

(2½ Hours)

[Total Marks: 75]

- N.B.: 1) All questions are compulsory.  
2) Figures to the right indicate marks.  
3) Illustrations, in-depth answers and diagrams will be appreciated.  
4) Mixing of sub-questions is not allowed.

## 1. Attempt All (Each of 5 Marks) :

(15)

## (a) Multiple Choice Questions

- 1) Triggers ----- enabled or disabled.  
A) can be                      B) cannot be  
C) ought to be                D) always
- 2) Dbms\_output is a -----  
A) Procedure                  B) Package  
C) Function                    D) None of the above
- 3) CREATE OR REPLACE FUNCTION total customers  
total number(2) := 0;  
BEGIN  
    SELECT max(age) into m\_age FROM customers;  
RETURN total;  
END;  
A) It does not have the Return clause in function declaration  
B) The Return type statement is wrong  
C) Function definition should not use IS keyword  
D) Nothing Wrong
- 4) The difference between rollback and commit is -----  
A) commit saves transaction, rollback undoes it  
B) commit undoes the transaction, and rollback saves it  
C) commit loads transaction and rollback saves it  
D) none of the above
- 5) PL/SQL is a procedural language that has following advantages –  
A) Integration with database  
B) Better performance  
C) Support for Transaction Processing  
D) All of the mentioned above

- (b) Fill in the blanks (exit, drop view, nextval , %type, completed, exit when)
- 1) In Sequence, the next value is seen by -----
  - 2) A transaction that completes its execution successfully, it is said to be -----
  - 3) To drop a view we use ----- statement
  - 4) To map the columns of the table with the memory variables declared in PL/SQL block ----- is used.
  - 5) To terminate the loop end loop statement ----- statement is used
- (c) Answer in 1 – 2 sentences
1. Write a syntax to declare procedure.
  2. Give an example where : old is used.
  3. State the SQL statements used to lock the table in an exclusive manner.
  4. How to declare and assign the variables in PL/SQL?
  5. Write any 2 advantages of PL/SQL over SQL.

**Q. 2 Attempt the following (Any THREE)****(15)**

- (a) Generate the trigger to generate the primary key values for order\_id in the orders (ord\_id, ord\_date) table and display the values in the table.
- (b) Explain the hashed file organization.
- (c) What is sequence? How to create, alter and drop a sequence?
- (d) Employees of the testing department in the Perpetual Systems does testing of the software and result is taken as test-id, test-name, date\_of\_testing, test\_result. Execute the procedure to insert the values in the table "test\_specifications".
- (e) Define index. Write the commands for creating, altering and dropping an index.
- (f) Write a short note on using DML statements used in trigger using before/after clause by giving an example.

**Q. 3 Attempt the following (Any THREE)****(15)**

- (a) Explain the role of Null values in PL/SQL block.
- (b) Write a pl/sql block to store the details of flat in flat\_details(flat type, no\_of\_rooms). Accept the no\_of\_rooms from the table. If the no\_of\_rooms > 5 then store flat\_type as BIG, if no\_of\_rooms > 3 and less than 5 then store flat\_type as SPACIOUS. If no\_of\_rooms >1 and less than or equal to 2 then flat type is STUDIO. Store the flat type by Case structure
- (c) Write on the role of exit when statement in loop ... end loop with an example



- (d) State how to write, call and execute the function from a PL/SQL block along with an example.
- (e) Write a PL/SQL block to calculate the simple interest when the values of Principal amount, rate and duration is accepted from the user.
- (f) Write down how Case structure in PL/SQL is different from if... else statement.

**Q. 4 Attempt the following (Any THREE) (15)**

- (a) What is ACID? What does each property say with respect to the execution of transaction?
- (b) What is lock? Explain locking commands in context with SQL along with its types.
- (c) Define log. What are the contents of log record?
- (d) Explain two phase commit protocol.
- (e) Describe Aries Algorithm
- (f) Write a short note on Write Ahead Log Protocol.

**Q. 5 Attempt the following (Any THREE) (15)**

- (a) Write a short note on PL/SQL Data Types.
- (b) Write a PL/SQL to satisfy following conditions, refer employee\_tbl (emp\_id, emp\_name, emp\_salary, job).
  - 1) If job is clerk then increase the salary by Rs. 2000.
  - 2) If job is manager then increase the salary by Rs. 10000.

Otherwise, if job is other than above two categories, then block should show an error message 'No change in salary'.

- (c) Write the commands for the following –  
Refer a table products (prodid, pname, quantity, price, type).
  - 1. Insert 2 records into the same table.
  - 2. Save the contents.
  - 3. Delete the record which is recently inserted.
  - 4. Rollback the transaction.
  - 5. Save the changes done till this point by the name as T1.
- (d) Explain Time Stamp Based Protocol.
- (e) What is the meaning of the error “exact fetch returns more than one row” which occurs when executing PL/SQL block?

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