1604 21-747 008

Code No: F-13823/N/AICTE

FACULTY OF ENGINEERING

B.E. CSE (AI & DS) V - Semester (AICTE) (Main & Backlog) (New) Examination, February/ March 2024

Subject: Database Management System

Time: 3 Hours **Max. Marks: 70**

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Write about Transaction Management.
   b) Define data mining and Information Retrieval system.
   c) Discuss about Nested sub Query.
   d) What is cursor? Explain with an example.
   e) What are the ACID properties of transactions? Explain.
   f) What is meant by precedence graph?
   g) Differentiate between partial functional dependency and full functional dependency.

2. a) Explain about different Database languages in detail.
   b) Discuss about different data base users and their functionalities.

3. a) Write SQL statements for following:
   Student(Enrno, name, courseId, emailId, cellno)
   Course(courseId, course_nm, duration)
   i) Add a column city in student table.
   ii) Find out list of students who have enrolled in "computer" course.
   iii) List name of all courses with their duration.
   iv) List name of all students start with 'a'.
   v) List email Id and cell no of all mechanical engineering students
   b) i) List the data types supported by SQL
   ii) Demonstrate the use of DISTINCT keyword in SQL select statement.

4. a) What is Normalization? Explain 1NF,2NF & 3NF with suitable examples
   b) i) When is a decomposition said to be dependency preserving? Why this property useful? Explain.
   ii) Discuss about mapping cardinalities.

5. a) Explain about various SQL Query processing steps in detail.
   b) Briefly discuss about query optimization strategies.

6. a) What is meant by conflict serializability? Explain with an example.
   b) i) Explain multiple granularity of locking protocol with example.
   ii) Briefly discuss about recovery algorithm.

7. a) Discuss about stored procedures and triggers in SQL with examples.
   b) What is need of lock in DBMS? Explain shared lock and exclusive lock with the help of example.

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