

# 22416

**21222**

**3 Hours / 70 Marks**

Seat No. 

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15 minutes extra for each hour

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- 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 database. Give any two suitable example of database.
  - b) List any four aggregate functions.
  - c) Define view.
  - d) Enlist types of exceptions in PL/SQL.
  - e) Draw diagram of transaction.
  - f) Enlist types of database failures.
  - g) Define Synonyms.

P.T.O.

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

- a) Differentiate between Drop and Truncate command.
- b) Explain any two types of joins.
- c) Perform following operations on table student.
  - (i) Create view Stud-view having marks greater than 80.
  - (ii) Permanently delete Stud\_view
- d) Consider following schema  
Employee (empid, ename, address, designation, salary)  
Perform following operations on this schema
  - (i) Add column city varchar (15)
  - (ii) Change ename from 'Vijay' to 'Sachin'
  - (iii) Display employees having salary more than 50000
  - (iv) Delete record having ename as 'Sanjay'

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

- a) Create sequence with following specification
  - (i) Name :- empid-seq
  - (ii) Starting value :- 101
  - (iii) Maximum value :- 1000
  - (iv) Incremented by 1
- b) Describe ACID properties of transaction.
- c) Explain range searching operators with suitable example.
- d) Write SQL statements to create following indices on employee table  
Employee (empid, ename, address, designation, salary)
  - (i) Create composite-index emp-addr with attributes address, city.
  - (ii) Create unique index emp-ung with attribute empid.

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

- a) Draw and explain PL/SQL block structure.
- b) Define index. Explain types of indices with proper example.
- c) Consider schema

Employee (empid, ename, address, designation, salary)

Write SQL statements for following:

- (i) List maximum and minimum salary
  - (ii) Find ename of an employees who belongs to "Mumbai".
  - (iii) Find total salary of all managers.
  - (iv) Find empid of all employees where name ends with 'i'.
- d) Explain lock based concurrency control algorithm.
  - e) Write PL/SQL code using user defined exception for following scenario.

If salary of employee is greater than 20,000 after giving raise by 20% then raise exception stating "Salary too high".

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

- a) Create employee table with following Integrity constraints.  
employee (empid, ename, phone, dob, addr, designation  
salary, deptno)
  - (i) empid as primary key
  - (ii) Phone as unique
  - (iii) deptno as not null

Also create dept table as dept (deptno, dname, totalemp)  
where deptno as primary key and totalemp with check  
constraint as totalemp > 10

b) Sailor (Sid, sname, rating, age)

Boat (Bid, bname, color)

Reserve (sid, Bid, rdate)

Consider above schemas and write SQL statement for following.

- (i) Display average age of sailor.
  - (ii) Display name of boat reserved on date 12.12.2018
  - (iii) List details of boats having some color as “interlake”.
  - (iv) Apply equijoin on sailor and reserve.
  - (v) Display information of all employees having rating less than 5 and greater than 8.
  - (vi) List all sailors having name consist of 5 letters only.
- c) Write PL/SQL program to display odd numbers between 1 to 50.

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

**12**

- a) Write SQL statements for following.
  - (i) Create user ‘admin’ with password ‘123’
  - (ii) Give user admin full access to employee table.
  - (iii) Remove delete privileges from admin.
- b) Create curser emp\_copy to select all records from employee table and copy them into employee2 table.
- c) Write SQL statement for following:
  - (i) Create view on deposit (Accno, cname, amount) where amount is greater than 5000.
  - (ii) Create Synonym empdup for employee.
  - (iii) Drop Synonym created on employee table.

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