Duration: 2½ Hrs   ⌐4cs – H219A23DS (10)   **Marks: - 75**

Note: - 1) All questions are Compulsory.
       2) Figures to the right indicate maximum marks.

Q.1. Attempt any 4 of the following: **(20M)**

1) Explain various levels of database abstraction.   CO1(R)

2) Explain Record based and Hierarchical models.   CO1(U)

3) Draw an ER diagram for a hospital.   CO1(U,A)

4) Explain how to convert attribute in ER to relational table.   CO1(U)

5) Explain various DDL statements with example.   CO3(U,A)

6) Explain 'Order by and where clause' with example.   CO1(U,A)

Q.2. Attempt any 4 of the following: **(20M)**

1) What is constraint? Explain Entity Integrity constraints.   CO2(R,U)

2) Explain number functions with examples.   CO3(A,U)

3) What is Cartesian product? Explain.   CO3(U,A)

4) Explain natural join with example.   CO3(U,A)

5) Explain correlated subquery with example.   CO3(U,A)

6) Explain following operators of subquery with example:- ALL, EXISTS.   CO3(U,A)

Q.3. Attempt any 4 of the following: **(20M)**

1) What are types of functional dependencies?   CO4(U)

2) Explain first normal form (1NF) with example.   CO4(U,A)

3) What is projection operator (π)? Explain with example.   CO4(U,A)

4) Write short note on role of database administration.   CO5(R)

5) What is view? Explain its types.   CO5(U)

6) Write short note on revoking of privileges.   CO6(R)

Q.4. Attempt any 5 of the following: **(15M)**

1) What do you mean by data independence?   CO1(R)

2) Write short note on attributes.   CO2(R)

3) Explain concept of foreign key.   CO2(R,U)

4) Explain case manipulation function.   CO3(U)
5) Write short note on decomposition.   CO4(R)

6) Write short note on modifying a views.   CO5(U)