

061006T4ICT

ICT TECHNICIAN LEVEL 6

IT/OS/ICT/CR/12/6

PERFORM SYSTEM ANALYSIS AND DESIGN

NOV/DEC 2023



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

Time: 3 Hours

INSTRUCTIONS TO CANDIDATE

1. This paper has TWO sections A and B. Attempt questions in each section as per instructions given in the section.
2. You are provided with a separate answer booklet.
3. Marks for each question are indicated in the brackets.
4. Do not write on the question paper

This paper consists of 4 printed pages

**Candidates should check the question paper to ascertain that all pages
are printed as indicated and that no questions are missing**

SECTION A: 40 MARKS

Answer ALL questions in this section.

1. In system analysis and design, systems are conceptual or physical entities that work together towards a common objective. List FOUR characteristics of this system. (4 Marks)
2. The System Development Life Cycle (SDLC) is a process followed by systems engineers and developers to design develop and maintain high-quality software. State FOUR phases of system development life cycle. (4 Marks)
3. In system analysis and design, various project design techniques are employed to plan, structure and implement efficient and effective systems. State FOUR project design techniques that can be used. (4 Marks)
4. Designing a system for a large manufacturing company requires careful consideration of various factors. Mention FOUR of those factors. (4 Marks)
5. Data flow diagram has the purpose of clarifying the system requirements. Identify TWO components of this diagram (2 Marks)
6. You have been approached by a software company to develop for them a system to aid in their customer service management. Enumerate FOUR adaptive methodologies to consider. (4 Marks)
7. Software development is guided by several key principles that help ensure the creation of high-quality, efficient and maintainable software systems. Outline FOUR software principles a system developer should observe. (4 Marks)
8. After developing a new system and obtaining user acceptance, list FOUR steps to follow before installing it for use. (4 Marks)
9. Joint Application Development (JAD) is a methodology used in the software development process to gather requirements in a more collaborative and accelerated manner. In view of this, state FOUR advantages of this methodology. (4 Marks)
10. The Rapid Application Development (RAD) methodology is an approach that prioritizes rapid prototyping and iterative development to deliver high-quality systems quickly. State TWO advantages of this methodology. (2 Marks)
11. Describe two contrasts between *parallel* change over and *phased* change over transitions. (4 Marks)

SECTION B: 60 MARKS

Answer any THREE questions in this section.

12.

- a) Hekima Ltd is a travel company, it has experiences lately a huge number of customers and consequently they have decided to migrate from the manual system of booking to a computerize system. They have consulted you as a system analyst to assist the move from manual to computerize system. With the aid of a diagram, Illustrate and explain FOUR data flow diagram tools one would use to represent the new system. (12 Marks)
- b) Employees undergo a lot of stress and resistance when a new system is introduced. Outline FOUR ways that the managers can use to ensure a smooth system changeover with minimal resistance. (8 Marks)

13.

- a) In the recent years cyber-crime has been increasing and causing a lot of data loss to organisations. Describe SIX systems design security and control measures that a company can use to protect their data. (12 Marks)
- b) XY is a limited company which has been launched recently in East Africa dealing with software production. They have consulted you as a system analyst expert to advise them on the kind of personnel to hire. Justify FOUR personnel you would advise them to consider. (8 Marks)

14.

- a) Rhoda has been tasked with doing system analysis for the newly acquired HR system. Describe the FIVE key steps she will have to carry out during the analysis stage. (10 Marks)
- b) System analysts use various tools and techniques to document the existing system during the system analysis phase. This documentation is essential for understanding the current system's processes, components, and data flows. Explain FIVE tools the system analyst will use to document the existing system. (10 Marks)

15.

- a) Africa united commercial company has recently acquired a new information system to aid them in their transactions processing. Explain FIVE reasons that may have influenced the company to purchase the information system. (10 Marks)
- b) Zenda limited want to purchase a new information system. As the system analyst outline FIVE types of testing that will be used to check whether the information system is fit for the purpose. (10 Marks)

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