Roll No. ....   Total Pages : 6

3987/M

M-25/2051

RELATIONAL DATABASE MANAGEMENT SYSTEMS WITH ORACLE

Paper–BCA-226

Semester–IV

Time allowed : 3 Hours]   [Maximum Marks : 75

Note : The candidates are required to attempt two questions each from sections A and B carrying 15 marks each. Section C consisting of 8 short answer type questions.

SECTION-A

1. What is a file? Write basic operations on file. Explain various file organization techniques in detail.   15

2. (a) What do you mean by RDBMS? How it differs from DBMS? Discuss relationships among RDBMS and application programs.   8

   (b) Define conflict serializability and a conflict serializable schedule? Determine whether the following schedule is conflict serializable or not :   7

   T1:R(X), T2:R(X), T1:W(X), T2:R(Y),
   T3:R(Z), T2:W(Z), T3:W(X), T3:W(Y),
   T2:W(Y), T3:W(Z).

3. (a) Explain and compare various types of schedules available for transaction management.   8

   (b) Discuss the two phase locking protocol? What are its variations?   7

4. What are deadlocks in databases? Explain with suitable examples how deadlocks can be detected and prevented.   15

SECTION-B

5. Employee (Empld, EmpName, Deptld, Designation, Salary)

Deptt (Deptld, DeptName)

Joining (Empld, Deptld, DateofJoin)

For the above given tables write the following SQL Queries.

(a) Give an SQL DDL definition of this database (specify constraints also).

(b) List the number of employees in each department, sorted high to low.

(c) Get the number of employees Joined between Jan 1, 2018 and Jan 31, 2019.

(d) List details of all employees whose name start with 'A' or 'M' and have salary more than 20000.

(e) Change the position of Geeta from 'Manager' to 'Senior Manager'.

(f) List the Employees getting highest salary in each department.

g) Display the no. of employees at various designations in each department.

(h) Drop the table Employee.   15

6. (a) Compare the deferred modification and immediate modification technique of the log-based recovery scheme for concurrent transactions? Why and how checkpoints are used to perform such log-based recovery.   8

(b) Explain with diagram the client/server architecture of Oracle.   7

7. (a) Explain following constraints with examples

Null, Default, Primary, Unique, Foreign key.   10

(b) Discuss various types of failures. 5

8. (a) What do you mean by a trigger? How a database trigger is applied? How you can create and drop a trigger? Give examples. 8

(b) Explain following SQL commands with examples

create, update, alter, select, insert. 7

SECTION-C

9. Short answer type questions.

(i) Discuss database trigger vs SQL*forms. 2

(ii) Differentiate between DDL and DML. 2

(iii) What are the properties of transaction? 2

(iv) Discuss the various states of a transaction. 2

(v) What are the types of triggers? 2

(vi) What do you mean by transaction rollback? 2

(vii) Write main features of RDBMS. 2

(viii) What is Thomas's Write Rule? 1