



# TECHNICAL UNIVERSITY OF MOMBASA

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INSTITUTE OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION  
TECHNOLOGY

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF TECHNOLOGY IN INFORMATION COMMUNICATION  
TECHNOLOGY

EIT 4106: APPLICATION BUILDING

END OF SEMESTER EXAMINATION

**SERIES: APRIL2016**

**TIME:2HOURS**

**DATE:12APR2016**

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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### **QUESATION ONE (30 MARKS)**

Differentiate the following concepts of OOP language

- |   |           |
|---|-----------|
| i. Object and Class                     | [6 marks] |
| ii. Accessors and Mutators              | [6 marks] |
| iii. Overloading and Overriding         | [6 marks] |
| iv. Message Passing and Dynamic Binding | [6 marks] |
| v. Abstraction and Data hiding          | [6 marks] |

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### **QUESATION TWO (20 MARKS)**

Human-Computer Interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use. Using relevant examples discuss how the following principles are realized in HCI

- |                        |           |
|------------------------|-----------|
| i. Task Analysis       | [4 marks] |
| ii. Prototyping        | [4 marks] |
| iii. User Interface    | [4 marks] |
| iv. Interaction Design | [4 marks] |
| v. Evaluation          | [4 marks] |

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### **QUESATION THREE (20 MARKS)**

When writing a book, an author writes a chapter then gives a reviewer to review the book. The reviewer returns the review work back to the author who revisits the chapter. This process repeats until all the chapters of the book are finish. The author then gives the finish book to the typesetter. The typesetter typesets the book and gave it back to the author to correct proof. The author then returns the book to the typesetter for reset. Finally the author hands over the book to the printer for printing.

#### **Required**

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|---|------------|
| A. Analysis the system and identify the Actors and Use-Case                       | [5 marks]  |
| B. Elaborate in details the scenario to conceptualized the above system design    | [5 marks]  |
| C. Draw an UML Use-Case Diagram architectural to conceptualized the system design | [10 marks] |

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### **QUESATION FOUR (20 MARKS)**

Differentiate the following database terminologies

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|---|-----------|
| i. DBMS and DB                            | [5 marks] |
| ii. Serial schedule and Complete schedule | [5 marks] |
| iii. Schedule and Serialisability         | [5 marks] |
| iv. Transaction and DBS                   | [5 marks] |

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### **QUESATION FIVE (20 MARKS)**

The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals and user-centered design. Using appropriate diagram, discuss the following user interface development process tasks.

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|-------------------------------------|-----------|
| i. Analysis of user goals           | [4 marks] |
| ii. Creation of design alternatives | [4 marks] |
| iii. Evaluate options               | [4 marks] |
| iv. Implement Prototype             | [4 marks] |
| v. Test and Refine                  | [4 marks] |
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