

9. What is deadlock in the contest of concurrent transaction execution ? When does it occur ? How is it detected in centralized database system ? How can it be avoided ? Explain in detail.

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DATABASE MANAGEMENT SYSTEM

Paper : 16MCA32C4

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : (i) Question No. 1 is *compulsory*. Apart from it, attempt *four* questions by selecting *one* question from each Unit.

(ii) All questions carry equal marks.

1. (a) Write four drawbacks of file processing system.
- (b) What do you mean by database schema ?
- (c) What is the role of DBA ?
- (d) What is view ? Write the command for creating views.

- (e) Differentiate between DROP and DELETE commands.
- (f) Differentiate between Primary key and Unique key.
- (g) What is serial schedule ?
- (h) Write the generic structure of PL/SQL.

UNIT – I

2. (a) Show the block diagram of three-level architecture of DBMS and explain the significance of each level.
- (b) What is data independence ? Explain logical data independence and physical data independence with the help of example.
3. Define entity, attributes and relationships as used in relational databases. Describe the purpose of E-R model. Construct an E-R diagram of employee salary database and also mention type of association between the entities.

UNIT – II

4. What do you mean by integrity constraints ? Describe its importance and explain various types of integrity constraints with the help of example.
5. What is relational algebra ? How it is different from relational calculus ? Explain various types of unary

and set theory operations on relational algebra with the help of example.

UNIT – III

6. (a) Write an SQL query for the following :
 - (i) To create a table of STUDENT database with minimum 5 fields
 - (ii) To insert two records
 - (iii) To add new field
 - (iv) To display all records
- (b) Explain the concept of null values in SQL. What is the role of aggregate functions in SQL queries ? Explain different types of aggregate functions.
7. What do you mean by functional dependency ? Explain its types. Describe all the normal forms based on functional dependency with the help of example.

UNIT – IV

8. (a) What is a transaction ? What are the properties of transaction ? How is transaction recovered when a system failure occurs ?
- (b) What is locking ? Explain various locking techniques for concurrency control with example.