

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)

- a) Define the following terms as used in entity relationship model: (2 marks)
  - i. Entity
  - ii. Attribute
- b) A system is a set of related components that produces specific results. State and explain FOUR components that make up an information system. (4 Marks)
- c) Distinguish between structured analysis and object-oriented analysis (4 Marks)
- d) State and explain any THREE main functions of an IT department. (6 Marks)
- e) Explain the relevance of a contract document in systems development (3 Marks)

- f) Briefly explain FIVE signs of system obsolescence. (5 Marks)
- g) No system can be successful without proper training. Briefly explain each of the following training methods.  
(6 Marks)
  - i. Webinar
  - ii. Podcast
  - iii. Tutorial

**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) Interviewing is an important fact-finding tool during the systems analysis phase. List six steps required for a successful interview. (3 Marks)
- c) Because information systems affect people throughout an organization, you should consider team-oriented strategies as you begin the systems analysis phase. State and explain THREE team-oriented strategies, giving ONE advantage and ONE disadvantage of each. (9 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) Mail order catalogue system allows people to shop from home. When a customer receives the catalogue and wants to buy something, they can telephone, fax or email their order to the company. The company gets the order and sends the goods and an invoice. When the customer receives the goods with a delivery note, they send payment and receive a receipt for their payment. Draw a Data Flow Diagram for a Mail order catalogue system. [10Marks]
- c) Differentiate between the following two types of system designs, physical and logical system design. (4 marks)

**QUESTION FOUR [20 Marks]**

- a. Every IT project involves risks that systems analysts and project managers must address.
  - i. Define the term Risk Management (4 Marks)
  - ii. State and explain FIVE steps in Risk Management (10 Marks)

- b. Briefly explain the following concepts as related to system analysis (6 Marks)
- i. Scalability
  - ii. System Requirement
  - iii. Critical Path

**QUESTION FIVE [20 Marks]**

- a) State and explain SEVEN major steps of the systems development lifecycle (14 Marks)
- b) State and explain THREE skills that a system analyst should possess (6 Marks)