Q.P. Code: 22533

(2 ½ 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.

Q. 1   Attempt the following (Any THREE)   (15)
(a)   Write note on Armstrong's axioms.
(b)   Discuss desirable properties of decomposition.
(c)   Discuss dirty read & Unrepeatable Read anomalies associated with interleaved transactions.
(d)   With example discuss any two transaction properties.
(e)   Explain the concept of transaction & schedule with example.
(f)   What is precedence graph? How it helps in testing conflicting schedules?

Q. 2   Attempt the following (Any THREE)   (15)
(a)   What is the role of lock manager?
(b)   Write a note on dead lock.
(c)   How 2PL works in following situation?

Transaction T1 reads Object O. Transaction T2 wants to write Object O. Transaction T3 wants to reads Object O. Transaction T4 reads Object O.

(d)   Write a note on LOG.
(e)   Explain the principles behind working of ARIES.
(f)   How check pointing is used in ARIES?

Q. 3   Attempt the following (Any THREE)   (15)
(a)   Write a note on data types in PL/SQL.
(b)   Explain Case conditional control structure in PL/SQL. Give example.
(c)   State some advantages of PL/SQL. Also explain structure of PL/SQL block.
(d)   Write PL/SQL code to store radius & area of circle for radius ranges from 5 to 15, into table circle(radius number, area number).
(e)   How to create nested table? Give example.

(f) Consider table Sales (sno, sdate, samt). Write PL/SQL code to calculate commission for specified salesman by accepting salesman number from user. Find total sale done by salesman & calculate commission using following rates. sales >=25,000 3% of sales , >=35,000 4% of sales , >=50,000 5% of sales

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

(a) Consider table book(bno , bname , qty, rate) where bno is PK. Define sequence to get value for bno. First book number should be 1001, it should not exceed 5000. Show how to use this sequence while inserting data into book.

(b) Discuss relational operator's projection & selection.

(c) Write short note on Query Processing steps.

(d) Explain both implicit & explicit cursor with example.

(e) Consider table Emp(eno, name, dept, design, sal)

Write PL/SQL code to print designation wise employee information for specified department. Display report as follows:

Employee list of : <department>

Emp No	Name	Designation	Salary

(f) Discuss types & level of lock used in SQL.

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

(a) Write short note on Closure of FD.

(b) How Time stamp is used in concurrency?

(c) Write PL/SQL code to read 2 number & print all even numbers between these 2 numbers including both the numbers.

(d) How SQL supports transaction management? Explain the commands associated.

(e) How Redo phase of ARIES works?

(f) What are cursor attributes? How to use them?