

061005T4ICT

ICT TECHNICIAN LEVEL 5

MANAGE DATABASE SYSTEMS (MS ACCESS)

IT/OS/ICT/CR/4/5

Nov. /Dec. 2022



THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

3 Hours

INSTRUCTIONS TO CANDIDATES

Maximum marks for each question are indicated in brackets ().

*This paper consists of **THREE** sections: A, B and C.*

Answer questions as per instructions in each section.

You are provided with a separate answer booklet.

Answer all questions in English.

This paper consists of NINE (9) 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 [20 MARKS]

Answer all the questions in this section

1. Which one of the following MS Access database objects produces the final result to present?
(1 Mark)
 - A. Forms
 - B. Reports
 - C. Queries
 - D. Tables

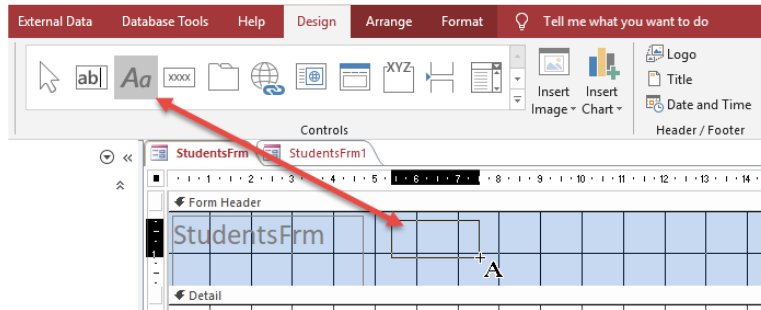
2. When the values in one or more attributes being used as a foreign key must exist in another table, we have created a (n)...
(1 Mark)
 - A. Transitive dependency
 - B. Insertion anomaly
 - C. Referential integrity
 - D. Normal form

3. Microsoft Access is _____.
(1 Mark)
 - A. A Network Database Model
 - B. A Relational Database Management System
 - C. An Object-Oriented Database Management System
 - D. An Object Relational Database Management System

4. Which of the following creates a drop down list of values to choose from in Microsoft Access?
(1 Mark)
 - A. Hyperlink
 - B. List box
 - C. Lookup Wizard
 - D. OLE object

5. From the list below, select an option that allows one to build a new table by entering data directly into a tabular grid. (1 Mark)
- A. Design view
 - B. Datasheet View
 - C. Table View
 - D. Grid View
6. _____ refers to a data field in a form layout grid that is used to display data from the underlying table query. (1 Mark)
- A. Link control
 - B. Bound control
 - C. Unbound control
 - D. Macro control
7. Which of the following lists the correct order of storage sizes? (1 Mark)
- A. Characters, Fields, Records, Tables, Files, Databases
 - B. Characters, Fields, Records, Tables, Database, Files
 - C. Databases, Tables, Files, Records, Field, Character
 - D. Files, Databases, Tables, Records, Fields, Characters
8. Which data type allows alphanumeric characters and special symbols to be input in MS Access? (1 Mark)
- A. Memo
 - B. Text
 - C. Char
 - D. Input mask.

9. In MS Access, what is the name of the icon pointed to by the arrow in the diagram below? (1 Mark)



- A. Text Box
B. Label
C. Button
D. Select
10. Which one of these is the most common type of query that retrieves records from one or more tables and then displays the result in tabular form? (1 Mark)
- A. Tabular Query
B. Crosstab Query
C. Select Query
D. Pivot Query
11. When creating a database in MS Access, what is the default name of a new database in the project called? (1 Mark)
- A. Database1
B. Module 1
C. New Database
D. Project 1
12. A collection of related files is called a _____. (1 Mark)
- A. Table
B. Record
C. Form
D. Database

