

061005T4ICT

ICT TECHNICIAN LEVEL 5

IT/OS/ICT/CR/6/5

MANAGE DATABASE SYSTEM

July/Aug 2023



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

WRITTEN ASSESSMENT

Time: 3 Hours

INSTRUCTIONS TO CANDIDATES

1. This paper has THREE sections **A**, **B** and **C**.
2. You are provided with a separate answer booklet.
3. Marks for each question are as indicated.
4. Do not write on the question paper.

This paper consists of 8 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 (20 MARKS)

Answer all questions in this section.

Each question carries 1 mark.

1. Which statement below correctly defines a database
 - A. A collections of data
 - B. A collection of data stored in a structured format
 - C. A software used to store data
 - D. A system software used to search and store data
2. The following is a list of database models except
 - A. Sequential
 - B. Network
 - C. Relational
 - D. Hierarchical
3. Identify the statement that correctly describes referential integrity in a database relation
 - A. The ability of database to refer to external data source
 - B. The ability to ensure data consistency and maintain relationships between table
 - C. The ability of the database to be secure and available for data
 - D. The ability at query data from respective tables simultaneously.
4. Carrying out database auditing is necessary because?
 - A. It helps perform regular data back up from the database
 - B. It aids in implementing organization policies
 - C. It secures physical database servers
 - D. It helps to monitor and record database activities for security and compliance.
5. The process of removing redundancy from a database is called
 - A. Normalization
 - B. Compilation
 - C. Modelling
 - D. Macros
6. Which of the following object is used to store and organize data in a structured format
 - A. Table
 - B. View
 - C. Index
 - D. Trigger

7. A software which provides a platform for other software's to run on is known as _____
- A. Application software;
 - B. System software;
 - C. Utility software;
 - D. Firmware.
8. _____ is a database object used to enforced referential integrity between related tables.
- A. View
 - B. tired procedure
 - C. Index
 - D. Trigger
9. State the key benefit of implementing software configuration
- A. Increase software development time
 - B. Enhance software security
 - C. Reduce software functionality
 - D. Limit software scalability.
10. A database model that represents data as a collection of objects, each with its own properties and behaviors is
- A. Object-oriented model
 - B. Relational model
 - C. Hierarchical model
 - D. Network model
11. The primary objective of database testing is to _____.
- A. Ensure data availability
 - B. Ensure data security
 - C. Ensure data integrity
 - D. Ensure data accuracy
12. Highlight the correct list of data types in MS Access
- A. OLE, Text, Autonumber.
 - B. Memo, Sring, Currency
 - C. Hyperlink, Number, lookup wizard
 - D. Lookup, Text, OLE

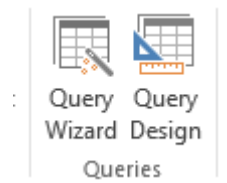
13. Which of the following is NOT a step in the database design process
- A. Conceptual design
 - B. Logical design
 - C. Physical design
 - D. Implementation
14. What database operation is used to add new records on a table
- A. Insert
 - B. Update
 - C. Select
 - D. Delete
15. In a one-to-many relationship, where should the foreign key be placed
- A. In the table that has the "one" side of the relationship
 - B. In the table that has the "many" side of the relationship
 - C. In a separate junction table
 - D. In both tables, as a composite key
16. _____ is a database operation that is used to retrieve specific records from a table based on certain conditions
- A. Insert
 - B. Update
 - C. Select
 - D. Delete
17. Which of the following is not a type of MS access data object?
- A. Table
 - B. Form
 - C. Modules
 - D. worksheet
18. How can you define a field so that when you are entering data ##### is displayed
- A. Validation rule
 - B. Input mask
 - C. Indexed
 - D. IME mode

19. A database operation used to change the structure of a table, such as adding or removing columns
- A. Alter
 - B. Rename
 - C. Truncate
 - D. Drop
20. Which design phase involves determining the storage structures, indexing, and access methods?
- A. Conceptual design
 - B. Logical design
 - C. Physical design
 - D. Implementation

SECTION B (40 MARKS)

Answer *all* questions in this section.

21. A database has many components, Describe any TWO such components. (4 Marks)
22. John, an ICT student studying database MS access wanted to enter data in MS Access database. Outline THREE ways he may achieve his goal. (3 Marks)
23. Using MS Access query language, describe how a multi-join query can be achieved. (4 Marks)
24. The figure below shows icons found on the standard toolbar of a MS Access Describe the functions of the two icons shown' (4 Marks)



25. Distinguish between *schema* and *instances* as used in database management system. (4 Marks)
26. Outline THREE benefits of macros in a MS Access. (3 Marks)
27. Differentiate between bound and unbound controls as used in Microsoft Access. (4 Marks)
28. Khainga, a database designer opted to use conceptual modeling to design a database. Highlight FOUR advantages of this model (4 Marks)
29. John has been advised to use database management system to store students' Marks. State FOUR disadvantages of a database management system. (4 Marks)
30. Differentiate between attribute and entity as used in database management system. (4 Marks)
31. Explain the term data replication as used in database. (2 Marks)

SECTION C (40 MARKS)

Answer TWO questions in this section.

32.

- a) A company in Nairobi has opted to use database in managing their data. Explain THREE benefits the database system would serve to the company. (6 Marks)
- b) Vilani was planning to acquire a database management system for his company. Describe FOUR factors he should consider before doing the purchase. (8 Marks)
- c) Describe THREE forms of normalization in a database. (6 Marks)

33.

- a) Koech, a database administrator, realized that their company database experienced a system failure.
 - i. Describe TWO data recovery techniques the company used to recover their data (4 Marks)
 - ii. During the recovery process they experienced *logical* and *system* error. Differentiate between the TWO types of errors (4 Marks)
- b) Database design is a crucial step in building a robust and efficient database system. Explain THREE types of database design
 - i. Conceptual design (3 Marks)
 - ii. Logical design (3 Marks)
 - iii. Physical design (3 Marks)
- c) Differentiate between a field and a record as used in database. (4 marks)

34.

- a) Action Queries in MS Access perform actions on the records specified by criteria when the query is run. Explain the action of the following action queries
 - i. Update. (2 Marks)
 - ii. Delete. (2 Marks)
 - iii. Append. (2 Marks)
- b) Describe the process of creating a query in Ms Access 2013 (10 marks)

- c) The figure below shows a join property dialog box. Use it to answer questions that follow



- i. Describe what a join is in Ms Access. (2 Marks)
- ii. Explain join 1 as shown in the figure above. (2 Marks)

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