



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 13M Y2 S2 – S-EV)

EIT 2205: OBJECT ORIENTED ANALYSIS & DESIGN

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

- a) Define the following terminologies as used in object-oriented analysis and design: **(10 marks)**
- (i) OOA
 - (ii) OOD
 - (iii) OOM
 - (iv) SDLC
 - (v) OOAD
- b) Using a well labeled diagram, describe the process of System Development Life Cycle. **(10 marks)**

Question Two

- a) Draw UML Notations for the following relationships using appropriate examples. **(12 marks)**
- (i) Association
 - (ii) Inheritance
 - (iii) Implementation
 - (iv) Dependency
 - (v) Aggregation
 - (vi) Composition
- b) Give FOUR advantages of object-oriented methodology **(8 marks)**

Question Three

A system analyst files the following export on 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, exceptional cases can also occur. Time out when the traveler takes too long to insert the right amount; Abort-when the traveler presses the cancel button to terminate the traveler before (impletion; distributed out change and distributed out paper)

Required:

- (i) Analyze the system and identify actors and use-cases, **(5 marks)**
- (ii) Elaborate in details the scenario to conceptualize system **(5 marks)**
- (iii) Draw an UML use-case Diagram architectural to conceptualize above system design. **(10 marks)**

Question Four

Draw UML Class Diagram Notations to explain the following concept.

- a) Association **(5 marks)**
- b) Cardinality **(5 marks)**
- c) Inheritance **(5 marks)**
- d) Composition **(5 marks)**

Question Five

When writing a book, an author writes a chapter then gives a reviewer 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 give it back to the author to correct proof. The author then returns the book to the typesetter for reset. Finally, the author heads over the book to the printer to printing.

Write a simple C program that does/uses arithmetic expressions.

Required:

Draw an UML Activity Diagram architectural design to conceptualized the above system design.

(20 marks)