21819

3 Hours / 70 Marks   Seat No. ☐☐☐☐☐☐☐☐

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

Marks

1. **Attempt any FIVE of the following :**   **10**

   (a) Define :

   (i) Instance   (ii) Schema

   (b) List any four advantages of DBMS.

   (c) State any two E.F. Codd's rule for RDBMS.

   (d) List DCL commands.

   (e) Define Normalization and list its types.

   (f) Write syntax for creating synonyms with example.

   (g) State any four PL/SQL datatypes.

2. **Attempt any THREE of the following :**   **12**

   (a) Explain overall structure of DBMS with the help of diagram.

   (b) Explain difference between delete and truncate command with example.

   (c) Write and explain syntax for creating view with example.

   (d) Explain PL/SQL block structure with the help of diagram.

3.   **Attempt any THREE of the following :**   **12**

   (a)   State and explain 2NF with example.

   (b)   Explain any four aggregate functions with example.

   (c)   Explain exception handling in PL/SQL with example.

   (d)   Explain state of transaction with the help of diagram.

4.   **Attempt any THREE of the following :**   **12**

   (a)   State the difference between Relational and Hierarchical model.

   (b)   List the SQL operations and explain range searching operation 'between' and pattern matching operator 'like' with example.

   (c)   Explain cursor with example.

   (d)   State the use of database trigger and also list types of trigger.

   (e)   Explain recovery techniques with example.

5.   **Attempt any TWO of the following :**   **12**

   (a)   Draw ER diagram for library management system considering issue and return, fine collection facility. Consider appropriate entities.

   (b)   Consider the table

   Student (name, marks, dept, age, place, phone, birthdate) Write SQL query for following :

   (i)   To list students having place as 'Pune' or 'Jalgaon'.

   (ii)   To list students having same department (dept) as that of 'Rachana'.

   (iii)   To change marks of 'Rahul' from 81 to 96.

   (iv)   To list student name and marks from 'Computer' dept.

   (v)   To list student name who have marks less than 40.

   (vi)   To list students who are not from 'Mumbai'.

   (c)   Create simple and composite index. Write command to drop above index.

6. **Attempt any TWO of the following :** 12

   (a) (i)   Write a command to create table student (RNo., name, marks, dept.) with proper datatype and RNo as primary key.

        (ii)   Write a command to create and drop sequence.

   (b) Write a PL/SQL program to calculate factorial of a given number.

   (c) Write SQL command for following :

        (i)   Create user

        (ii)   Grant privileges to user

        (iii) Remove privileges from user

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