

091906T4HRI

HEALTH RECORDS AND INFORMATION TECHNOLOGY LEVEL 6

HE/OS/HR/CR/01/6/A

Manage Health Records Database

March/April 2025



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

WRITTEN ASSESSMENT

Printed By: Amref International Training Center

Time: 3 HOURS AM

INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Answer **ALL** the questions in section **A** and **Any THREE** Questions in **Section B**
4. Candidates are provided with a separate answer booklet
5. **DO NOT** write on this question paper.

This paper consists of FOUR (4) 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 (40 MARKS)

Answer ALL questions from this section.

1. Highlight FIVE reasons why a health facility should use a database management system
(5 Marks)
2. NoSQL databases offer a flexible and scalable approach to data management compared to traditional relational databases. Mention THREE examples of NoSQL databases.
3 Marks)
3. The ACID properties are the foundational principles that govern the reliability of databases. Outline FOUR ACID properties of a database. (4 Marks)
4. Cloud databases are designed to run on the cloud. Enumerate TWO advantages of cloud databases. (2 Marks)
5. Examination of the operational efficiency of hospital database helps address any existing gaps which are essential in auditing. State THREE operational gaps in a hospital database. (3 Marks)
6. Data sharing in a database is a fundamental aspect of modern information management. Highlight THREE advantages of data sharing in a database. (3 Marks)
7. In the realm of database management, ensuring data reliability is paramount. Describe TWO data constraints found in a database. (4 Marks)
8. Differentiate between the DROP and DELETE SQL statements. (4 Marks)
9. Schemas play a fundamental role in organizing and structuring data. State TWO purposes of schemas in a database system. (2 Marks)
10. Normalization is a crucial concept in database management, particularly for health records databases. Define normalization. (1 Marks)
11. Hospital Entity-Relationship (E-R) diagrams serve as visual representations of the relationships among different entities in a system. Enumerate FOUR components of a E-R diagram (4 Marks)
12. Data modeling serves as a fundamental cornerstone in the field of information management. Highlight TWO benefits of data modeling (2 Marks)
13. Data manipulation is imperative for extracting meaningful insights. List THREE data manipulation commands used in a database (3 Marks)

SECTION B: (60 MARKS)

Answer ANY THREE questions in this section

14. Artificial Intelligence (AI) has been instrumental in creation of hospital databases.

- a) Describe FIVE ways in which Artificial Intelligence (AI) has transformed creation of databases in Health care sector. (10 Marks)
- b) Discuss FIVE effects of Artificial Intelligence (AI) in the Kenyan Healthcare Sector. (10 Marks)

15. Structured Query Language (SQL) serves as a fundamental tool in managing and manipulating relational databases.

- a) Explain FIVE SQL commands used in database management system (10 Marks)
- b) Relational databases stand as a cornerstone in modern information management. Discuss FIVE benefits of relational databases. (10 Marks)

16. In the entire process of database design, understanding and defining relationships between entities is fundamental for creating a robust and efficient database structure.

- a. Describe FIVE types of entity relationships (10 Marks)
- b. Explain TWO types of entity sets (4 Marks)
- c. Explain THREE degrees used in a database. (6 Marks)

17. Consider the following two tables: “PATIENT” and “CLINIC”

You are a hospital database administrator and you have been asked to generate a list of those patients who booked special clinic appointments, and the details of their clinics.

Write an SQL statement to create the tables below. (20 Marks)

PATIENT

PATIEN T ID	First Name	Last Name	Email	City
1	Adhiamb	Ayot	adhiamboayot@ken.go.ke	Kisumu
2	o	Munene	mwangimunene@ken.go.ke	Nakuru
3	Mwangi	Kimaiyo	kipkorirkimaiyo@ken.go.ke	Eldoret
4	Kipkorir	Mwanahami	halimamwahamisi@ken.go.ke	Mombasa
5	Halima	si Olerai	lemaiyanolerai@ken.go.ke	Nairobi

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CLINIC

Clinic ID	Clinic date	Amount	Patient ID
1	07/04/1776	Ksh.234	1
2	03/14/1760	Ksh.78	3
3	05/23/1748	Ksh.124	2
4	09/03/1790	Ksh. 65	3

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