

(2 ½ Hours)

[Total Marks: 75]

- 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) The level of data abstraction which describes how the data is actually stored is:
  - A) conceptual level
  - B) physical level
  - C) file level
  - D) none of these
- 2) ..... is called as top-down approach.
  - A) Generalization
  - B) Specialization
  - C) Aggregation
  - D) Synthesization
- 3) 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";
- 4) A record in the table is also known as.....
  - A) column
  - B) tuple
  - C) Field
  - D) data
- 5) ..... is used to find absolute value of a number.
  - A) ABSOLUTE
  - B) ABS
  - C) CEIL
  - D) FLOOR

TURN OVER

**(b) Fill in the blanks. [use following answer pool to fill the correct answer.]**

[three level, column, unique, single, committed, length, DDL, DML]

- 1) Database Architecture\_\_\_\_\_.
- 2) Primary key should be \_\_\_\_\_.
- 3) A transactions completes its execution is called as\_\_\_\_\_.
- 4) \_\_\_\_\_is one of the string handling function in mysql.
- 5) ALTER command is\_\_\_\_\_..

**(c) Answer in one line.**

- a) Define DBMS.
- b) Write syntax for updating a row in a table.
- c) Write syntax of projection operator in Relational Algebra.
- d) Define subquery.
- e) Give one example of derived attribute.

**Q.2 Attempt the following(Any THREE)**

**[15 M]**

- a) What are the disadvantages of file processing system?
- b) Explain Relational model.
- c) What do you mean by Binary Relationship and Ternary Relationship? Explain with suitable examples.
- d) Write a note on Specialization.
- e) Define following terms:
  - i) Value Set
  - ii) Composite Attribute
  - iii) Multivalued Attribute
  - iv) Simple Attribute
  - v) Entity Type
- f) Construct an ER Diagram for Airline Reservation System.  
[Assume suitable data and mapping cardinalities exists.]

**Q.3 Attempt the following(Any THREE)**

**[15 M]**

- a) Explain following operations of Relational Algebra with algebraic query example.
  - i) Projection
  - ii) Join
- b) What do you mean by Functional Dependency?
- c) How do you Backup and Restore Database in MySQL?
- d) Explain Group BY and Having Clause of MySQL with suitable query example.
- e) Explain all Aggregate Functions used in MySQL.
- f) Perform following using mysql.
  - i) Create a table Supplier(suppno,sname,city) with suitable data types.  
"Suppno" columns is primary Key.
  - ii) Insert 2 records.
  - iii) Delete a record who lives in city starts with letter 'M'.

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

- What security mechanism is used to secure database?
- What do you mean by Join? Explain Left outer join and Right outer join with suitable query example.
- What are the different threats to the databases?
- What do you mean by privileges with respect to databases? How to grant and revoke privileges?
- Write short note on correlated subqueries. Give example of it.
- Consider following tables-

Customer(custno,cname,city,creditlimit)Orders(orderno,custno,orderdt,qty,amt)**Customer**

| Custno | Cname    | City     | creditlimit |
|--------|----------|----------|-------------|
| C1     | Harshika | Mumbai   | 50000       |
| C2     | Priya    | Banglore | 60000       |
| C3     | Bhavana  | Delhi    | 70000       |

**Orders**

| Orderno | Custno | Qty | Amt    |
|---------|--------|-----|--------|
| O1      | C1     | 20  | 200000 |
| O2      | C1     | 12  | 500000 |
| O3      | C2     | 7   | 10000  |
| O4      | C3     | 12  | 220000 |
| O5      | C3     | 10  | 40000  |

**Solve following queries and trace the output.–**

- Find out the name of customer who has placed the orders.
- Create a view showing the details of customer living in same city.
- How many orders placed by each customer? (Solve with subquery)

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

- Explain architecture of DBMS.
- Explain 3NF and BCNF.
- What is the use of keyword 'Distinct' and 'all' in MySQL? Explain with query example.
- How to create and drop a user in MySQL?
- What do you mean by views? What are its types?