MURANGA UNIVERSITY COLLEGE
(A constituent College of Jomo Kenyatta University of Agriculture & Technology)

MAIN CAMPUS

SPECIAL/SUPPLEMENTARY UNIVERSITY EXAMINATIONS

2015/2016 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE OF
BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

COURSE CODE: HBT 2305

COURSE TITLE: OBJECT ORIENTED ANALYSIS AND DESIGN

DATE: **TIME:**

INSTRUCTIONS TO CANDIDATES

Answer Question ONE (1) (compulsory) AND any other TWO

MRUC observes ZERO tolerance to examination irregularities

Question ONE

a) Explain the steps involved in Object Oriented Design process. (6 marks).

b) Differentiate between *an Include Relationship* and an *Extends Relationship* in a use case diagram. (4 Marks)

c) Using simple examples and diagrams, Explain how each of the following are depicted in UML. (8 marks)

i.) Aggregation and composition

ii.) Constraints

iii.) Class interfaces

iv.) Association classes

d) Describe UML deployment diagrams and component diagrams (8 marks)

Question TWO

a) Explain UML state machine diagrams with an example. (6 marks)

b) Briefly explain four advantages of Object Orientation. (8 marks)

c) Distinguish between formal class and abstract class. (3 marks)

d) Explain the need of an Object diagram. (3 marks)

Question THREE

a) Explain what takes place in each of the FOUR phases of a Rational Unified Process (RUP) lifecycle. (8 marks)

b) Draw a UML deployment diagram for the ATM system. (8 marks)

c) Differentiate between function oriented designs and object oriented designs. (4 marks)

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Question FOUR

a) Using relevant examples, explain the following terms with respect to the class diagrams in UML.

i.) Associations (3 marks)

ii.) Multiplicity (Cardinality) (3 marks)
iii.) Composition and Aggregation (4 marks)
iv.) Generalization (3 marks)

b) Explain any THREE limitations of Unified Modeling Language. (3 marks)

c) Briefly explain the characteristic features of an Interaction diagram. (4 marks)