

Seat Number: - _____

Duration:-2.5 Hours

G211NFDMS

[Total Marks]:- 75

N.B.:

- (1) All questions are compulsory.
- (2) make suitable assumptions wherever necessary and state the assumptions made.
- (3) Answers to the same question must be written together.
- (4) Numbers to the right indicate marks.
- (5) Draw neat labeled diagrams wherever necessary.
- (6) Use of Non-programmable calculators is allowed.

Q.1 Attempt any three

(15)

1. Explain Advantages and Disadvantages of DBMS.
2. What is Relational model and Relational database?
3. Explain Selection and Projection Operation in relational Algebra.
4. What are Integrity constraints?
5. Explain Entity Relationship model (ER).
6. Explain the terms.
 - a) Tuple
 - b) Record
 - c) Attribute
 - d) Primary Key
 - e) Foreign key

Q.2 Attempt any three

(15)

1. Explain normalization. Explain three different normal forms.
2. What is functional dependency? Explain in detail.
3. Explain the distinctions among the terms primary key, candidate key, and super key.
4. Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.
5. Explain Second Normal form using a table example.
6. Explain CODD's rules.

Q.3 Attempt any three

(15)

1. What are Joins? Explain different types of joins in detail.
2. Write the difference between Inner and Outer joins.
3. Explain AVG, MIN, MAX, SUM functions in detail.
4. Write a query for creating a Student table and inserting values in it. Student table should have at least 5 attributes and the SID should contain a Primary Key.
5. Explain DML commands
6. Explain the terms OrderBy and GroupBy with an example.

Q.4 Attempt any three

(15)

1. Explain what are views? Give an example.
2. What is the difference between horizontal view and vertical view?
3. Explain what an index is.
4. Why do we use hashing? Explain different types of Hashing.
5. Explain the term SubQuery
6. What are Triggers in DBMS? Explain.

Q.5 Attempt any three

(15)

1. What are ACID properties?
2. Explain various types of Locks
3. What is a deadlock in Transaction Management?
4. Explain different states of transactions with Diagram
5. Explain various transaction operations.
6. What is Serializability?.

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