VCD/ SYCS SEM- III ADVANCED DATABASE CONCEPTS 75-MARKS 2$^{1/2}$ HOURS

Note. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Mixing of sub-questions is not allowed.

Q. 1 Attempt the following. (Any FOUR) (20M)
(a) Explain all scalar data types used in oracle.
(b) What are the advantages of PL/SQL?
(c) Explain with suitable example:
   i) IF THEN statement
   ii) WHILE loop
(d) Explain CASE structure with proper syntax. Give suitable example for it.
(e) What are the different ways to store data in variable? Illustrate with proper example.
(f) Create a procedure to calculate square of a number. Use PL/SQL block to execute it.

Q. 2 Attempt the following. (Any FOUR) (20M)
(a) Write a note on Variable size array.
(b) List out the steps in order to execute dynamic SQL with DBMS_SQL package.
(c) Write a note on SQL Injection.
(d) Define Cursor. Explain all the steps involved in the explicit cursor execution.
(e) What are Collection Comparisons? Also explain the Collection Methods.
(f) Use student(rollno,sname,marks) table. Insert one row with NULL in marks column. Create a user defined exception if marks of particular student is null.

Q. 3 Attempt the following. (Any FOUR) (20M)
(a) Explain ARIES Algorithm. What are the main principles behind the ARIES Recovery Algorithm?
(b) Explain Deadlock prevention mechanism.
(c) What are different steps involved in package invocation?
(d) Write note on Two Phase Locking protocol.
(e) What are the advantages of Concurrent Execution?
(f) Consider a table Actor (actorid,act_name,city). Create a trigger that displays a message 'Updated Successfully' after updating a row in the Actor table.

Q. 4   Attempt the following. (Any FIVE)   (15M)
(a)   What is Sequence in PL/SQL? Explain its parameter.
(b)   Explain the concept of NULL in PL/SQL.
(c)   Write note on Nested Tables.
(d)   Explain the uses of %type and %rowtype attributes used in oracle.
(e)   Define-
         i)   Serial Schedule
         ii)   Serializable Schedule
         iii)   Conflict Equivalent Schedule.
(f)   Explain Lost Update Problem in transaction.

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