

Total No. of Questions : 5]

SEAT No. :

P4033

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[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]**

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

**Q4) Attempt any FOUR of the following (Out of FIVE) : [4 × 4 = 16]**

- a) 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.

- b) 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)

- 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]**

- a) Characteristics of RDBMS.
- b) Control Statements in PLSQL.
- c) Concurrent Execution.

