



Time Allotted : 3 Hours

Full Marks :70

The Figures in the margin indicate full marks.  
Candidate are required to give their answers in their own words as far as practicable

**Group-A (Very Short Answer Type Question)**

1. Answer any ten of the following :

[ 1 x 10 = 10 ]

- (i) What is an Instance of a Database?
- (ii) What is the good database management practice?
- (iii) What is a relation in RDBMS?
- (iv) \_\_\_\_\_ is the time of temporal data that record when a fact was recorded in a database?
- (v) What is candidate key?
- (vi) If the database modifications occur while the transaction is still active, the transaction is said to use the \_\_\_\_\_ modification technique?
- (vii) What is view?
- (viii) The view of total database content is \_\_\_\_\_?
- (ix) In an E-R diagram attributes are represented by \_\_\_\_\_?
- (x) \_\_\_\_\_ clause is an additional filter that is applied to the result.
- (xi) What do you mean by Data independence?
- (xii) Which forms are based on the concept of transitive functional dependency \_\_\_\_\_?

**Group-B (Short Answer Type Question)**

Answer any three of the following

[ 5 x 3 = 15 ]

2. What is a View ? View does not take any memory space. Justify. How do you create an Insertable and Updatable view ? [ 5 ]
3. What is Database? Explain the advantages of DBMS over File Oriented System? [ 5 ]
4. Explain various types of Data Models in DB systems? [ 5 ]
5. What is the Degree of Relationships? [ 5 ]
6. What is 2NF? Give Example. [ 5 ]

**Group-C (Long Answer Type Question)**

Answer any three of the following

[ 15 x 3 = 45 ]

7. (a) Why are certain functional dependencies called trivial functional dependencies ? [ 5 ]  
(b) Use Armstrong's axioms to prove the soundness of the union rule. [ 5 ]  
(c) Compute the closure of the following set F of Ds for each relation schema [ 5 ]  
R = (A, B, C, D, E)  
A → BC  
CD → E  
B → D  
E → A  
List the candidate key for R.
8. (a) Why is normalization necessary? Compare between BCNF and 3rd Normal form. [ 7 ]  
(b) Consider the universal relation R={A, B, C, D, E, F, G, H, I, J} and the set of functional dependencies f={ AB → C, A → D, B → F, F → GH, D → IJ}. [ 8 ]  
What is the key for R? Normalize the relation R upto 3NF, justify your answer.
9. What is a Trigger in DBMS? What is a Stored Procedure in DBMS? Difference between Trigger and Stored procedure in DBMS. What is a database cursor and how to use it? [ 15 ]

- ✓ 10. Name and briefly describe the five SQL built-in functions? [ 15 ]  
Define and discuss data constraints?  
What is a cascading update and delete?
11. Draw the ERD of Online movie ticket booking system? [ 15 ]  
What are the fundamental operations in relational algebra?  
Explain each operation with example. What are the differences between DDL,DML,DCL.

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