



**ZIMBABWE EZEKIEL GUTI UNIVERSITY
COLLEGE FOR LIFELONG LEARNING**

**FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND
FOOD SYSTEMS DEVELOPMENT**

**DEPARTMENT OF INFORMATION SYSTEMS
EXAMINATION PAPER**

COURSE CODE : DIS125
COURSE TITLE : Databases for Business
SPECIAL REQUIREMENTS : None
DURATION : 2 Hours
LEVEL : 1.1
DATE : June 2024

JUN 2024

INSTRUCTIONS TO CANDIDATES:

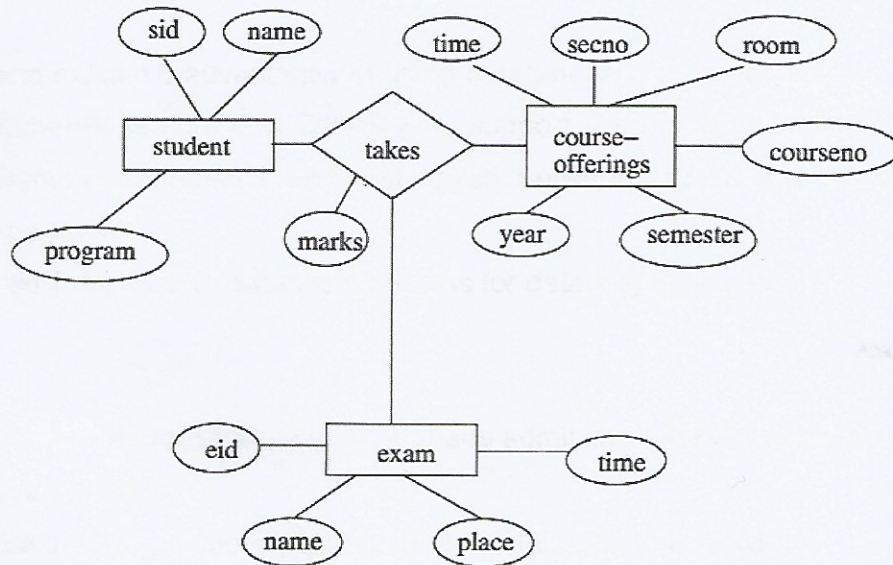
1. This paper consists of 2 sections
2. Answer **ALL** Questions in SECTION A and 3 three in SECTION B
3. Start each Question on a new page

There are 4 printed pages for this question paper

SECTION A

Question 1

Translate the E-R diagram below into sets of relations and specify the primary keys.



[10]

Question 2

a) Differentiate between

- i. Single value and multiple valued attribute.
- ii. Derived and non-derived attributes.
- iii. Candidate and super key.
- iv. Secondary and primary key.

[8]

b) Explain any seven (7) advantages of the database approach to traditional file approach

[14]

Question 3

a) Define the following database concepts:

- i. DBMS.
- ii. Data Independence.

[3]

[3]

b) Give the two major components of SQL and show their purpose.

[2]

SECTION B

Question 4

- a) State and explain 6 advantages of using a database in an organisation [12]
- b) A fundamental feature of a *DBMS* is to support *Data Independence*. Define the term Data Independence and distinguish between logical and physical data Independence [5]
- c) List three limitations of database systems for data management. [3]

Question 5

- a) Describe five responsibilities of a database administrator in a centralized database system. [10]
- b) Describe the two principal integrity rules for the relational model [10]

Question 6

- a) State and explain advantages and disadvantages of the following database models
 - i. Hierarchical
 - ii. Network
 - iii. Relational [14]
- b) Give **THREE** reasons why an organisation might choose not to use a DBMS. [6]

Question 7

- a) Describe the key "ACID" properties of transactions that ensure consistency and reliability in database systems. [10]

- b) One purchasing section of a supermarket deals with fruit, vegetables and flower purchases. The department employs a number of agents in different locations. Each of these agents has contracts with a number of farmers who will supply the produce as required. The supermarket database contains the following relations: - Purchasing-Dept(Produce-type, Address, Email, Phone) Agent(Agent-ref-no, Name, Address, Email, Phone, Produce-type) Farmer(Farmer-Ref-No. Name, Address, Email, Phone, Main-produce, Secondary-produce, Agent-ref-no)

Draw an Entity-Relationship Diagram (ERD) to show the relationship between these three entities. [10]

Question 8

- a) Differentiate between DDL and DML giving one example for each. [5]
b) Explain the stages of the database application life cycle [15]