# TECHNICAL UNIVERSITY OF MOMBASA

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. Attemptquestion ONE (Compulsory) and any other TWO questions.

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

**QUESATION ONE (30 MARKS)**

Using relevant examples discuss the following OOP concepts

i. Object [6 marks]
ii. Class [6 marks]
iii. Inheritance [6 marks]
iv. Polymorphism [6 marks]
v. Abstraction [6 marks]

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**QUESATION TWO (20 MARKS)**

An interaction technique or style is a way of using a physical input/output device to perform a generic task in a human-computer dialogue. As a system designer who have been recently appointed by Google Company to improve the accessibility of the services, discuss the following interaction techniques or style to be implemented in their products and services

i. Command languages [4 marks]
ii. WIMP - Window, Icon, Menu, Pointer [4 marks]
iii. Direct manipulation [4 marks]
iv. Speech/Natural language [4 marks]
v. Gesture & pen [4 marks]

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**QUESATION THREE (20 MARKS)**

A system analyst files the following report on a train ticket distribution system. The travelers can purchase different types of tickets. A control computer system, maintains reference database for the train fare tariffs. The travelers can buy one-way tickets, weekly-cards, monthly-cards, or update-tariffs. The following exceptional cases can also occur: Timeout – when the traveller takes too long to insert the right amount, Abort – when the traveller press cancel button to terminate the transaction before completion, Distribute out change, and Distribute out paper.

**Required**

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 system design [10 marks]

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**QUESATION FOUR (20 MARKS)**

A transaction is the DBMS's abstract view of a user program, which composes of a series of, reads and writes of database objects. Using relevant examples discuss the following ACID properties of a transaction

i. Atomicity [5 marks]
ii. Consistency [5 marks]
iii. Isolation [5 marks]
iv. Durability [5 marks]

**QUESATION FIVE (20 MARKS)**

Using a well label diagram discuss the following phases of SDLC

i. Requirement Analysis [5 marks]
ii. Design [5 marks]
iii. Coding [5 marks]
iv. Testing [5 marks]
v. Maintenance [5 marks]