

[5803]-204

F.Y. B.B.A. (CA)

**CA - 204 : RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)  
(2019 Pattern) (Semester - II)****Time : 2½ Hours]****[Max. Marks : 70****Instructions to the candidates:**

- 1) Total number of questions are 5.
- 2) Figures to the right indicate full marks.

**Q1) Attempt any EIGHT of the following (Out of TEN) [8 × 2 = 16]**

- a) What is difference between DBMS and RDBMS?
- b) What is timestamp?
- c) Define Transaction.
- d) What is cursor?
- e) Define serializability.
- f) What is deadlock?
- g) What is atomicity?
- h) What is procedure?
- i) What is trigger?
- j) What are operators in PLSQL?

**Q2) Attempt any FOUR of the following (Out of FIVE) [4 × 4 = 16]**

- a) Explain % type and % row type with an example.
- b) List and explain properties of transaction.
- c) What is deadlock? Explain methods to prevent deadlock.
- d) Explain two-phase locking protocol in detail.
- e) Explain RDBMS packages in detail.

**P.T.O.**

**Q3) Attempt any FOUR of the following (Out of FIVE) :**

**[4 × 4 = 16]**

- What is function? Explain with an example.
- What is exception handling? Explain predefined exceptions.
- Explain PL SQL block in detail.
- Explain failure classification in detail.
- What is log? Explain log based recovery.

**Q4) Attempt any FOUR of the following (Out of FIVE) :**

**[4 × 4 = 16]**

- Consider following relational database.

Doctor (dno, dname, dcity)

Hospital (hno, hname, hcity)

Doct-Hosp (dno, hno)

Write a function to return count of number of hospitals located in Kolkatta City.

- Consider the following transaction. Give two non-serial schedules that the serializable :

T1	T2
Read(A)	Read(B)
A = A - 1000	B = B + 100
Write(A)	Write(B)
Read(B)	Read(C)
B = B - 100	C = C + 100
Write(B)	Write(C)

- Consider the following relational database :

Customer (cno, cname, city)

Account (ano, acc-type, balance, cno)

Define a trigger that restricts insertion or updation of account having balance less than 100.

- d) Consider the following related database :

Customer (cno, cname, city)

Loan (lno, lamt, no\_of\_years, cno)

Write a procedure to display total loan amount from Delhi City.

- e) Following is the list of events in an interleaved execution of set T1, T2, T3 and T4. Assuming 2PL (Two Phase Lock). Is there a deadlock? If yes, which transactions are involved in deadlock?

Time	Transaction	Code
t <sub>1</sub>	T1	Lock(A,X)
t <sub>2</sub>	T2	Lock(B,S)
t <sub>3</sub>	T3	Lock(A,S)
t <sub>4</sub>	T1	Lock(C,X)
t <sub>5</sub>	T2	Lock(D,X)
t <sub>6</sub>	T1	Lock(D,S)
t <sub>7</sub>	T2	Lock(C,S)

Q5) Write a short note on ANY TWO of the following (Out of THREE) :

[2 × 3 = 6]

- Characteristics of RDBMS.
- Control Statements in PL/SQL.
- Concurrent Execution.



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