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TEVETA
Technical Education, Vocational and Entrepreneurship Training Authority

CERTIFICATE IN ADVANCED COMPUTER STUDIES

LEVEL 5 EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATIONS

SITTING: NOVEMBER/DECEMBER 2025

SUBJECT: SYSTEM ANALYSIS AND DESIGN I

TIME: THREE (3) HOURS **TOTAL MARKS 100**

PASS MARK: 50

INSTRUCTIONS TO THE CANDIDATE

1. Write your examination number and National Registration Card number on the answer Booklet provided. Ensure to append your signature in the space provided on the answer booklet.
2. Write your answer SCRIPT SERIAL NUMBER on the examination register provided and the entry slip.
3. There are Seven (7) questions in this paper.
4. Question One (1) is Compulsory.
5. Answer any other Four (4) questions of your choice from the remaining.
6. Cell phones and programmable calculators are NOT allowed in the examination room.

DO NOT TURN THIS PAPER UNTIL YOU ARE TOLD TO DO SO

QUESTION 1 - COMPULSORY

a) Define Systems Development Life Cycle (SDLC) (2 marks)

b) During Systems Development Life Cycle (SDLC), numerous activities take place at different stages.

Describe the activities that take place at the following stages:

i) Preliminary Investigation. (4 marks)

ii) Determination of System Requirements. (4 marks)

c) Explain **five (5)** stages of a Waterfall methodology. (10 marks)

Total (20 marks)

QUESTION 2

a) State **two (2)** examples of Open and **one (1)** example of Closed Information Systems. (6 marks)

b) Explain the following types of computer-based information systems

i) Transaction Processing Systems (TPS) (2 marks)

ii) Management Information System (MIS) (2 marks)

iii) Executive Support System (ESS) (2 marks)

c) Distinguish between the following terms used in General Systems Theory (GST).

i) Physical and Abstract Systems (4 marks)

ii) Deterministic and Probabilistic Systems (4 marks)

Total (20 marks)

QUESTION 3

a) State **Two (2)** skills of a programmer. (4 marks)

b) Describe **Three (3)** characteristics of a good information system. (6 marks)

c) Distinguish between system analysis and system design (4 marks)

d) Explain **three (3)** roles of a system analyst. (6 marks)

Total (20 marks)

QUESTION 4

You have recently joined a consulting firm that specializes in advising organizations on IT and systems development projects. During a team meeting, your supervisor presents the case of a client—a mid-sized company—that is considering launching several new information systems projects. The client is unsure about whether to proceed and has asked for guidance on the implementation of information systems projects.

a) State **Two (2)** fact finding techniques during system development. (4 marks)

b) Explain **Five (5)** reasons for initiating information systems projects. (10 marks)

c) Describe **two (2)** changeover methods during system implementation. (6 marks)

Total (20 marks)

QUESTION 5

a) Define an Information System. (2 marks)

b) Describe **three (3)** types of Information Systems. (6 marks)

c) Explain the following concepts

i) Garbage In Garbage Out. (4 marks)

ii) Cost-benefit analysis. (4 marks)

iii) System proposal. (4 marks)

Total (20 marks)

QUESTION 6

a) State **two (2)** components of a decision tree (4 marks)

b) With the aid of a diagram, explain the following requirements analysis techniques.

i) Data Flow Diagrams (4 marks)

ii) Data dictionary (4 marks)

iii) Decision tables (4 marks)

c) Distinguish between passive and active Data Dictionaries. (4 marks)

Total (20 marks)

QUESTION 7

a) Define a standard. (2 marks)

b) State **four (4)** reasons standards are important. (8 marks)

c) Controls in an information system guarantees system's reliability.

State **two (2)** objectives of controls that an analyst should endeavours to achieve.

(4 marks)

d) Explain **three (3)** personnel controls. (6 marks)

Total (20 marks)