



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN INFORMATION
TECHNOLOGY**

CITY CAMPUS - EVENING

CIT 114: SYSTEMS ANALYSIS AND DESIGN

Date: 21st June, 2017

Time: 5.30 - 8.30 pm

INSTRUCTIONS:

- Answer ALL question in SECTION A and any other TWO from SECTION B
- Write your registration number on all sheets of the answer book used.
- Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate number on the space provided on the page of the answer sheet.
- Fasten together all loose answer sheets used.
- No mobile phones in the examination room.

MASENO UNIVERSITY

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SECTION A: COMPULSORY QUESTION {30 MARKS}

QUESTION 1

- a) Describe the various stakeholders in any Information System. [6 Marks]

- b) Describe the three building blocks in any Information system. [6 Marks]
- c) State and explain the four feasibility tests that should be undertaken before undertaking the development of an information system [8 Marks]
- d) Differentiate between functional requirements and nonfunctional requirements. [4 Marks]
- e) Almost 80% of Information Systems are developed to solve a certain problem. Describe the PIECES Approach to solving problems [6 Marks]

SECTION B: ANSWER ANY TWO QUESTIONS {20 MARKS EACH}

QUESTION 2

- a) Using examples and diagrams describe the following concepts applied in data modeling [8 Marks]
 - i. Unary/recursive relationship
 - ii. Attribute
 - iii. Entity
 - iv. Foreign Key
- b) Differentiate between identifying and non-identifying relationships. [4 Marks]
- c) Define the term normalization and explain the three levels of normalization. [8 Marks]

QUESTION 3: 20 MARKS

- a) Using examples and diagrams describe the following concepts used in process modeling. [6 Marks]
 - i. Process.
 - ii. Dataflow
 - iii. Data store

- b) When constructing DFDs (Data Flow Diagrams) there three common mistakes that the modelers can make. Describe each one of them. [6 Marks]

- c) Define the term CASE, stating the various tools that are provided in CASE [8 Marks]

QUESTION 4: 20 MARKS

- a) Define the following terms [4 Marks]
- i. System Design
 - ii. Application Architecture
- b) Differentiate between a distributed and centralized system. [4 Marks]
- c) Describe four advantages of prototyping. [4 Marks]
- d) Describe four types of servers common in client server architectures. [4Marks]
- e) Explain the meaning of the following terms [4 Marks]
- i. Database architecture
 - ii. A database management system (DBMS)

QUESTION 5: 20 MARKS

- a) Describe the following information systems development approaches
- i. Model driven development (MDD) [6 Marks]
 - ii. Rapid Application Development (RAD) [2 Marks]
- b) Define the following terms [4 Marks]
- i. IS Project
 - ii. Project Management
- c) During the execution of a project there is the precedence in which the tasks must be ordered. Using diagrams describe four inter-task dependencies. [8 Marks]

End of Exam