061005T4ICT
ICT TECHNICIAN LEVEL 5
MANAGE DATABASE SYSTEMS
IT/0S/ICT/CR/4/5
Mar./Apr. 2023
Time: 3 Hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

3 Hours

INSTRUCTIONS TO CANDIDATE

Maximum marks for each question are 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.

Candidate should answer the questions in English.

This paper consists of EIGHT (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** the questions in this section.*

1. _____ is an attribute that uniquely identifies an entity in a relational database system.

   (1 mark)

   A. Unique key

   B. Primary key

   C. Foreign key

   D. Null key

2. Which of the following is not an output of the query h??d?   (1 mark)

   A. head

   B. heed

   C. Heard

   D. Hoed

3. Another name for a row in a relational database table is a _____.   (1 mark)

   A. Tuple

   B. Domain.

   C. Degree.

   D. Cardinality

4. Which command activates the current query when executed?   (1 mark)

   A. Show table

   B. List box

   C. Cross tab

   D. Run.

5. A data type used when inserting images into a table is a _____.   (1 mark)

   A. OLE

   B. Memo

   C. Picture

   D. Look up

6. _____ is not a source of data for a report. (1 mark)

    A. Form.

    B. Table.

    C. View.

    D. Query.

7. "…"at the end of a field property box represents _____. (1 mark)

    A. Make button.

    B. Continuation.

    C. Expression builder.

    D. Open button.

8. _____ is **not** a property of number data type. (1 mark)

    A. Allow zero length.

    B. Format

    C. Caption.

    D. Input mask.

9. A _____ view allows addition of controls to a form. (1 mark)

    A. Datasheet.

    B. Form.

    C. Design.

    D. Wizard.

10. Which of the relationships cannot be implemented by a relational DBMS? (1 mark)

    A. one to many.

    B. many to many

    C. many to one.

    D. one to one.

11. In MS Access, the maximum length of characters for a text data type is _____.

(1 mark)

    A. 64

    B. 256

    C. 128

    D. 255

Turnover

12. A collection of related files is called a _____.   (1 mark)

    A. Database

    B. Table

    C. Record

    D. Form

13. Microsoft Access 2007 saves files using _____ file extension.   (1 mark)

    A. .mdb

    B. .xlsx

    C. .accdb

    D. ,docx

14. A primary key included in another table is referred to as a_____ key.   (1 mark)

    A. Foreign

    B. Super

    C. Candidate.

    D. Source.

15. A data type that stores logical value in MS Access is a _____.   (1 mark)

    A. True/False.

    B. OR

    C. Yes/No

    D. On/ Off.

16. A _____ is used to add logic to a database and automate repetitive tasks to create a more usable interface.   (1 mark)

    A. Macro.

    B. Module.

    C. Query.

    D. Form.

17. Which of the following is **not** a characteristic of a primary key?   (1 mark)

    A. Unique

    B. Not null.

    C. Required.

    D. Redundant.

18. The following are parts of a query-design window except _____. (1 mark)

    A. Data type.

    B. Field

    C. Condition.

    D. Table.

19. An operator that returns records if only one of two or more given conditions is true is called a _____. (1 mark)

    A. OR.

    B. NOT

    C. XOR.

    D. NAND.

20. Which one of the following is **not** a database operation? (1 mark)

    A. Insert.

    B. Transform.

    C. Update.

    D. Select.

Turnover

Section B (40 marks)

*Answer **ALL** the questions in this section.*

21. Define the term index as used in databases. (2 marks)

22. Outline **four** functions of a Database Management System Software (DBMS). (4 marks)

23. Duke uses a hierarchical model for data storage. Explain **two** challenges he is likely to encounter with this database. (4 marks)

24. Mary created a form for her database. Outline **four** uses of this form. (4 marks)

25. Andrew has been hired as a database administrator in a company. Explain **five** roles he is likely to play. (5 marks)

26. Explain each of the following types of queries:

    a) Update (2 marks)

    b) Append. (2 marks)

27. Distinguish between *bound* and *unbound* controls in a database form. (2 marks)

28. Describe **two** components of a database system. (4 marks)

29. James created a report using design view. Describe **two** sections of the report where he could have added controls. (4 marks)

30. Table 1 shows data stored by a car selling company. Use it to answer the questions that follow:

Car Number	Make	Colour
N1023	Mitsubishi	White
S1091	Isuzu	Green
S1200	Pickup	Yellow
M1001	Mercedes	White

Table 1

    (a) Write a statement entered in the criteria row of a query used to select all white cars. (2 marks)

    (b) Write a statement entered in the criteria row of a query used to select all cars whose make start with letter 'm'. (2 marks)

31. Classify each of the following DBMS software as either server or desktop software.

    MS Access, Paradox, Wamp, MySQL, FoxPro, Oracle (3 marks)

Section C (40 marks)

*Answer **any TWO** questions in this section*

32. (a) Explain the function of a sub form in a database system. (4 marks)

    (b) Differentiate between an atomic and a multivalued attribute. (4 marks)

    (c) Janet created a one to many relationships between two tables. Describe **three** constraints she could have enforced to ensure consistency of data. (6 marks)

    (d) You have been contracted to create a library system for a certain college. In this system, a student is identified by a Student number and name. A student can borrow a maximum of three books. Each book is identified by an ISBN and BookName. Many students can borrow many books. Every borrow transaction is recorded using StudentNo, Date Borrowed and Return date. Identify the entities in this system and the respective attributes. (6 marks)

33. a) David intends to design a database system. Describe **three** models he is likely to design. (6 marks)

    b) A student intends to implement table 1 using MS Access.

SNo	Name	Gender	Age	Salary
S001	Mark Spencer	Male	36	20,000
S003	Diana Ross	Female	43	24,000
S004	Rose Janet	Female	28	18,000
S008	Dave Harry	Male	25	12,000
S009	Nelly Woods	Female	37	15,000

Table 1

    i) Identify the most appropriate data type for each attribute. (5 marks)

    ii) Name the most appropriate attribute for a primary key. (1 mark)

    c) FunTech company is replacing an existing file-based system with a database system.

    i) Explain **two** demerits of the current system; (4 marks)

    ii) Explain **two** benefits the company may accrue for implementing the new system. (4 marks)

34 (a) Joel printed a report in Microsoft Access to present to the management of a certain
        company.

   i)   Describe **two** methods he is likely to use.   (4 marks)

   ii) Describe **two** ways of arranging this data.   (4 marks)

   iii) Explain the presence of null values in this report.   (2 marks)

   (b) Table 2 shows sample field properties. Use it to answer the question that follows.

General	Lookup
Field Size	255
Format	
Input Mask	
Caption	
Default Value	

Table 2

Outline the meaning of each of the field properties given citing an example in each case.

                                                                        (10 marks)

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