



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : BCAC401 Database Management System

UPID : 400086

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) Define Hash file organization.
- (II) The main goal of indexing is to.....
- (III) What is the purpose of Roll Back?
- (IV) List two examples of DCL command.
- (V) Generalization is a top down approach. (State True or False?)
- (VI) What is the use of TRUNCATE command in SQL?
- (VII) A table is in BCNF if it is in 3NF and if every determinant is a _____ key.
- (VIII) Differentiate between fixed length records and variable length records.
- (IX) Which index is specified on the non ordering fields of a file?
- (X) If transaction T1 reads the change made by transaction T2, then T1 commits only after T2 commits. This property of transaction schedule is known as.....
- (XI) Paradox, dbase and Sybase are the example of.....
- (XII) Sub set of Candidate key is Super key. (State Yes or No ?)

Group-B (Short Answer Type Question)

Answer any three of the following :

[5 x 3 = 15]

2. What is Metadata explain with example? What is data dictionary? [5]
3. Define E-R diagram and how does it help in system development. [5]
4. What do you mean by Cursor? Explain Different types of attributes of Implicit Cursor. [5]
5. What are the Armstrong axioms Rules? [5]
6. Write down the purpose of Query Optimization technique. [5]

Group-C (Long Answer Type Question)

Answer any three of the following :

[15 x 3 = 45]

7. (a) Briefly explain that how to control any transaction using Commit, Save point and Rollback. [6]
 (b) What is schedule? Give an example of a serial schedule with two transactions. [5]
 (c) What do you mean by strict schedule? [4]
8. (a) Explain the main components of DBMS. [5]
 (b) List the advantage and disadvantages of Hierarchical, Network and Relational data models. [5]
 (c) What are the differences between database schema and database instances? [5]
9. (a) Draw an E-R diagram for a Library Management System with cardinality and proper attributes names. [7]
 (b) Write a short note about different types of mapping constraints. [3]
 (c) What is the relationship between Weak entity and Strong entity set with proper example? Define identifying and non identifying relation. [5]
10. (a) Consider the following relation schema: [5]
 BANK(cust_name, account_no, account_type, balance, branch)
 Write the SQL syntax to find the answers of the following queries:
 i) Retrieve the name of customer who has an account in 'Kolkata' and balance less than 10,000.
 ii) List the information of all the customers having saving account.
 iii) Display the balance of those customers whose name started with letter 'A' and ending with 'L'.
 iv) Display the name who have the minimum balance among all customers.

- v) Retrieve the total balance amount for individual branch. [5]
- (b) Sketch and explain three tier architecture of DBMS. [5]
- (c) What is View? Give the syntax and example to create a View? [5]
11. (a) Explain Referential Integrity constraint. What is the use of IS NULL operator in SQL. [5]
- (b) Brief the following SQL functions with syntax and example:
AVG (), TO_DATE (), TRIM (), SUBSTR (), MOD () [5]
- (c) Write a short notes about ASSERTIONS. [5]

*** END OF PAPER ***