Total No. of Questions : 5]

SEAT No. : ____

PA-1003

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F.Y.B.Sc. (Computer Science)

CS-122: RELATIONAL DATABASE MANAGEMENT SYSTEM

(2019 CBCS Pattern) (Semester-II) (Paper-II)

Time : 2 Hours] ***[Max. Marks : 35***

Instructions to the candidates:

1) ***Total number of questions 5.***
2) ***Q.1 - Q.4 carries equal marks and Q.5 carries 3 marks.***
3) ***All questions care compulsory.***

Q1) Attempt any eight of the following. **[8×1=8]**

a) Key-value and graph databases are examples of NoSQL. State TRUE/FALSE.

b) Define cascading rollback.

c) Write syntax of GRANT command.

d) What is shared lock?

e) What do you mean by bound cursor?

f) What are audit trails?

g) When does the dirty read occur?

h) What is content-based query?

i) Serializability can easily be ensured if access to database is done mutually exclusive manner. State TRUE/FALSE.

j) Which term is used for a collection of in-memory buffers?

Q2) Attempt any four of the following. **[4×2=8]**

a) Write difference between wound-wait and wait-die.

b) Explain REVOKE command with one example.

c) State different levels of security.

d) List the error levels used in raise statement.

e) State methods for implementing timestamp.

P.T.O.

Q3) Attempt any two of the following. **[2×4=8]**

a) Write a cursor to list details of students who have taken RDBMS as a subject. Consider the following schema for writing this:

Student (sno, sname)

Teacher (tno, tname, tqualification)

Both these are related with many-many relationship.

b) Which are different types of log entries are there in system log, explain with examples?

c) State and explain commands that are used to generate and destroy a view.

Q4) Attempt any TWO of the following. **[4×2=8]**

a) Following are the log entries at the time of system crash:

<T1, start>

<T1, X, 40>

<T1, commit>

<checkpoint>

<T2, start>

<T2, U, 80>

<T3, start>

<T3, Z, 40>

<T2, commit>

system crash

if immediate update technique is used, what will be the recovery procedure?

b) The following is a list of events in an interleaved execution of set of transaction T1, T2, T3, T4 with two phase locking protocol:

Time	Transaction	Code
t_1	T1	LOCK (A,X)
t_2	T2	LOCK (B,S)
t_3	T3	LOCK (A,X)
t_4	T4	LOCK (C,S)
t_5	T1	LOCK (B,X)
t_6	T2	LOCK (C,X)
t_7	T3	LOCK (D,S)
t_8	T4	LOCK (D,S)

Find, is there any deadlock? If yes, which transactions are involved in a deadlock?

c) Consider the following schema:

Student (roll, name, address, class)

Subject (code, subjectname, teachername)

Stud _Sub(roll, code, marks)

Define a trigger before insert for every row as a student-subject table, whatever marks entered is <0 or >100, raise an application error and display corresponding message.

Q5) Attempt any ONE of the following. **[1×3=3]**

a) What is transaction? Explain ACID properties in detail.

b) Write a short note on multimedia database.