# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

*Faculty of Engineering & Technology*

**DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY**

**HIGHER DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY**

**FINAL EXAMINATION**

**APRIL/MAY 2010 SERIES**

## SYSTEM ANALYSIS AND DESIGN

**TIME: 2½ HOURS**

**Instructions to Candidates**

1. Answer Question **ONE** from Section **A (COMPULSORY)**
2. And any **TWO** Questions from Section **B.**

**SECTION – ATTEMPT ALL**

**Question ONE**

(a). Define the following terms as used in system analysis and design;

(i). System design **(2 Marks)**
(ii). Feasibility study **(2 Marks)**
(iii). Normalization **(2 Marks)**

(b). List **THREE** fact-finding techniques. **(3 Marks)**

(c). Differentiate between the following terms:

(i). Logical Process Model and Physical Models **(4 Marks)**
(ii). Data flow diagram and Entity relation diagram **(4 Marks)**

(d). List **FOUR** benefits of using structured walkthroughs. **(4 Marks)**

(e). Define "an accidental manager". **(2 Marks)**

(f). List **THREE** characteristics of a software project. **(3 Marks)**

(g). Briefly explain the following:

(i). As-Is-System **(2 Marks)**
(ii). To-Be-System **(2 Marks)**

**SECTION B - ANSWWER ANY TWO QUESTIONS**

**Question TWO**

(a). Briefly describe the first three stages of Normalizing data. **(6 Marks)**

(b). The figure below shows a typical requisition form in a particular institute. Study it and answer the question that follows:

| | | | |
|---|---|---|---|
| Requisition No. **R2000912** | | | |
| Date of Issue **10/10/2010** | | | |
| Department No. **SP210** | | | |
| Department Name. **STORES AND PROCUREMENT** | | | |
| Item No. | Item Description | Quantity | Unit Cost |
| FS001 | Foolscaps | 3 Reams | 400 |
| FS001 | Chalk | 6 Packets | 500 |

| | | | |
|---|---|---|---|
| | | | |

Normalize the data in the form to Third Normal Form. **(12 Marks)**

(c). Explain any **TWO** advantages of normalization. **(2 Marks)**

**Question THREE**

(a). System design phase is the translation of the "what" of the analysis phase to the "how" of the new development. Explain. **(4 Marks)**

(b). Clearly explain the **THREE** design Strategies as used in System design. **(9 Marks)**

(c). List **FOUR** factors to consider when selecting a design strategy. **(4 Marks)**

(d). Explain system integration as applied in system analysis and design. **(3 Marks)**

**Question FOUR**

(a). Define Structured Walkthrough. **(2 Marks)**

(b). State any **SIX** ways of Testing a System. **(6 Marks)**

(c). State **FOUR** methods of system conversion. **(4 Marks)**

**Question FIVE**

(a). State any **FOUR** ways of measuring the goodness of a user interface. **(4 Marks)**

(b). Briefly explain the following data modeling terms giving an example for each:

(i). Entity **(2 Marks)**
(ii). Relations **(2 Marks)**
(iii). Attribute **(2 Marks)**

(c). State the stages of System Development Lifecycle. **(6 Marks)**

(d). In your own opinion, which stage in Question c. above is the longest. Explain why. **(4 Marks)**