Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–I • EXAMINATION – WINTER • 2015

Subject Code: 610005 **Date: 28-12-2015**

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 Terms:** **(07)**

i)	Database	v)	Redundancy
ii)	Lossless Join	vi)	Unique Key
iii)	Assertion	vii)	Mapping cardinalities
iv)	Aggregation		

(b) Distinguish between data manipulation languages and data definition languages giving suitable examples. **(07)**

Q.2 (a) i) Differentiate between Physical and Logical data Independence. **(04)**

ii) Explain roles of DBA. **(03)**

(b) What is normalization? Explain 1NF, 2NF and 3NF using suitable example **(07)**

OR

(b) Explain in detail the insertion, deletion and update anomalies with the mechanism to remove it using suitable example. **(07)**

Q.3 (a) Explain Specialization and Generalization with suitable example. **(07)**

(b) Construct an E-R diagram for a University Examination System. **(07)**

OR

Q.3 (a) Explain various types of Attributes and Relationships with suitable example. **(07)**

(b) Construct an E-R diagram for a Library Management System. **(07)**

Q.4 (a) Discuss concept of canonical cover. **(05)**

(b) Explain in brief Functional Dependency and Multivalued Dependency. **(05)**

(c) What is Data Model? Explain any one data model. **(04)**

OR

Q.4 (a) Discuss concept of BCNF. **(05)**

(b) Discuss any Seven Armstrong rules. **(05)**

(c) Draw and explain 3-tier architecture of DBMS. **(04)**

Q.5 (a) Explain Terms Super key, Candidate key and Primary keys with example. **(05)**

(b) What is Data Dictionary? Discuss contents of Data dictionary. **(05)**

	(c)	Differentiate between weak and strong entity.	**(04)**

OR

Q.5	**(a)**	Explain in brief various types of integrity and referential constraints.	**(05)**
	(b)	What is DBMS? Discuss advantages of DBMS over File systems.	**(05)**
	(c)	Explain de-normalization with its need.	**(04)**

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