Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–I • EXAMINATION – SUMMER • 2015

Subject Code: 610005 Date: 05-05-2015

Subject Name: Database Management System - 1

Time: 10:30 am - 01:00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Define the following in terms of DBMS analogy **07**

1) Redundancy
2) Candidate key
3) Mapping Cardinality
4) Functional Dependency
5) Entity
6) Atomicity
7) Data dictionary

(b) Fill in the blanks. **07**

1) Double lines are used in ER diagram to indicate _____ of an entity set in a relationship set.
2) DBMS stands for _____.
3) A table can have only one _____ key.
4) Relation schema R is in _____ normal form if domains of all attributes of R are atomic.
5) FD of the form A →B is trivial if _____.
6) In E-R Model,_____ is a top down design process.
7) A person having central control of both data and database is called _____ .

Q.2 **(a)** Give architecture specification of various of a database system. **07**

(b) Explain the following related to E-R diagram. **07**

1) Participation constrains
2) Class hierarchies
3) Aggregation

OR

(b) Define DBA? Which works are performed by DBA? **07**

Q.3 **(a)** Distinguish between the DBMS and file processing system. **07**

(b) Draw an Entity-Relationship diagram for keeping track of the sport teams. You should store the matches played, the scores in each match, the players in each match and individual player statistics for each match. Summery statistics should be modeled as derived attribute. **07**

OR

Q.3 **(a)** Explain Third normal form (3NF) with suitable example. **07**

(b) Explain Boyce - code normal form (BCNF) with suitable example. **07**

Q.4 **(a)** What is the need for armstrong rules? Disscuss any seven armstrong rules. **07**

(b) Write a short note on : Multivalued Dependancy with suitable example. **07**

OR

Q.4 **(a)** Describe different types of information stored in data dictionary **07**

	(b)	Explain weak entity set with suitable example	**07**
Q.5	**(a)**	In designing a relational database, Why might we choose a non BCNF design?	**07**
	(b)	Write an algorithm for computing closer of attributes.	**07**

OR

Q.5	**(a)**	List out different types of Attributes and explain each with example.	**07**
	(b)	Define E-R diagram. List and explain different symbols used in E-R notation.	**07**

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