



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

INFORMATION TECHNOLOGY

MODULE: Database Concepts (Practical)

PAPER NO: 317/22/M03B

DURATION: 3 Hours

MAY/JUNE 2024 EXAMINATION

REQUIREMENTS

1. Computer with SQL compiler.
2. Printing facility
3. Storage medium for each candidate.
4. Serialised script cover.

INSTRUCTIONS TO CANDIDATE

1. Answer ALL questions
2. Print both code and output
3. Submit both hardcopy and softcopy

This paper consists of 5 printed pages.

PAPER NO: 317/22/M03B – DATABASE CONCEPTS (PRACTICAL)

QUESTION 1

Chawatama School administration has requested that you as the Database administrator design and implement a database that will maintain data of the students enrolled, subjects offered by the school, the teachers in the school and groups each student and teachers belong to. The Logical Design Phase identifies the following tables

Marks

Column name	Data type	Description
StudentId	char(5)	Primary key
SubjectId	char (6)	NOT NULL
DateCaptured	date/time	NOT NULL
Mark	integer	NOT NULL
MarkId	char (5)	

Subjects

Column Name	Datatype	Description
subjectId	char(6)	Primary key
Title	varchar(30)	NOT NULL

Groups

Column Name	Datatype	Description
GroupId	Char(5)	Primary key
Name	Varchar(30)	NOT NULL

Teachers

Column Name	Datatype	Description
TeachersId	Integer(3)	Primary key
Firstname	Varchaar (30)	NOT NULL
Lastname	Varchar(30)	NOT NULL

Subject Teacher

Column Name	Datatype	Description
SubjectId	Char(6)	Primary key
TeacherId	Integer(3)	NOT NULL
GroupId	Char(5)	NOT NULL

STUDENTS

Column Name	Datatype	Description
studentId	Char(6)	Primary key
Firstname	Varchar(30)	NOT NULL
Lastname	Varchar (30)	NIT NULL
GroupId	Char(5)	NOT NULL

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Using appropriate SQL commands

- (a) Create a database called Registrationdb. (2 marks)
- (b) Create the tables given in the scenario above paying close attention to the data types and descriptions given. (30 marks)
- (c) Change the table name “students” to “Pupils”. (3 marks)
- (d) Remove the column “markId” from the table “marks”. (2 marks)

QUESTION 2

Using appropriate SQL commands:

- (a) Populate the database with the following data

Marks

StudentId	Subject Id	Date	Mark
F 1002	MA222	Today's Date	75
F2005	Ph404	Today's Date	60
F3447	EC300	Today's Date	52
F1003	MA222	Today's Date	83

(4 marks)

Subjects

Subject Id	Title
MA222	Pure mathematics
Ph404	Physics
EC300	Economics

(3 marks)

Pupils

StudentId	Firstname	Lastname	GroupId
F1002	Joyce	Munda	SC100
F2005	Linda	Ruoko	SC100
F3447	Loyce	Mago	CO105
F1003	John	Shuga	SC100

(4 marks)

Teachers

TeachersId	firstName	Lastname
101	Binga	Godo
102	Zuze	Mhaka

(3 marks)

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Groups

GroupId	Name
SC100	Sciences
CO105	Commercials
Ar405	Arts

(3 marks)

Subject Teacher

SubjectId	TeacherId	GroupId
MA222	101	SC100
EC300	102	CO105

(3 marks)

- (b)
- (i) Display the studentId and subjectId for all students taking “MA222” as a subject. (3 marks)
 - (ii) Using the table “Pupils” display studentId, firstname, lastname, groupId in descending order of studentId. (4 marks)
 - (iii) Using the table named “Teachers”, change TeacherId 101’s Lastname to Mbudzi. (4 marks)
 - (iv) Using the table “Subject” display all information of any subject title that starts with the letter “P”. (5 marks)
 - (v) Display the total number of students per subjectId. (5 marks)
 - (vi) Display the studentId, subjectId and mark of students whose marks range from 50 to 70. (4 marks)

QUESTION 3

- (a) Create the following users

Username	password
Senior teacher	flore2020
Headmaster	Dal1010g

(4 marks)

- (b) (i) Write an SQL command that gives the user named Senior Teacher the permissions to SELECT and UPDATE the mark column on the table "Marks". (5 marks)
- (ii) Write an SQL command that allows the user named headmaster to insert and update all columns and delete data on the table named "teachers" (5 marks)
- (iii) Write an SQL command that disallows the user named SeniorTeacher from updating any column on the table named "marks". (4 marks)

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