25/11/19

VCD-   -F.Y.B.Sc.(CS) -SEM I- Database Systems- 75 Marks-2½ HRS.

N.B.   1) All questions are compulsory.
        2) Figures to the right indicate marks.
        3) Illustrations, in-depth answers and diagrams will be appreciated.
        4) Mixing of sub-questions is not allowed.
        5) Assume suitable data if necessary and state it clearly.

Q.1   Attempt All.   [15M]
(a)   Multiple Choice Questions
       1) Weak Entity Sets are represented by_____
       A) double ellipse
       B) dashed ellipse
       C) double rectangle
       D) double diamond

       2) Which of the following is the syntax for views where v is view name ?
       A) Create view v as "query name";
       B) Create "query expression" as view;
       C) Create view v as "query expression";
       D) Create view "query expression";

       3) _____ clause is used to restrict number of records returned by the SELECT
       statement.
       A) RESTRICT
       B) LIMI
       C) REFER
       D) STOP

       4) Architecture of the database can be viewed as_____.
       A) two levels.
       B) four levels.
       C) three levels
       D) one level

       5) Grant and revoke are_____statements.
       A) DDL
       B) DML
       C) DCL
       D) TCL

(b) Fill in the blanks. [use following answer pool to fill the correct answer.]
    [cardinality, column, end users, row ,clients, abs, mod, DDL ,DML]
       1) The number of times an entity of an entity set participates in a relation in
           relationship set is known as_____.
       2) DBMS manages the interaction between_____ and database.
       3) ALTER command is_____.
       4) Tuple is equivalent to_____.

5) _____ function is used to calculate absolute value.

(c) Answer in one line.
 a) Define Super Key.
 b) Describe the use of Physical Level.
 c) Give the command for truncating table.
 d) Define subquery.
 e) Give one example of composite attribute.

Q.2 Attempt the following. (Any THREE) [15 M]

a) What do you mean by Weak Entity Sets? Explain with example.

b) Write short note on Generalization.

c) Construct an E-R diagram for a Hotel management System. Customer books the room. Customer pay amount. Customer uses restaurant for breakfast, lunch and dinner. After checkout, customer leaves the room.
[Assume suitable data and mapping cardinalities exists.]

d) Explain Hierarchical Model in detail.

e) Draw and Explain all notations used in E-R Model.

f) What do you mean by Binary Relationship and Ternary Relationship? Explain with suitable examples.

Q.3 Attempt the following. (Any THREE) [15 M]

a) Explain the concept of Relational Algebra. List all basic operations supported by it. Explain any one operator with query example.

b) What do you mean by Normalization? Explain Third Normal Form.

c) How do you Backup and Restore Database in MySQL?

d) Explain the following with proper example –
  i) IN clause
  ii) BETWEEN clause
  iii) ORDER BY clause

e) Explain all Aggregate Functions used in MySQL.

f) Consider following table. Underline fields are key fields.

  Book(bookid, title, author, publisher, category, price,)
Solve following queries using MySQL–
  i) Create above table with **bookid** as Primary Key.
  ii) Insert one record in it.
  iii) Find out Book titles starts with 'D'.
  iv) Add a column **'Year'** with data type INT in **Book** table.
  v) Find out Books with price in the range of Rs. 500 to Rs. 1000.

Q.4 Attempt the following(Any THREE) [15M]

a) What are Joins? List types of Joins. Explain any one of them.

b) Explain any 5 Math functions used in MySQL with example.

c) What are views? How to create and update views?

d) What do you mean by privileges with respect to databases? How to grant and revoke privileges?

e) Write short note on nested subqueries. Illustrate with example.

f) Consider following tables:

  Supplier(suppno, sname, city)

  Orders(orderno, orderdt, qty,amt,suppno)

Solve following queries using MySQL:

  i) Display details of suppliers who have taken the orders.
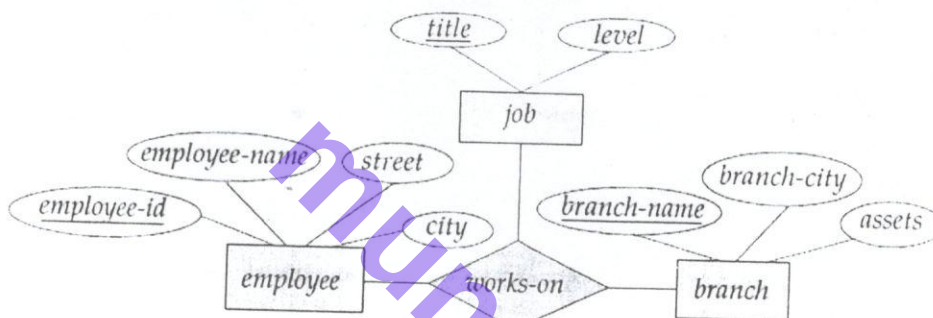
  ii) Create a view showing number of suppliers living in each city.

  iii) Get the details of suppliers who have not taken any order. (Solve with subquery).

Q.5 Attempt the following (Any THREE)   [15 M]

a)Convert below ER diagram into corresponding tables-

b) Explain the following with suitable example
  i) Default constraint
  ii) Check constraint

c) What are the different threats to the databases?

d) How to create and drop a user in MySQL?

e) Explain the role of Data Base Administrator.