

**BACHELOR OF COMPUTER  
APPLICATIONS (BCA) (PRE-REVISED)**

**Term-End Examination**

**CS-06 : DATABASE MANAGEMENT SYSTEMS**

*Time : 3 Hours]*

*Maximum Marks : 75*

**Note:** Question number 1 is compulsory.

Attempt any three questions from the rest.

1. a. Consider the following relations. 10x2=20

SUPPLIER (S#, SName, Status, City)

PARTS (P#, PName, Color, weight, City)

SP (S#, P#, Quantity)

Attempt the following queries in SQL-

- i. Find the name of supplier for city = 'Delhi'
- ii. Find suppliers whose name starts with 'AB'
- iii. Find all parts whose weight is above 10 grams
- iv. Find total number of city of all suppliers.
- v. Find S # of supplier who supplies 'red' part.
- vi. Count number of suppliers who supply red part.

- vii. Sort the supplier table by s name.
- viii. Delete the records in supplier table whose status is "Non- active".
- ix. Add one record in supplier table.
- x. Find name of parts whose colour is red.
- b. Explain with an example the process of conversion of hierarchical structure into Relation.

5

- c. Explain at least five important characteristics of (OODBMS) object oriented. RDBMS. 5

2. a. Assume the following requirements for a bank database: 10

- A large Bank name "KBC" is an international bank with 28 branches overseas and 182 branches in the country in different cities.
- Each branch offers services like banking, loan, Insurance and Trading.
- Customers can select saving / current account with single or joint options.
- Bank offers loan services like car loan, home loan, education loan etc.
- Similarly Bank provides different services in insurance and trading.

- Each branch maintains the account details of customers, keep record of each transaction in each service by the customer to his / her account.
  - All branches have employees like staff, executive and managers.
  - Design an ER diagram indicating entities, attributes with keys and cardinality ratio.
- b. Explain ACID properties of transactions. 5
3. a. Explain the Recovery Process after system failure using checkpoint. 5
- b. How is Knowledge Representation done through Semantic networks? Give an example of Semantic networks. 5
- c. Differentiate between a Database Schema & a Database State. 5
4. a. Write short notes on the following with a suitable example for each: 3
- i Primary key
  - ii Foreign key
  - iii Unique key
  - iv Candidate key
- b. What are the responsibilities of DBA. 4

- c. Explain the three- level architecture of database systems. 3
- 5. a. Explain Two- phase Locking. 3
- b. What is a Deadlock? Illustrate the same using Wait- for Graph. 5
- c. Discuss a 'B- Tree' with the help of an example. Also, mention its Properties. 7

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