



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.

Tel: +254 (0)799529958, +254 (0)799529959, +254 (0)712524293

Website: www.must.ac.ke Email: info@must.ac.ke

University Examinations 2023/2024

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE CERTIFICATE IN
INFORMATION TECHNOLOGY

CIT 1213: SYSTEMS ANALYSIS AND DESIGN

DATE: APRIL 2024

TIME: 1¹/₂ HOURS

INSTRUCTIONS:

1. Answer Question ONE, and any other TWO
-

QUESTION ONE (30 MARKS)

a)

i) Define the term process modelling as used in system development. (2 marks)

ii) Distinguish between logical model and physical model as used in system development. (4marks)

b)

i) State and describe three components of a system (6 marks)

ii) Distinguish between deterministic and probabilistic system (4marks)

c) Describe three roles of a system analyst (6 marks)



- d) Samson, a system analyst at ABC company would like to carry out a feasibility study on a proposed system library information system to replace the existing manual system. Outline four items that should be included in terms of reference document for the system. (4 marks)
- e) With the aid of a sketch, explain two types of relationships used in ER diagrams. (4 marks)

QUESTION TWO (15 MARKS)

- a) A system analyst at Coca-Cola Company intends to collect views about a proposed system from users and management of the company. He opts to use questionnaires to achieve his objective.
- i. Explain three factors that could have influenced him to use questionnaires as a method of data capture. (6 marks)
 - ii. Explain two ways through which questionnaires could be administered to the respondent using ICT. (4 marks)
- b) Explain each of the following types of systems citing an example in each case (2 marks)
- i. Office support system
 - ii. Decision support system
- c) List three types of feedback required in a system. (3marks)

QUESTION THREE (15 MARKS)

- a) Define system development life cycle (2 marks)
- b) Discuss the activities conducted during a feasibility study. (6 marks)
- a. What is system design? (1 marks)
 - b. Explain three system design tools (6 marks)



QUESTION FOUR (15 MARKS)

- a) In a subscription system, subscription transactions are processed. First, each transaction is validated. Invalid transactions are rejected with an appropriate error message. Valid transactions are processed depending on their type i.e. new subscription, renewal or cancellation. For a new subscription, a customer record is built and a bill is generated for the balance due. For cancellation, the record is flagged for deletion and a refund is issued. Construct a decision tree for the above. (6 marks)
- b) Explain the following terms as used in system analysis and design (4 marks)
- i. Open system
 - ii. System analysis
- c) Describe the components of a data flow diagram (5 marks)

