

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**RESIT/SPECIAL EXAMINATION**

**EXAMINATION FOR THE AWARD DIPLOMA IN COMPUTER SCIENCE**

**COSC 0130: SYSTEM ANALYSIS AND DESIGN**

**STREAMS: DIPLOMA COSC**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 31/08/2023**

**8.30 A.M – 10.30 A.M.**

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**INSTRUCTIONS:**

**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) State and explain FOUR characteristics of a good system. (4 marks)
- d) No system can be successful without proper training. Briefly explain each of the following training methods. (6 Marks)
  - i. Webinar
  - ii. Podcast
  - iii. Tutorial
- e) Define the term **system prototyping** and explain its disadvantage. (4 marks)
- f) State and explain any THREE main functions of an IT department. (6 Marks)
- g) State any FOUR advantages of having a 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 the FOUR system changeover strategies that one can use to convert from an old system to a new system. (8 Marks)
- c) Distinguish between structured analysis and object-oriented analysis (4 Marks)

**QUESTION THREE (20 Marks)**

- a) They are various types of tests that are conducted on a developed system. State and explain any THREE types of testing that can be conducted on a system. (6 marks)
- b) A student enrolled for a Diploma in Computer Science at ABC university through the following process. He/she is assigned an advisor who helps in filling the Registration form. The student submits the form to the Registrar who upon approval allows the student to register for classes. An instructor is tasked with ensuring that the student attends classes, evaluate him/her and submit the grades. Draw a use-case diagram for a student records system for ABC university. (7 Marks)
- c) State and explain the SDLC major phases. (7 marks)

**QUESTION FOUR (20 Marks)**

- a) Documentation includes program documentation, system documentation, operations documentation, and user documentation. Briefly describe each type of documentation. (8 Marks)
- b) State and explain FOUR skills that a system analyst should possess. (8 Marks)
- c) Briefly explain FOUR signs of system obsolescence. (4 Marks)

**QUESTION FIVE (20 Marks)**

- a) 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. [10 marks]
  - b) Explain **two** benefits of carrying out a feasibility study in system development. (4 marks)
  - c) Distinguish between a system designer and a system developer. (2 marks)
  - d) James used a data dictionary in analyzing a system. Outline **two** benefits he realized from using this. (4 marks)
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