END TERM EXAMINATION

Second Semester

May-June(2014)

Database Management System

Time: 3Hrs **Max. Marks**: 75

Note: Attempt any five questions including Q No. 1 which is compulsory. Select one question from each unit.

Question 1:

Describe any five of the following: (5 x 5 = 25)

(a) Differentiate between strong and weak entity.

(b) Types of relationship in E-R diagram.

(c) ACID properties for a transaction.

(d) Selection and projection operation in relationship algebra.

(e) Deadlock

(f) Normalization

(g) Aggregate functions in SQL.

UNIT I

Question 2:

(a) Explain data independence. What is the difference between logical and physical data independence. (6.5)

(b) Define database management system. What are the advantages of a DBMS? (6)

Question 3:

(a) What are various types of attributes? Explain with an example. Also draw the diagram. (6.5)

(b) What is DDL and DML, explain with an example? (6)

UNIT II

Question 4:

Consider the following table:

STUDENT

Roll No.	Student Name	Shift	Contact No.
1	Vinay	M	9155
2	Rima	E	8734
3	Mini	E	453
4	Avi	M	5677

RESULT

Roll No.	Maths	POM	DE	DS	DBMS
1	56	65	53	55	59
2	72	69	74	77	76
4	83	78	86	88	89

Write queries for the following:

(a) Add result of student Mini assuming your own data. (1.5)

(b) Change the shift of a student '*Avi*' to 'E' and contact No. as 2987. (1.5)

(c) Remove the result of student '*Rima*' (1.5)

(d) Display the result of all students with their roll no., name and shift. (1.5)

(e) Show those students 'name in alphabetical order with their result who scored better marks in DBMS than DS'. (1.5)

(f) List the name of all students who have lowest marks in DBMS. (1.5)

(g) Show the result of '*Vinay*' in all subjects. (1.5)

(h) List the names of all those students who have above the average of marks in Maths. (2)

Question 5:

(a) Describe various integrity constraints which can be implemented on a database. (6.5)

(b) Give purpose,syntax and example of the following: (3 x 2 = 6)

(i) ALTER TABLE
(ii) DROP TABLE
(iii) CREATE VIEW

UNIT III

Question 6:

Consider the following two tables T_1 and T_2, show the result of following operations: (12.5)

Table T_1

P	Q	R
10	a	5
15	b	8
25	a	b

Table T_2

A	B	C
10	b	6
25	c	3
10	a	5

(a) $T_1 \bowtie T_{1\text{-}P} = T_{2A}T_2$
(b) $T_1 \ltimes T_{1\text{-}Q} = T_{2A}T_2$
(c) $T_1 \rtimes T_{1\text{-}R} = T_{2C}T_2$
(d) $T_1 \triangleright T_{1\text{-}R} = T_{2C}T_2$
(e) $T_1 \cup T_2$
(f) $T_1 \cap T_2$

Question 7:

(a) Describe the steps to convert the basis ER model to Relational Database schema.

(b) Describe various joins in relational algebra with example.

UNIT IV

Question 8:

What is concurrency transaction? What are the various techniques to control to problems due to concurrency of transactions? (12.5)

Question 9:

Describe the following terms in database management system.

(a) System Failure (3.5)
(b) Backup (3)
(c) Recovery (3)
(d) Authorization (3)