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Seat
No.

[4968]-2002

B.C.A. (II-Semester) EXAMINATION, 2016

DATABASE MANAGEMENT SYSTEM

(2013 PATTERN)

Time : 3 Hours   Maximum Marks : 80

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw neat diagram wherever necessary.

1. Attempt any *four* from the following :   [4×4=16]

(*a*) Explain the various advantages disadvantages of DBMS.

(*b*) What is file organization ? Explain the indexed file organization.

(*c*) Explain the normalization process.

(*d*) Define the terms :

(*i*) Attribute

(*ii*) Cardinality

(*iii*) Primary key

(*iv*) Foreign key.

(*e*) What do you mean by data model ? Explain entity relationship data model with example.

2. Attempt any *four* from the following :　　　　　　　　　[4×4=16]

(*a*) What is DDL and DML ? Explain any *one* DDL command with example.

(*b*) What do you mean by Data Model ? Explain network model with example.

(*c*) Explain the following terms :

(*i*) Record

(*ii*) Data dictionary

(*iii*) Explain the overall structure of system.

(*iv*) What is Relational Algebra ? Explain UNION and CARTESIAN PRODUCT operation with example.

3. Attempt any *four* from the following :　　　　　　　　　[4×4=16]

(*a*) What is file ? Explain file structure.

(*b*) What is an attribute ? Explain various types of attribute with example.

(*c*) What do you mean by indexing ? Explain dense indexing.

(*d*) Explain the basic operations of files.

(*e*) Explain the following terms with example :

(*i*) Generalization

(*ii*) Specialization.

4. Attempt the following :　　　　　　　　　　　　　　[16]

Consider the following entities and their relationship.

ALBUM (id, name, category, release-year)

SINGER (sid, name, address)

ALBUM and SINGER are related with many to many relationship. Create a RDB in 3NF and solve the following queries by using SQL (any *five*) :

(a) Insert a row in singer table.

(b) Display all album details of singer 'Himesh Reshmiya'.

(c) Count all the album names released in the year 2010.

(d) Add 'Gender' column to singer table.

(e) Display all albums names from "classical" category.

(f) Change the singer address from 'Delhi' to 'Mumbai'.

5. Attempt the following :   [8×2=16]

(a) An insurance agent sells insurance policies to clients. Policies can be of different types such as Vehicle Insurance, Life Insurance, Accident Insurance etc. The agent collects monthly premiums on the policies in the form of cheques of local bank. Database should provide the various details to the user.

(i) Identify all entities.

(ii) Identify all relations.

(iii) E-R Diagram.

(b) Consider the following relational database :

Customer (cno, cname, city)

Quotation (qno, qdate, description, amt-quoted, cno) customer and quotation are related with one-to-many relationship.

Write relational algebraic expression for the following :

(i) Display customer names having quotation for 'LCD'.

(ii) List all the customer bearing quotation dated '20-May-2010'.

(iii) List all the customers who live in 'M.P.' or 'U.P.'.

(iv) Display customers of amt_quoted as Rs. 15,000.