Time: 2½ hrs. **Marks:75**

Note:
1. All questions are compulsory with internal choice.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks.

Q.1 Answer the following (any four) **(20)**

(a) Explain PL/SQL with advantages.

(b) Write a short note on the CASE statement.

(c) Write a short note on procedure.

(d) Write a PL/SQL code to check whether the entered number is even or odd.

(e) Write a PL/SQL code to calculate factorial of a number using a recursive function.

(f) Explain Sequence with syntax and suitable example.

Q.2 Answer the following (any four) **(20)**

(a) Explain User-defined records with examples.

(b) Explain explicit (user-defined) cursor with syntax and example.

(c) Write a PL/SQL code to handle an exception NO_DATA_FOUND while selecting a record from the customer table (id, name, address, salary) which does not exist.

(d) Explain Associative array collection with example.

(e) Write a PL/SQL code to create a table to store the percentage of students along with names and print the same using VAARAY.

(f) What is Static SQL? Explain COMMIT and ROLLBACK statements.

Q.3 Answer the following (any four) **(20)**

(a) What is a transaction? Explain Isolation and Durability properties of a transaction.

(b) What is a Package? Explain the need for a package. Explain package specification with examples.

(c) Explain Trigger with the after clause.

(d) What is serializability? Explain types of serializability.

(e) Explain Two-phase Commit Protocol.

(f) Explain ARIES algorithm.

Q.4 Answer the following (any five) **(15)**

(a) Explain GOTO and NULL statements with syntax and suitable examples.

(b) Explain architecture of PL/SQL with diagrams.

(c) Explain table-based records with syntax.

(d) What is cursor? Explain following attributes of implicit cursor.
a) %FOUND b) %NOTFOUND c) %ISOPEN d) %ROWCOUNT

(e) What is a transaction? Explain Atomicity and Consistency properties of a transaction.

(f) Explain package body and Package Instantiation and Initialization with examples.

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