

END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE-2013

Paper Code: BCA110

Subject: Database Management System
(New)

Time : 3 Hours

Maximum Marks :75

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

- Q1: a. Differentiate between physical and logical data independence. 2.5*10
 b. Define strong and weak entity.
 c. Define primary key and candidate key.
 d. Define entity integrity and referential integrity constraint
 e. Define domain constraint and union compatible.
 f. Define update and insertion anomalies.
 g. Define starvation and time stamp.
 h. Define Schedule and serialisability.
 i. Define binary locking and multiple locking.
 j. Write syntax of UPDATE and INSERT command.

Unit I

- Q2. a. Design and explain the E-R diagram of college database with following consideration also indicate the relationship cardinality. 8
 i. College keeps the track of students, faculties, departments and courses organized by various departments.
 ii. College contains various departments and each department is assigned a unique id and name. Some faculty members are also appointed to each department and one of them acts as head of department.
 iii. A number of courses are conducted by each department and each course is assigned a unique id, name and duration.
 iv. Faculty information contains id, name, address, basic salary and phone. A faculty member is assigned to only one department but can teach various course of other departments
 v. Student's information contains roll number (Unique), name, address, marks and age. A student can opt one course only.
 vi. Guardian information is also kept along with each student, which keeps guardian name, age, address and phone.
 b. Explain sub class, super class, generalization and specialization with example. 4.5
- Q3. a. Discuss three tier architecture of database management system in detail. Explain each term used in the architecture. Write its advantages. 8
 b. What are the drawbacks of file management system explain them? 4.5

Unit II

- Q4. a. Consider the following table
 client(client_no, name, city, pin_code, state, bal_due)
 product(product_no, description, unit, sell_price, cost_price)
 salesman(salesman_no, name, city, pin_code, sal_amt, tgt_to_get, yet_sal)
 Write SQL for each of following:
 i. Create the above tables. 3
 ii. List all sales man who are located in Bombay and have salary equal to 20000. 1
 iii. Change bal_due of client_no C01 to 1000. 1
 iv. Add a column telephone of data type number and size 10 to client 1
 v. Change size of sel_price to (10,2) 1
 vi. Change name of salesman to s_man. 1

P.T.O.

R.R

- b. Explain aggregate functions with example. 4.5
- Q5. a. Explain LIKE, GROUP BY, ORDER BY AND HAVING clause with example. 8
b. Explain numeric functions with example. 4.5

Unit III

- Q6. a. What is normalization? Explain in detail 1NF, 2NF and 3NF with example of each. 8
b. What is functional dependency? Explain trivial and non trivial dependency. 4.5
- ✓ Q7. a. What are basic set operations? Explain with example. 8
b. Write the steps to convert E-R model to Relational model. 4.5

Unit IV

- ✓ Q8. a. What is a transaction? Explain ACID properties. 8
b. What do you mean by concurrent transaction? Explain the problems of concurrent transaction. 4.5
- Q9. a. What is deadlock? Explain the wait - die and wound - wait scheme for deadlock prevention. 8
b. What is locking? Explain 2 - Phase Locking. 4.5
