



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN INFORMATION COMMUNICATIONTEHNOLOGY (BSCIT11M)

BIT 2112: SYSTEM ANALYSIS & DESIGN

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY/MARCH 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A & B**

Answer 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

SECTION A (COMPULSORY)

QUESTION 1

- a) Define
- (a) Analysis
 - (b) logical design
 - (c) Physical design. (6 marks)
- b) Which OOA/D method is associated with Jim Rumbaugh? (1 mark)
- c) Define 'object' (one sentence). (3 marks)
- d) Name the four components of an object. (4 marks)

- e) What is the difference between types, classes, instances and roles? (4 marks)
- f) What is a 'facet'? (2 marks)
- g) What is the difference between
 (a) Analysis and logical design? (4 marks)
 (b) Logical design and physical design? (4 marks)
- h) Name 2 OO methods or notations. (2 marks)

SECTION B (ANSWER ANY TWO QUESTIONS)

QUESTION 2

- a) (i) Explain the importance of feasibility study during system development.
 (ii) Describe **two** types of feasibility study. (6 marks)
- b) Explain **four** difficulties faced by developing countries while introducing information systems. (8marks)
- c) Describe **three** design controls necessary to ensure the quality and integrity of an information system. (6marks)

QUESTION 3

- a) Explain the following terms as applied in systems development;
 (i) Functional decomposition.
 (ii) Prototyping. (2marks)
- b) Outline two objectives of each of the following stages of the systems development life Cycle;
- i Feasibility study;
 - ii Analysis;
 - iii System testing;
 - iv Maintenance. (8marks)
- c) Name the four principal structures of an object model. (4 marks)
- d) What is the difference between a wrapper and a subsystem or package in most OOA methods? (4 marks)

- e) Name 2 OO methods or notations. (2 marks)

QUESTION 4

Dawa Pharm is a whole sale dispensing chemist. Its sales department receives orders from customers. If a new customer, the details are entered in the customer master file and given a customer number which is used in order processing. Customer orders are verified to ascertain that all order information is accurate and a record exists for the customer who is placing order. When orders are received, the order file is updated. The information is used to produce an invoice for all customers and copy sent to Fulfilment department. Using the information provided, draw a;

- i Context diagram (level 0)
- ii Level one DFD (15 marks)

- a) List **five** characteristics of a well designed source document. (5marks)

QUESTION 5

- a) Distinguish between an Entity Relationship diagram and an Entity Life History diagram. (4marks)
- b) Outline **three** key factors to consider in preparing an interview for system preliminary investigation. (3 Marks)
- c) Read the following information and then answer the questions that follow.

The daily invoicing routine by an accountant in Butazi Company Ltd. is as follows; Once the purchase orders have been received , they are first entered into the system. The orders are then sorted according to the total amounts and processed as per the guidelines provided in table 1.

Order Amounts (KSH)	Action
10,000 or less	-pay in cash -offer no discount
10,001-40,000	-pay by cheque -offer 10% discount
40,000-200,000	-pay by cheque Offer 20% discount
More than 200,000	-seek management approval -offer 30% discount

Table 1

- Draw a program flow chart to represent the invoicing routine. (13 Marks)