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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR**  
**SECOND YEAR, .....SEMESTER EXAMINATION**  
**FOR THE DEGREE OF BACHELOR OF BUSINESS**  
**INFORMATION TECHNOLOGY**

Date: 11<sup>th</sup> April, 2022  
Time: 11.30pm –1.30pm

**KBI 2203 - DATABASES**

**INSTRUCTIONS TO CANDIDATES**

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**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE (30 MARKS)**

- a) Define the two "integrity rules" as used in database systems (4 marks)
- b) Retrieve the records from the tables;
  - i) Retrieve the entire contents of the student table. (2 marks)
  - ii) Retrieve the list of names, address, branch, city of all the students. (2 marks)
  - iii) List all the students whose state are Delhi. (2 marks)
- c) Define the following terms:
  - i) Data
  - ii) Information
  - iii) DBMS (6 marks)
- d) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient, a log of the various tests and examinations conducted. (6 marks)
- e) DBMS typically provides a number of services, highlight five of the services. (5 marks)
- f) What's the difference between a primary key and a unique key? (3 marks)

**QUESTION TWO (20 MARKS)**

- a) Discuss the Components of the ER Diagram (6 marks)
- b) Define the term Data Independence and explain the two levels of data independence in databases. (8 marks)

- c) Find out the names, client-no of all the clients. (6 marks)
- Retrieve the entire contents of the CLIENT-MAST table.
  - List all the clients who are located in NEW DELHI.
  - Find the client-no, names, address1, address2 of the client who have bal-due is greater.

### **QUESTION THREE (20 MARKS)**

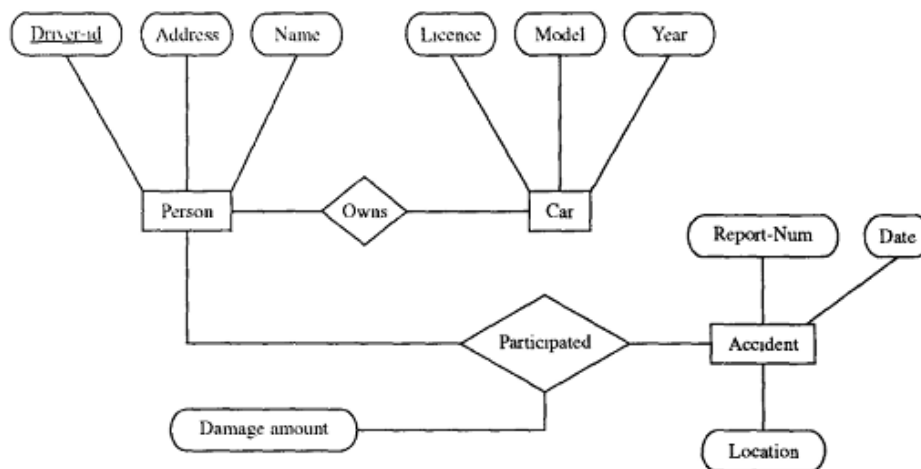
- a) Differentiate between Database system and file system. (12 marks)
- b) Explain the components of Database System. (8 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Describe the three levels of data abstraction? (6 marks)
- b) What are the five properties of the Relational tables? (5 marks)
- c) Explain the Three-Level Database Architecture. (9 marks)

### **QUESTION FIVE (20 MARKS)**

- a) Design a relational database corresponding to E-R diagram given (8 marks)



- b) Discuss the four properties that are called the ACID properties of Transactions. (8 marks)
- c) Define the term Data Model listing three types of models (4 marks)