

9. Write notes on the following :

- (i) Concurrency Control
- (ii) Locking Techniques
- (iii) Database Security
- (iv) Integrity Constraints

Roll No.

BCA-501(N)

B. C. A. (Fifth Semester) EXAMINATION, Dec., 2019

(New Course)

Paper First

INTRODUCTION TO DBMS

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt questions from all Sections as directed.

Inst. : The candidates are required to answer only in serial order. If there are many parts of a question, answer them in continuation.

Section—A

(Short Answer Type Questions)

Note : Attempt all questions. Each question carries 3 marks.

1. (A) Define the characteristics of data in database.
- (B) Differentiate Network data model and Relational data model.
- (C) What do you mean by ER diagram ? Draw its various symbols with their purpose.
- (D) What is Schema ? Explain its types.
- (E) Discuss the types of relationship among entities with suitable examples.

- (F) Differentiate B+ tree and B- tree.
- (G) Discuss different types of database users.
- (H) What is Select Operation ? How is it represented ?
Explain with an example.
- (I) What is extendible hashing ?

Section—B

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 12 marks.

2. What is the DBMS ? Explain the various functions and services of a DBMS. What are the advantages and disadvantages of a DBMS ?
3. Design an ER diagram for airline reservation system consisting of flights, aircraft, airports, fares, reservations, tickets, pilots and passengers. Clearly highlight the entities, the relationship, the primary keys and the mapping constraints.
4. (a) Write the objective of normalization and explain its normal forms.
(b) What is Functional Dependency ? Discuss its types with suitable examples.
5. Discuss the following topics :
 - (i) Internal Hashing
 - (ii) External Hashing
 - (iii) Dynamic Hashing

Section—C

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 12 marks.

6. Discuss the various commands and operators of SQL with suitable examples.
7. For a worker, relation, whose attributes are worker-id, firstname, lastname, salary, joiningdate and department. Define relational queries for the following tasks in SQL :
 - (i) Create the table worker.
 - (ii) Inset three rows of data into the table worker.
 - (iii) Write a SQL query to fetch unique values of department from worker table.
 - (iv) Write an SQL query to print details of worker whose salary lies between 1,00,000 and 5,00,000.
 - (v) Write an SQL query to print details of the workers who have joined in Oct., 2019.
 - (vi) Write an SQL query to print the details of workers in their descending order of salary.
8. (a) Discuss the extended features of ER diagram.
(b) Discuss the various categories of SQL commands :
 - (i) DDL
 - (ii) DML
 - (iii) DCL
 - (iv) DAS