



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

*Faculty of Engineering & Technology*

DEPARTMENT OF COMPUTING AND IT

DIPLOMA IN INFORMATION (COMMUNICATION) TECHNOLOGY

(DIT MOD II)

END OF SEMESTER EXAMINATIONS

APRIL/MAY 2010 SERIES

SYSTEMS ANALYSIS AND DESIGN

TIME: 2 hours

**INSTRUCTIONS TO CANDIDATES**

1. This paper consists of **THREE** Sections: **A**, **B** and **C**.
2. Section **A** has a Total of **30** Marks. Answer ALL Questions from this Section.
3. Section **B and C** has **TWO** questions each of **20 Marks**. Answer ONE Question from each Section.

**SECTION A : (30 MARKS COMPULSORY)**

**Question ONE**

- (a). Differentiate between cybernetic and deterministic systems stating an example in each case. **(4 marks)**
- (b). Outline **FOUR** skills that must be possessed by a system analyst. **(2 Marks)**
- (c). A system analyst would like to collect facts from an enterprise with minimal disruption of the operations.
- (i). Describe **TWO** appropriate methods that a system analyst would use in order to achieve his objective. **(4 Marks)**
- (ii). State **ONE** advantage of each method in 3(a) above. **(2 Marks)**
- (d). Define the term “feasibility study”. **(2 Marks)**
- (e). Briefly explain the following as applied in system analysis and design.
- (i). Functional decomposition. **(2 Marks)**
- (ii). Module and sub-system. **(2 Marks)**
- (f). Differentiate the following:
- (a). System flowchart and program flowchart. **(2 Marks)**
- (b). Module and sub-system. **(2 Marks)**
- (g). List **TWO** advantages and **TWO** disadvantages of using Decision Tables. **(2 Marks)**
- (h). List **FOUR** Benefits of structured walkthrough the System Analysis and Design. **(4 Marks)**

**SECTION B : (40 MARKS)**

**SELECT ANY TWO QUESTIONS ONE FROM EACH SECTION**

**Question TWO**

- (a). Differentiate between a decision table and a decision tree. **(4 marks)**
- (b). Briefly explain how the following rules apply in decision tables.
- (i). Dash Rule **(2 Marks)**
- (ii). Else Rule **(2 Marks)**

- (c). Mr. Miriti a businessman in NAIROBI supplies building materials to his customers who purchase on wholesale. He has laid down the following conditions.
- (i). If the orders amounts to shs.50,000 and above, 95% discount is given if the customer credit rating is good. If the customer has been with the company for over 3 years, the discount is increased to 6%.
  - (ii). If the orders amounts between shs.10,000 and shs.50,000, a 3% discount is given if the customer credit rating is good. If the customer has been with the company for over 3 years, the discounts is increased to 4%.
  - (iii). If the orders amounts is less than or equal to Shs.10,000 no discount is given.
  - (iv). If the credit rating is not good in all cases, the order is referred to the manager.

Draw a decision tree to represent the above scenario.

**(12 Marks)**

### **Question THREE**

- (a). With the aid of appropriate notations, describe the **THREE** control structures that are supported by Jackson structured programming techniques. **(6 Marks)**
- (b). A stock record file is to organized into sections by contents, in these case, children's clothes, men's clothes and woman's clothes. The records on each section are updated on daily basis. Using Jackson structured programming technique, draw a structure diagram to represent the above sections. **(8 Marks)**
- (c). List the **SIX** stages in Jackson system development cycle. **(6 Marks)**

### **SECTION C**

#### **Question FOUR**

- (a) The management of Kazuki Company Ltd has commissioned and investigation into the viability of installing a new system inorder to improve their services.
  - (i) Describe **THREE** types of feasibility that are likely to be carried out. **(6 Marks)**
  - (ii) A feasibility study reports is expected at the end of the investigation. Describe the typical contents of such a report. **(6 Marks)**
- (b) With the aid of a diagram, describe the classical waterfall model. **(6 Marks)**
- (c). Outline **TWO** functions of information systems. **(2 Marks)**

**Question FIVE**

- (a). Briefly explain any **FOUR** qualities of a system analyst. **(4 Marks)**
- (b). Explain **FIVE** factors considered during systems development. **(10 Marks)**
- (c). State **THREE** causes of user resistance during systems development. **(3 Marks)**
- (d). State any **THREE** reasons for recording facts during systems investigation. **(3 Marks)**