



KENYATTA UNIVERSITY
DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING (DSVOL)
EXAMINATION FOR DIPLOMA IN INFORMATION TECHNOLOGY

SIT 029: INTRODUCTION TO SYSTEM ANALYSIS

2ND TRIMESTER 2023/2024

TIME: 2 HOURS

INSTRUCTIONS: Answer question ONE and any other TWO.

Question One

- (a) Define the following. (4 marks)
 - (i) Information system
 - (ii) Joint resource planning (JRP)
- (b) Describe the following keys as used in Database Management System(DBMS).
 - (i) Primary key
 - (ii) Foreign key
 - (iii) Composite key
 - (iv) Candidate key(4 marks)
- (c) Explain four results of using wrong requirements during system development. (8 marks)
- (d) Give four ways in which a questionnaire can be administered during data collection. (4 marks)
- (e) State and explain the stages of system development life cycle. (10 marks)

Question Two

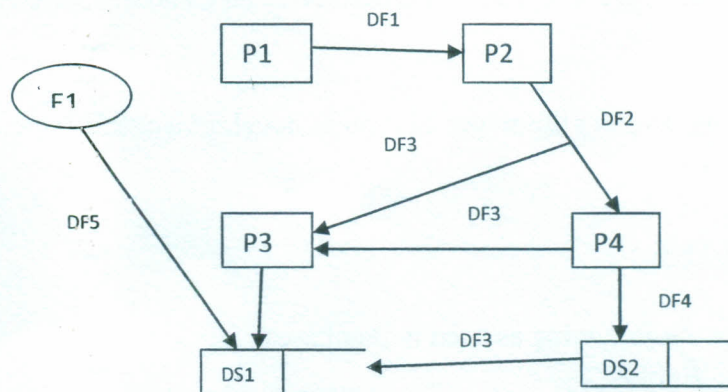
- (a) Define the following as used in databases. (4 marks)
 - (i) Entity
 - (ii) Attribute
 - (iii) Tuple
 - (iv) Relation
- (b) Identify five information system stakeholders. (5 marks)
- (c) Describe three types of feasibility studies that can be done during system analysis. (6 marks)
- (d) Give five reasons why a researcher would prefer to use interview as a tool for data collection as opposed to using questionnaires. (5 marks)

Question Three

- (a) State and explain four system changeover methods. (8 marks)
- (b) Give two advantages and two disadvantages of using document review for fact finding. (4 marks)
- (c) A postal delivery company delivers parcels by air or rail transport. The price of delivery by air depends upon the weight of the parcel. There is a basic charge of 5 euros per kg upto 50 kgs. Excess weight 50 kg is charged at 3 euros per kg. Delivery by rail is charged at 3 euros per kg upto 50 kgs and then 2 euros per kg. There is a special service guaranteeing same day delivery which carries an additional flat rate charge of 20 euros. Any deliveries overseas are charged at double the normal rate. Required: Represent the above information in a decision tree. (8 marks)

Question four

- (a) Mention four components of a data flow diagram? (4 marks)
- (b) Giving examples differentiate between functional and non-functional requirements of a system. (4 marks)
- (c) Explain four functions of a well-designed user interface. (8 marks)
- (d) Study the Data Flow Diagram below.



- (i) List four errors you can find in the above DFD. (4 marks)

Question five

- (a) Describe the following. (4 marks)
- (i) Business Process Redesign(BPR)
 - (ii) Legacy systems.
- (b) Explain the normalization process in database design. (6 marks)
- (c) 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. (10 marks)