

061005T4ICT

ICT TECHNICIAN LEVEL 5

Manage Database System

IT/0S/ICT/CR/04/5/A

IT/0S/ICT/CR/04/5/B

July/August 2025

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

WRITTEN ASSESSMENT

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Time: 3 HOURS

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INSTRUCTIONS TO CANDIDATE

1. The paper of **TWO** sections: **A** and **B**

2. Answer all questions in section A and ANY THREE (3) questions in section B.

3. Marks for each question are indicated in the brackets

4. Candidates are provided with a separate answer booklet.

5. **DO NOT** write on the question paper.

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SECTION A (40 MARKS)

1. During a practical lesson, using Ms Access, Outline THREE properties that a field used as a Primary Key of a table should satisfy. (3 marks)
2. A data entry clerk entered data in a database and wrote statements that changed the state of the database. Highlight FOUR such operations. (4 marks)
3. A database system provides the user with several data security tools in enforcing database security. Highlight FOUR ways in which database security can be enforced against unauthorized access. (4 marks)
4. Entity relationship diagrams are vital to modeling a system. Distinguish between the entity relationship diagrams in Fig 1 and in Fig 2 below. (4 marks)

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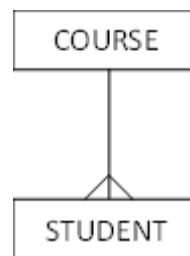


Fig 1

Fig 2

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5. In a database, tables are connected to one another through defined relationships. Outline THREE types of relationships that are used to link tables within a database. (3 marks)

6. To maintain consistency of data within database, integrity constraints need to be imposed. List THREE types of data integrity constraints within a database. (3 marks)

7. During a practical lesson, a student was tasked to create a database that could store registration details of candidates during an assessment. Outline the first FOUR steps to be

followed when creating a database in MS Access.

8. With the aid of a sketch, distinguish between a composite attribute and a multivalued attribute diagrams. (4 marks)

9. The table below was created by an ICT student during a practical session. State the appropriate data type for each attribute. (4 marks)

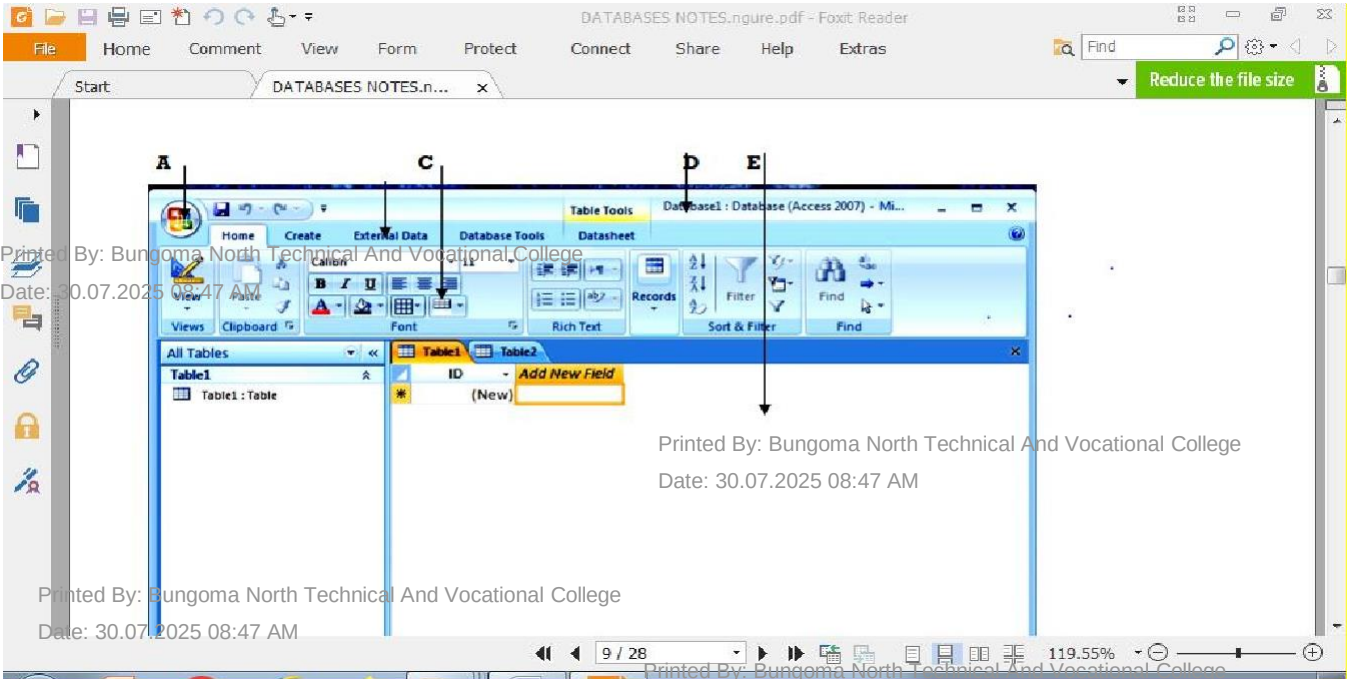
Adm.No	Name	Gender	Age
--------	------	--------	-----