13. Microsoft Access 2016 uses a _____ as a data entry interface. (1 Mark)
- A. Form
 - B. Report
 - C. Wizard
 - D. Query
14. What is the name of the key that uniquely identifies each record? (1 Mark)
- A. Registration key
 - B. Composite key
 - C. Foreign key
 - D. Primary key.
15. Which among the following data types would be the best when used to store transaction involving money in MS Access? (1 Mark)
- A. Number.
 - B. Currency
 - C. Large Number
 - D. AutoNumber
16. _____ is used to search and analyse data in a Microsoft Access table. (1 Mark)
- A. Action query
 - B. Macro.
 - C. Append query
 - D. Select query
17. What is the name given to the process of classifying the data in an order in a database? (1 Mark)
- A. Ordering
 - B. Search
 - C. Sorting
 - D. Ascendant

18. The _____ is a wild card that represents one or more characters. (1 Mark)
- A. Question mark
 - B. Asterisk
 - C. Exclamation mark
 - D. Dollar sign.
19. Another name for a row in a relational database table is a _____. (1 Mark)
- A. Tuple
 - B. Domain.
 - C. Degree.
 - D. Cardinality
20. Which among the following is not an operation on a database that is mostly abbreviated as CRUD? (1 Mark)
- A. CREATE
 - B. DATA
 - C. UPDATE
 - D. DELETE

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SECTION B (40 MARKS)

Answer all the questions in this section

21. Name two types of relationships that can be applied in database design. (2 Marks)
22. Describe **four** functions of a Database Management System Software (DBMS). (4 Marks)
23. Differentiate between the following pair of terms as used in database design:
- (a) Input mask and validation rule (2 Marks)
 - (b) Print Preview and Layout Preview (2 Marks)
24. Sabina created a form in MS Access using the form wizard tool. Describe any **two** form layouts that she could have used. (4 Marks)
25. Kelvin has been hired as a database administrator in a company. He is supposed to ensure that the company's MS Access database is secured properly. Explain two security tools that he is likely to employ. (4 Marks)
26. Explain each of the following types of joins used in relationships in MS Access:
- (a) Inner joins; (2 Marks)
 - (b) Outer joins. (2 Marks)
27. Distinguish between an **entity** and an **attribute** in relation to database. (2 Marks)
28. Describe two types of database models. (4 Marks)
29. Samson created a report using design view. Describe any **two** sections of the report where he could have added controls. (4 Marks)

30. Tables 1 and 2 below shows data stored by the human resource officer of a company. Use it to answer the questions that follow.

Employee's Details Table

Surname
Middle name
First name
PF number
Department

Table 1

Employee's Income Table

Date
Salary
Pay slip number

Table 2

- (a) State the primary key field for each table (2 Marks)
- (b) Write a statement entered in the calculated column of a query used to calculate the employee's total income for 12 months. (2 Marks)

31. Using MS Access:

- (a) Write down the criteria you would use to display employees' details from a payroll database who earn between 90,000 and 240,000. (2 Marks)
- (b) Explain how you would set a validation rule when designing tables. (2 Marks)

SECTION C (40 MARKS)

Answer TWO questions in this section

32. (a) A Database Management System (DBMS) is made up of several components that work harmoniously to ensure that the needs of the user are met. Discuss any **five** components of a DBMS. (10 Marks)

(b) Kamau has been hired by Data Systems Limited as a database administrator.

Formulate **five** roles that Kamau would play in the company. (10 Marks)

33. (a) The following car details are to be entered in a database: Make, date of manufacture, colour and cost.

(i) Prepare a suitable database structure showing field names and their field types. (5 Marks)

(i) Explain how you index the data such that cars of the same make and colours are together. (2 Marks)

(ii) Write statements that can be used to select cars of the colour green whose value is greater than Ksh. 500,000. (3 Marks)

(b) Salim intends to perform tests on the data in his MS Access database system. Explain any **three** types of database tests that he can perform. (6 Marks)

(c) Juma works for a data company that has been keeping their files using physical files. The company intends to switch to using a database management system such as MS Access to keep their data. Explain **two** benefits the company may realise from implementing the new system. (4 Marks)

34. (a) Kivu Ltd. intends to introduce Microsoft Access as their preferred Database Management System (DBMS).

(i) Justify why this system should be introduced. (10 Marks)

(ii) Discuss five disadvantages of using database management systems in an organisation. (5 Marks)

(b) Discuss the five steps of creating a dataset in MS Access. (5 Marks)

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