



TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY
(BTIT 13J)

EIT 4210: OBJECT ORIENTED ANALYSIS & DESIGN

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2013

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** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

- a) Briefly explain the meaning of the following terms as used in object oriented analysis design
- (i) Object oriented analysis
 - (ii) Object oriented design (5 marks)
- b) Distinguish between the following object oriented concepts:
- (i) Class and object
 - (ii) Attribute and operation
 - (iii) Aggregation and association (6 marks)
- c) Suppose we wish to model an application for registering students in a university academic semester. Identify:
- (i) Three classes for the model (3 marks)
 - (ii) At least three attributes for each class (9 marks)

- d) Distinguish between a static model and dynamic model then give TWO examples of UML diagrams for each **(8 marks)**

Question Two

- a) Briefly explain the term “modeling” as used in object oriented analysis and design. **(4 marks)**
- b) Briefly explain the main principles of modeling **(8 marks)**
- c) Develop a use case model for the following scenario.

The goal is to process different types of credit applications at a bank. The credit applications include those for home equity loans, home mortgage loans, auto loans, and credit cards from the bank's perspective therefore, the customers are home owners, home buyers, auto buyers, and credit card applicants. To process any type of loan or credit card application, the bank needs to check the applicant's credit history based on a report from the credit bureau. For the first two types of loans the bank summons an assessor to assess the property value before making a decision. **(8 marks)**

Question Three

- a) Distinguish between the following object oriented concepts:
- (i) Abstraction and encapsulation
 - (ii) Inheritance and polymorphism **(8 marks)**
- b) Using example of a computer as an object oriented system, identify the following concepts:
- (i) Abstraction
 - (ii) Encapsulation
 - (iii) Interface **(12 marks)**

Question Four

- a) Explain the meaning of the following terminologies:
- (i) Object oriented approach
 - (ii) Object oriented analysis and design **(8 marks)**
- b) Briefly describe the object oriented design as a process **(5 marks)**
- c) Consider a software process consisting of the following activities: requirements gathering, object oriented analysis, object oriented design, implementation and deployment. Explain the UML diagrams that are essential for each activity **(7 marks)**

Question Five

A student wants to register for the course. The course leader assists the student to select their modules. The modules that are selected are recorded by the school administrator in the registration file. Draw a use case diagram for the above case. **(20 marks)**