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**GIET UNIVERSITY, GUNUPUR - 765022**  
 B. C. A (Second Semester) Regular Examinations, August - 2023  
**BCA20202 - Database Management System**

Time: 3 hrs

Maximum: 70 Marks

**The figures in the right hand margin indicate marks.**

**PART – A: (Multiple Choice Questions)****(1 x 10 = 10 Marks)**Q. 1 Answer ALL questions

	CO #	PO #
a. What is a database?	01	01
(i) Organized collection of information that cannot be accessed, updated, and managed		
(ii) Collection of data or information without organizing		
(iii) Organized collection of data or information that can be accessed, updated, and managed		
(iv) Organized collection of data that cannot be updated		
b. Which of the following is not an example of DBMS?	01	01
(i) MySQL		
(ii) Microsoft Access		
(iii) IBM DB2		
(iv) Google		
c. The ability to query data, as well as insert, delete, and alter tuples, is offered by ___	03	01
(i) TCL (Transaction Control Language)		
(ii) DCL (Data Control Language)		
(iii) DDL (Data Definition Language)		
(iv) DML(Data Manipulation Language)		
d. _____ is a set of one or more attributes taken collectively to uniquely identify a record.	02	01
(i) Primary Key		
(ii) Foreign key		
(iii) Super key		
(iv) Candidate key		
e. _____ indicates the maximum number of entities that can be involved in a relationship.	01	01
(i) Greater Entity Count		
(ii) Minimum cardinality		
(iii) Maximum cardinality		
(iv) ERD		
f. What is the function of the following command? Delete from student where name="A";	03	01
(i) Clears entries from relation		
(ii) Deletes relation		
(iii) Deletes particular tuple from relation		
(iv) All of the mentioned		
g. What happens if a piece of data is stored in two places in the database?	01	01
(i) Storage space is wasted & Changing the data in one spot will cause data inconsistency		
(ii) It can be more easily accessed		
(iii) Changing the data in one spot will cause data inconsistency		
(iv) Storage space is wasted		
h. The logical design, and the snapshot of the data at a given instant in time is known as?	01	01
(i) Schema & Instance		
(ii) Relation & Schema		
(iii) Instance & Relation		
(iv) Domain & Schema		
i. Consider money is transferred from (1) account-A to Account-B and (2) Account-B to Account-A. Which of the following form a transaction?	04	01
(i) Only 1		
(ii) Only 2		
(iii) Either 1 or 2		
(iv) Both 1 and 2 individually		
j. The relationship between DEPARTMENT and EMPLOYEE is a	01	01
(i) One-to-one relationship		
(ii) One-to-many relationship		
(iii) Many-to-many relationship		
(iv) Many-to-one relationship		

**PART – B: (Short Answer Questions)****(2 x 10 = 20 Marks)**Q.2. Answer ALL questions

CO #	PO #
1	1
1	2
2	1
2	1
2	1
2	2
3	1
4	2
1	1
3	1

- Define data, information and database .
- Write down the advantages of DBMS.
- Define components of ER model.
- Describe briefly types attributes.
- Write the Codd's rules.
- Differentiate candidate key and super key.
- Describe briefly what are the languages used in SQL.
- Draw the diagrams for transaction states.
- What are the disadvantages of file processing systems?
- What are the Group functions in SQL?

**PART – C: (Long Answer Questions)****(10 x 4 = 40 Marks)**Answer ALL questions

CO #	PO #
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- What is data abstraction? With a neat diagram describe briefly Data independence.
  - Draw ER diagram for hospital management.

(OR)

  - What is data model? With a neat diagram explain 3- tier database schema architecture.
  - Write short notes on following:  
(i) DBA (ii) Entity (iii) Entity set (iv) Relationships
- What is Relational Algebra? Describe the types of operators used in relational algebra?
  - A relation R(A,B,C,D,E) with functional dependencies FD={AB->C, B->D, C->E, D->A}, Find the key from the given Functional dependencies.

(OR)

  - What is Functional dependency? Describe the Armstrong's rules.
  - A relation R (A, B, C, D) with functional dependencies FD={A->B, B->C, C->D}. Decompose R into R1(A, B, C) and R2(C, D). Check whether the decomposition is preserving or not.
- What is transaction? Write a transaction statement to transfer money of 2000/- from account A to account B.
  - Describe the types of locking in transactions?

(OR)

  - Describe briefly ACID property of transaction .
  - Describe the types of Concurrency problem in transaction.
- Write short notes on:  
i) DBMS ii) ER diagram iii) Concurrency Access iv) Database schema
  - Describe what are the types of Functional Dependency. Why we use Normalization?

(OR)

  - Match the table I with II:  

i) Advantages of DBMS	i) Authorized users
ii) Data integrity	ii) Data is accurate and consistent
iii) Data Security	iii) Reducing data redundancy
iv) Backup and Recovery	iv) Restores the database
  - What is Constraints? Discuss what are the types of constrains used in database.

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