

CHUKA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

### FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

**COSC 0130: SYSTEM ANALYSIS AND DESIGN**

**STREAMS: DIP.COMPSCI Y1S2**

**TIME: 2 HOURS**

**DAY/DATE:**.....

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#### INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.
- Marks are awarded for clear and concise answers.

#### SECTION A (Answer ALL questions)

##### QUESTION ONE (30 Marks)

- Define the following terms as used in data flow diagrams: (2 marks)
  - Process
  - Data store
- Discuss THREE types of system maintenance. (6 marks)
- Explain THREE characteristics of a good system. (6 marks)
- State and explain the two ways of interviewing. (4 marks)
- Define the term System changeover. (2 marks)
- State TWO types of file organization methods. (2 marks)
- List FOUR characteristics of system obsolescence (4 marks)
- List FOUR types of system documentation. (4 marks)

**QUESTION TWO (20 Marks)**

- a) A system development methodology refers to the framework that is used to structure, plan, and control the process of developing an information system. State and explain FOUR system development methodologies. (8 marks)
- b) State and explain FOUR techniques used to gather information in system analysis phase. (8 marks)
- c) State and explain two training methods that you can use to train the end users during the system implementation phase. (4 marks)

**QUESTION THREE (20 Marks)**

- a) Testing is the process or activity that checks the functionality and correctness of software according to specified user requirements in order to improve the quality and reliability of system. State and explain THREE types of system testing. (6 marks)
- b) A mail order company distributes CDs and tapes at discount prices to its members. When an order processing clerk receives an order form, she verifies that the sender is a member by checking the MEMBER FILE. If the sender is not a member, the clerk returns the order along with a membership application form. If the customer is a member, the clerk verifies the order item data by checking the ITEM FILE. Then the clerk enters the order data and saves it to the DAILY ORDERS FILE. At the same time the clerk also prints an invoice and shipping list for each order, which are forwarded to the ORDER FULFILLMENT DEPARTMENT for processing there. Draw a Data Flow Diagram for the Mail order. [10Mks]
- c) Differentiate between the following two types of system designs, physical and logical system design. (4 marks)

**QUESTION FOUR [20 Marks]**

- a) For a quality functional software to be developed within the budget and the scheduled time it has to go through several tests known as feasibility study to check its workability and whether it meets the user requirements. Discuss FOUR main types of feasibility studies to be conducted. [8Mks]
- b) State and explain TWO types of forms used during system design phase. (4 marks)
- c) State and explain FOUR levels of QA and testing that need to be performed in order to certify a software product. (8 marks)

**QUESTION FIVE [20 Marks]**

- a) State and explain SEVEN major steps of the systems development life cycle (14 Marks)
- b) Draw and explain THREE symbols used in entity relationship model. (6 marks)

