iii. List any two common errors that are made while drawing data flow diagrams.
 - iv. What is a weak entity? Give an example.
 - v. Why do we need to design software architecture?
 - vi. Can a system be completely decoupled into independent modules? Justify your answer.
 - vii. What is the purpose of system testing?
 - viii. Who should be validating a system? Why?
 - ix. What are the major drawbacks of file system for storing large volumes of data pertaining to an application
 - x. Give one example each for strategic, tactical and operational decisions.

- b) User involvement is important for the success of computer projects. The user can contribute to several stages of the project cycle. For THREE of these stages, describe how the user can contribute and how the computer project will benefit from this involvement.(6 marks)
- c) State and explain any four different types of systems testing. (4 marks)

QUESTION TWO (20 MARKS)

- a) Describe any seven principles of user centered design. (7 marks)
- b) Information gathering is vital for any system development process, discuss five Characteristics for gathering requirements. (5 marks)
- c) Suppose you have to redesign an interface used by clerical staff for data entry to a government database. The current interface is line-based. Your customer wants to redesign this interface to improve productivity and lower data entry error rates which are currently quite high. Describe the key interface features and functions you'd consider in putting together a design. (8 marks)

QUESTION THREE (20 MARKS)

- a) What is the drawback of DFD? Draw a DFD for the university admission system (10 marks)
- b) Explain various types of feasibility studies that analyst should consider. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss risk management in an information system project development (6 marks)
- b) Explain any four importance of prototyping in systems development. (8 marks)
- c) Discuss any five factors affecting the cost of Maintenance (6 marks)

QUESTION FIVE (20 MARKS)

- a) What is a system? Explain characteristics and types of system. (10 marks)
- b) Explain system development life cycle (SDLC) in detail. How cost/benefit analysis plays an important role in SDLC. (10 marks)