



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 101: SYSTEMS ANALYSIS AND DESIGN

DATE: TUESDAY, 10TH APRIL 2012

TIME: 8.00A.M – 10.00A.M

Instructions To Candidates

Answer question ONE and any other TWO.

Question One (Compulsory)

- a) Explain the term 'Outsourcing'.

(2 marks)

- b) Explain **three** problems that can be encountered during system development as a result of getting wrong systems requirements.

(6 marks)

- c) A bus company applies the following rules in deciding what fares will be charged to its passengers: passengers under the age of 16 and old age pensioners are charged half the full fare. All other passengers are charged full fare except for the bus pass holders who do not pay fare. Using this scenario, prepare a decision table

(6 marks)

- d) Outline four types of tests that should be conducted on an Information system

(4 marks)

- e) Mention four system development stakeholders and the role they play.

(4 marks)

- f) State four major tasks done during the implementation stage of an information system.

(4 marks)

E) Explain two types of interview questions.

(4 marks)

Question two

a) The Hostel Management System allows a student in Kenyatta University main Campus 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

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 applied 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** ways in which a questionnaire can be administered.

(5 marks)

Question Four

- (a) Read the following extract from pseudo code of a sales program.

```
If order is from bookstore
    And if order is for 6 or more copies
        Then discount is 25%
    Else (if order is for less than 6 copies)
        No discount is allowed
Else (if order is from library)
    If order is for 50 or more copies
        Then discount is 15%
    Else if order is for 20-49 copies
        Then discount is 10%
    Else if order is for 6-19 copies
        Then discount is 5%
    Else if order is for less than 6 copies
        No discount is allowed
```

Required: Represent the information in a flowchart.

(12 marks)

- (b) Explain four feasibility tests that can be done during the analysis stage of system development process.

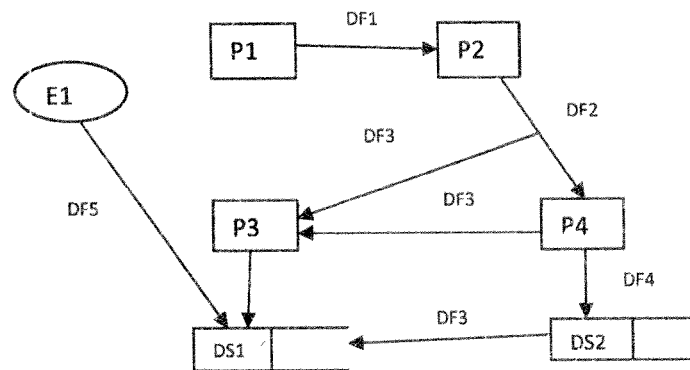
(8 marks)

Question Five

(a) State and briefly describe the role of four DFD components.

(8 marks)

(b) Study the Data Flow Diagram below.



List five errors you can find in the above DFD.

(5 marks)

(c) Describe the following keys used in data modelling.

(4 marks)

- (i) Primary key
- (ii) Candidate key
- (iii) Composite key
- (iv) Foreign key

(d) Mention three benefits of using Joint Requirements Planning (JRP).

(3 marks)