July 2014

Bachelor of Computer Application (BCA) Examination

IV Semester

Data Base Management System

Time : 3 Hours] [Max. Marks : 50

Note : Attempt all questions, choosing any two parts of each question. Each question carries equal marks.

1. (a) Explain three schema architecture of DBMS in detail.
   (b) What are the responsibilities of Database Administrator (DBA) ?
   (c) Differentiate between Flat file system and Database approach for maintaining the data.
2. (a) Define the following :
   (i) Degree of Relationship
   (ii) Cardinality of Relation
   (iii) Identifying Relationship
   (iv) Multivalued Attribute
   (v) Derived Attribute.
   (b) Differentiate between Strong Entity and Weak Entity with example for each type of entity.
   (c) Consider the following scenario :

A database is to be designed for managing information about routes supported by a bus company. Each route served by the company has a starting place and an ending place, but it can go through several intermediate stops. The company is distributed over several branches. Not all the cities where the buses stop have a branch; however, each branch must be at a city located along the bus routes. There can be mlultiple branches in the same city and also multiple stops in the same city. One bus is assigned to one route by the company; some routes can have multiple buses. Each bus has a driver and an assistant, who are assigned to the bus for the day.

Draw an ER-diagram for the above scenario, stating any assumption you deem necessary.

3. (a) Explain Transaction Control Language (TCL) using suitable example queries.
   (b) What is QBE ? Explain in detail.
   (c) Consider the following Relation Schema. An employee can work in more than one department:
   EMPLOYEE (EJd, E_Name, Salary, Hire_date, Dno)
   DEPARTMENT (D_id, D_Name, Manager_id, Floor_Num)

Write the following queries in SQL :

(i) Print the name of all employees, who work on the 10th floor and earn salary less than Rs. 50,000.

(ii) Give every employee who work in "Toys" department a 10% raise in the salary.

4. (a) What is Normalization ? Write the steps to normalize a relation.

(b) What are triggers ? Explain giving a suitable example with query.

(c) Explain the following with example :
(i) Referential integrity constraint, (ii) Entity integrity constraint.

5. (a) Write any 5 Codd's rule for relational database.

(b) Explain the role of DBA in database security.

(c) Explain the characteristics of RDBMS.

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