# 22416

**23124**

**3 Hours / 70 Marks** Seat No. | | | | | | | | |

*Instructions* – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

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

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

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

a) Define terms:–

i) Relation

ii) Domain

b) List the types of database users.

c) State the use of Range searching operator.

d) Define view. State its uses.

e) State properties of transaction.

f) List any four relational algebra operators.

g) Give need of sequences.

**Marks**

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

a) Describe concept of subqueries with example.

b) Explain steps of cursor implementation with syntax and example.

c) Differentiate between primary key constraint and Not Null constraint. (Any four points)

d) Describe use of Grant and Revoke commands with suitable example.

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

a) Explain any four aggregate function with examples.

b) Describe any two types of Indexes with examples.

c) Write a PL/SQL program to display 10 reverse numbers. Use 'for' loop.

d) Explain ACID properties of transaction.

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

a) Define database backup. Describe how database backup helps to avoid failures.

b) Explain creating and dropping synonyms with the help of example.

c) Write SQL statements for following:

i) Create table student with roll no, name, date-of-birth, percentage, assign roll no as primary key.

ii) Add new column email in student table.

iii) Change the name of table from 'student' to 'stud_info'.

iv) Delete table 'stud_info' with its structure and data.

d) Differentiate between WHERE and HAVING clause. (Any four points)

e) Create a trigger which invokes on updation of record on emp table.

**Marks**

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

a) Describe Commit, Rollback and save point with example.

b) i) Create a view called stud_info of information_technology course students.

ii) Display the contents of this view.

iii) Modify the data using view stud_info i.e. modify email address of 'yogesh'.

iv) Remove the stud_info.

c) Write a PL-SQL program which accept the customer ID from the user, if user enters an invalid ID then the exception invalid_id is raised using exception, handling.

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

a) Create a sequence –

i) Sequence name is seq_1, start with 1, increment by 1, minimum value 1, maximum value 20.

ii) Use a seq_1 to insert the values into table student [ID Number (10) Name char(20)];

iii) Change the seq_1 max value 20 to 50.

iv) Drop the sequence.

b) Write a PL-SQL code to print largest number from three numbers (accept three numbers from user).

c) Consider the following database Employee (emp_id, emp_name, emp_city, emp_addr, emp_dept, join_data).

i) Display the emp_id of employee who live in city 'Mumbai' or 'Delhi'.

ii) Change employee name, 'Aakash' to 'Jayesh'.

iii) Display the total number of employee whose dept number is 5.