**061006T4ICT**

**ICT Technician Level 6**

**ICT/CU/IT/CR/12/6/A**

**Perform System analysis and Design**

**Nov. /Dec. 2022**

**THE KENYA NATIONAL EXAMINATIONS COUNCIL**

**WRITTEN ASSESSMENT**

**Time: 3 hours**

**INSTRUCTIONS TO CANDIDATES**

*Maximum marks for each question is indicated in brackets ( )*

*This paper consists of TWO sections: A and B.*

*Answer questions as per instructions in each section.*

*You are provided with a separate answer booklet*

*This paper consists of THREE (3) printed pages*

*Candidates should check the question paper to ascertain that all the pages are*

*printed as indicated and that no questions are missing*

## SECTION A (40 Marks)

*In this section, you are required to provide short responses in the answer sheets provided*

1. Identify the **four** models used in system development life cycle **(4 Marks)**

2. Outline **four** types of systems used in system analysis and design. **(4 Marks)**

3. Explain the **four** types of system testing **(4 Marks)**

4. What are the **seven** major activities that must be done during the design phase

   **(4 Marks)**

5. Identify any **four** project-planning phase activities that are required to get the project organized.

   **(4 Marks)**

6. Identify **two** techniques used in data modeling. **(4 Marks)**

7. What are the roles of a system analyst in project development life cycle

   **(4 Marks)**

8. Outline any **four** advantages of project feasibility analysis **(4 Marks)**

9. What are the **four** key components of information systems? **(4 Marks)**

10. In order to best support user's IT needs, IT professionals need to understand the company's business operations. What process might a system analyst use to accomplish this?

    **(4 Marks)**

## SECTION B (60 MARKS)

*In this section, you are required to Attempt <u>THREE</u> Questions in the answer sheets provided.*

11. A purchasing department receives a purchase requisition from the stores. The requisition is checked and an invalid requisition is returned to the stores for corrections. An order is made out using a file of approved suppliers and sent to the appropriate supplier who then files a copy of the order and the requisition. When the goods are received, the invoice is compared with the filed order; an invalid invoice is returned to the supplier while a valid invoice are passed to the accounts department for payment. Using this scenario, draw a level 1 DFD (Data Flow Diagram) to explain the case study above. **(20 Marks)**

12. a) Discuss any **five** components of a DSS **(10 marks)**

    b) Discuss Any **Five** different types of feasibility that can be carried out during feasibility study

    **(10 Marks)**

13. Filling is an important aspect of every organization. Identify the various file organization methods that maybe used during the designing of systems. Clearly stating their advantages and disadvantages. **(20 Marks)**

14. a) Three account balances are stored in a computer memory in a random order. The only information available about them is that all the numbers are different. Develop a decision table for the analysis of the process that will allow the computer to print the name and amount of the customer with the highest balance **(8 Marks)**

    b) A company has several departments. Each department has a supervisor and at least one employee. Employees must be assigned to at least one but possibly more departments. At least one employee is assigned to a project but an employee may be on vacation and not assigned to any projects. The important data fields are the names of the departments, projects, supervisors and employees as well as the supervisor and employee number and a unique project number.

    Draw an **ERD** for the above **(12 Marks)**

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