(Please write your Exam Roll No.) Exam Roll No. 06014922012

END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE 2014

Paper Code: BCA-110 **Subject: Database Management System (2011 Onwards)**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt any five question, including Q.no.1 which is compulsory. Select one question from each Unit.

Q1 Describe any five of the following:- **(5x5=25)**

(a) Differentiate between strong and weak entity.
(b) Types of relationships 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

Q2 (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)**

Q3 (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

Q4 Consider the following tables:-

STUDENT

Rollno	Student Name	Shift	Contact No.
1	Vinay	M	9155
2	Rima	E	8734
3	Mini	E	4523
4	Avi	M	5677

RESULT

Rollno	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 student 'Avi' to 'E' and contact no as 2987. **(1.5)**
(c) Remove the Result of student 'Rima'. **(1.5)**

P.T.O.

(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 names of all those students who have lowest marks in DBMS. **(1.5)**
(g) Show the result of Vinay in all the subjects. **(1.5)**
(h) List the names of all those students who have above the average of marks in Math. **(2)**

Q5 (a) Describe various integrity constraints which can be implemented on a database. **(6.5)**
(b) Give purpose, syntax and example of following:- **(3x2=6)**
(i) ALTER TABLE (ii) DROP TABLE (iii) CREATE VIEW.

Unit-III

Q6 Consider the following two tables T_1 and T_2. Show the result of following operations:-

Table T_1

P	Q	R
10	a	5
15	b	8
25	a	6

Table T_2

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

a. $T_1 \rhd\lhd_{T1.P=T2.A} T_2$ (2)
b. $T_1 \bowtie_{T1.Q=T2.B} T_2$ (2)
c. $T_1 \rightthreetimes_{T1.R=T2.C} T_2$ (2)
d. $T_1 \bowtie_{T1.\ R=T2.C} T_2$ (2.5)
e. $T_1 \cup T_2$ (2)
f. $T_1 \cap T_2$ (2)

Q7 (a) Describe the steps to convert the basis ER model to Relational database schema. **(6.5)**
(b) Describe various joins in relational algebra with example. **(6)**

Unit-IV

Q8 What is Concurrency Transaction? What are the various techniques to control the problems due to concurrency of transaction? **(12.5)**

Q9 Describe the following terms in database management system:-
(a) System Failure. **(3.5)**
(b) Backup. **(3)**
(c) Recovery. **(3)**
(d) Authorization. **(3)**

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BCA III (2011)

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