S001	Martin	Male	26
S003	Dorothy	Female	23
S004	Te	Female	28
S008	Harrison	Male	25
S009	Mildred	Female	31

Table 1
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10. When entering data in table in data sheet view, you realize that the third field is not needed. Outline THREE steps you will follow to remove proceeding with the data entry
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11. The following is an interface of an MS Access window. Name the labeled parts.(4 marks)



SECTION B (60 Marks)

12. The figure below shows an Ms Access form interface. Use it to answer questions that follow.

The figure below shows a form designer for a table called **STUDENT DETAILS**. The form layout includes the following sections and controls:

- Form Header:** Contains the title "Student Details" and a date/time control with expressions `=Date()` and `=Time()`.
- Page Header:** Contains the text "Welcome to Tumutumu Girls High School".
- Detail:** Contains six text boxes for data entry: "AdmNo", "Student Name", "Class", "Stream", "Hostel", and "Address".
- Page Footer:** Contains a page number control with expression `= "Page " & [Page]` and a date/time control with expression `= Now()`.

- a. Describe FIVE features indicated on the form layout

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(10 marks)

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- b. Explain THREE advantages of adding graphics to

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(6 marks)

- c. Explain TWO categories of controls that can be placed on the form layout.

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(4 marks)

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13. A student must be enrolled on only one course and a course must have students enrolled on it. Each course is identified by a deptId, courseId and course name. Each course must have a number of modules and a module must be part of at least one course. A module is identified by moduleId, module name and must have a lecturer as a subject leader but a lecturer may not necessarily be a subject leader or may lead more than one module.

- a. Draw an ER diagram showing cardinality and optionality.

(10 marks)

- b. Explain THREE advantages using ER diagram in database modeling (6 marks)
- c. Differentiate between attribute as used in ER diagram (4 marks)

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14. In MS Access queries perform actions on the records specified by criteria when they are run.

- a. Explain FOUR types of action queries as applied in Ms Access. (8 marks)
- b. Explain THREE advantages of using queries in Ms Access database. (6 marks)
- c. A school bursar wanted to display records of students whose fees balance is more than 5000 shillings from a database containing the following student records; Adm.No, Name, Fees balance, Fees table. Write an appropriate query statement that could accomplish the task. (6 marks)

15. A secretary printed a report in Microsoft Access to present to the management of a certain company.

- a. Describe TWO methods she could have used. (4 marks)
- b. Describe THREE ways of arranging this data. (6 marks)
- c. Table shows sample of field properties. Explain the meaning of each of the field properties given citing an example in each case. (10 marks)

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General		Lookup
Field Size	255	
Format		
Input Mask		
Caption		
Default Value		

Table 2

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