



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR  
SECOND YEAR SECOND SEMESTER**

**SCHOOL OF SCIENCE AND INFORMATION  
SCIENCES**

**DEPARTMENT OF COMPUTING AND  
INFORMATION SCIENCES  
DEGREE IN INFORMATION SCIENCES**

**COURSE CODE: COM 2103**

**COURSE TITLE: SYSTEMS ANALYSIS AND  
DESIGN**

**DATE: 25<sup>TH</sup> APRIL 2019**

**TIME: 8.30-10.30AM**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER ALL QUESTIONS IN SECTION A AND ANY 2 QUESTIONS IN  
SECTION B**

**This paper consists of 3 printed pages. Please turn over.**

## SECTION A: COMPULSORY [30 MARKS]

### QUESTION ONE

- i. The term "System" is derived from the Greek word systema. Define [2 marks]
- ii. Explain the following basic elements of the system:
  - a. " Resources [2 marks]
  - b. " Procedures [2 marks]
  - c. " Data/Information [2 marks]
  - d. " Processes [2 marks]
- iii. Distinguish between the following systems classification
  - a. Physical or Abstract System [2 marks]
  - b. Open Closed System [2 marks]
- iv. Define the term "Information System" [2 marks]
- v. Information system can be FORMAL or INFORMAL differentiate [4 marks]
- vi. Explain any two types of information system [4 marks]
- vii. Define the following terms
  - a. System analysis [2 marks]
  - b. System design [2 marks]
  - c. System analyst [2 marks]

## SECTION B: ANSWER ANY TWO QUESTION [40 MARKS]

### QUESTION TWO

- a. Discuss any Two categories of end users of the system [4 marks]
- b. Distinguish between ***Process-centered methodologies*** and ***Data-centered methodologies*** [4 Marks]
- c. Distinguish between *Agile Development* and *Extreme Programming*  
*Extreme programming (XP)* [4 marks]
- d. Explain the following documenting tools, which are available to the analyst.
  - i. Decision trees, [2 Marks]
  - ii. Data Dictionary, and [2 Marks]
  - iii. The CASE tools. [2 Marks]
- e. Explain the term "*Data Passing*" as used in modularization [2 Marks]

### QUESTION THREE

- a. Outline the six major Activities involved in any Life cycle Model [6 marks]
- b. The feasibility of the system is evaluated on the three main issues, state and explain [6 Marks]
- c. Implementation is a critical phase in any life cycle model discuss [4 marks]
- d. Explain each of the following and give the conclusion on the best option stating why
  - i. Change-over [2 Marks]
  - ii. Pilot run [2 Marks]

### QUESTION FOUR

- a. Distinguish between Temporal and Logical Cohesion as used in structuring module [2 Marks]
- b. Define the term “Prototype” as used in system development [2 Marks]
- c. Define the following terms as used in System Design
  - i. Notation [1 Mark]
  - ii. Methodology [1 Mark]
  - iii. Tools [1 Mark]
- d. Outline the four advantages of iterative prototyping life cycle model [4 marks]
- e. Explain why OO Methodology is the best method in system analysis and design process [4 Marks]
- f. Explain the four basic steps of system design using Object modeling [4 Marks]
- g. Explain the following as used in OO methodology under implementation
  - i. Functional model [2 Marks]
  - ii. Dynamic model [2 Marks]
- h. Define the term “Attribute” as used in E-R model [1 Mark]

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