



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY
BTIT MAY 11

EIT 4206: SYSTEMS ANALYSIS & DESIGN

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MAY/JUNE 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

Answer any **THREE** questions. Question **ONE** is Compulsory

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A (Compulsory - 30 marks)

Question One (30 Marks)

- a) Differentiate between analysis and design (4 marks)
- b) Explain **TWO** problems that are commonly associated with traditional SDLC (4 marks)
- c) State how one of your suggested alternative systems development approach could help to overcome the problems that you described in (b) above (4 marks)
- d) State **FOUR** objectives of preliminary investigation (4 marks)
- e) Explain **FOUR** objectives of input design (8 marks)
- f) List **SIX** areas that are looked at in a typical post-implementation evaluation once a new system is operational (6 marks)

SECTION B (Answer any TWO questions – 40 Marks)

Question Two (20 marks)

The Hostel Management System allows a student in Mombasa Polytechnic University College to:

- Apply for a room
- Reserve a room
- Apply for a room transfer

Applications for room allocations can be accepted or rejected. Once a student has been invoiced, he/she pays the money in a bank and then issues a bank deposit slip for a room. The student then pays using the slip and is given a receipt. Details of rooms allocated and reserved are stored. Payment details are also stored. Draw:

- i) Context diagram
- ii) Level 0 DFD
- iii) Level 1DFD

(20 marks)

Question Three (20 marks)

- a) In a print shop, 3 customers are defined, a regular customer, a silver customer and a gold customer. These are assigned by the amount of business the customer does with the print shop over a 12 month period. A regular customer receives normal print rates and delivery. A silver customer gets an 8% discount on all quotes and is placed ahead of all regular customers in the job queue. A gold customer gets a 15% reduction in quoted prices and is placed ahead of both regular and silver customers in the job queue. A special discount of X% in addition to other discounts can apply to any customer's quote at the discretion of management. Analyze this information using a Decision Table. (9 marks)
- b) Explain the following maintenance activities:
- i) Corrective maintenance
 - ii) Adaptive maintenance
 - iii) Perfective maintenance
- (6 marks)
- c) State FIVE indicators of system obsolescence (5 marks)

Question Four (20 marks)

Study the TWO project below:

Project A		
Year	Cost	Benefits
0	600000	3000
1	17000	28000
2	18500	31000
3	19200	34000
4	21000	36000
5	22000	39000
6	23000	42000

Project B

Year	Cost	Benefits
0	418040	0
1	15045	150000
2	16000	170000
3	17000	190000
4	18000	210000
5	19000	230000
6	20000	250000

- Differentiate between the Payback Analysis, Return on Investment and Present Value Analysis techniques (6 marks)
- Calculate the Payback period of each project (12 marks)
- With reasons, state which project is desirable (2 marks)

Question Five (20 marks)

The following is a description of a tender system for AFC (Agriculture Finance Corporation)

A list of all items that would be needed for the effective and successful operation within the corporation is made. The list is then taken for approval by the head of purchasing and supplies department is then made in the daily newspaper inviting interested tenders to collect the application forms from the corporation.

The application forms are duly filled by the applicants and returned to the corporation i.e purchasing and supplies department. The renderers are meant to bring sample goods with the dully filed application forms.

The sample goods are given the same numbers as the ones given to the respective tenderers. These are then taken before the central tender committee to choose on the suppliers. A few forms are chosen from the heap and then analyzed. Thus tenders with good quality goods at reasonable prices, who have high frequencies in low prices, who have good supplying past records and who have a trustworthy capital outlay are chosen.

The qualified tenderers are then informed accordingly and a contact signed between the corporation and the tenders. The corporation informs the supplier when to supply a particular good by sending the responsible supplier a local purchase order.

The supplier delivers the goods and invoices at the corporation. The corporation then draws a cheque to pay the respective suppliers.

Draw a dataflow diagram (DFD) that reflects the system above at the following levels;

- Context diagram
- Level-0 DFD
- Level-1 DFD