[Total No. of Questions: 5]

SEAT No. :

[Total No. of Pages: 2]

F.Y.B.Sc.(CS)

CS - 122: RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

(2019 Pattern) (Semester - II)

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

Instructions to the candidates:

1) *Total numbers of questions are 5.*
2) *Total marks assigned 35.*
3) *Time assigned 2 hours.*

Q1) **Attempt any EIGHT of the following (Out of TEN):** **[8 × 1 = 8]**

a) What is deadlock?

b) Explain parallel database system.

c) What are default constraints?

d) What do you mean by exception handling?

e) List any two advantages of distributed database system.

f) Define timestamp.

g) What do you mean by database recovery concept?

h) What is multimedia database?

i) What is cryptography?

j) Define cascading rollback.

Q2) **Attempt any FOUR of the following (Out of FIVE) :** **[4 × 2 = 8]**

a) What is trigger? With syntax.

b) What do you mean by system privileges?

c) Draw the state diagram of transaction.

d) Explain the purpose of foreign key.

e) Explain encryption technique for database.

P.T.O

Q3) Attempt any TWO of the following (Out of THREE): [2 × 4 = 8]

a) A Schedule has transaction T1,T2, and T3 as given below;

r1(A),r1(B),r2(A),r2(B),w3(A),w1(C),w1(B),w3(C)

i) Draw precedence graph.

ii) Is schedule conflict serializable or not?

iii) Find respective serial schedule.

b) What is cursor? Explain with syntax and example.

c) Explain two- phase locking protocol.

Q4) Attempt any TWO of the following (Out of THREE) : [2 × 4 = 8]

a) Write a plpgsql function that accepts employee credit out of 100 marks and return grade based on eligibility as-

If credit less than 50= C grade

If credit less than 70= B grade

If credit is above 70= A grade

b) What is schedule? Explain types of schedules.

c) Explain system failure classification.

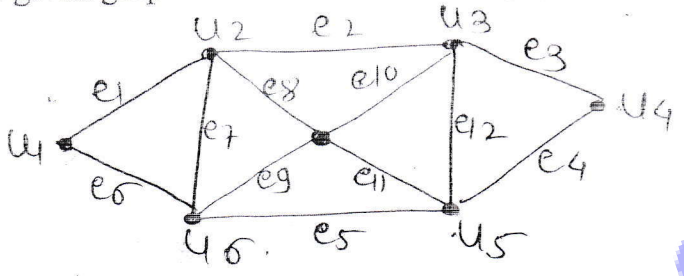
Q5) Attempt any ONE of the following (Out of TWO): [1 × 3 = 3]

a) Short note on stored procedure.

b) Explain ACID properties of transaction.

Q3) Attempt any one of the following. [10]

a) For the given graph G answer the following questions



i) List all cut vertices in G.

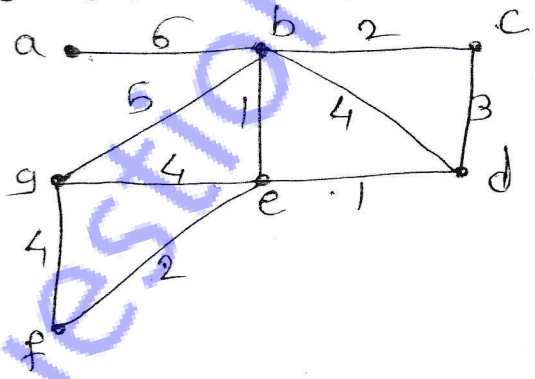
ii) List all cycles in G.

iii) List any two distinct paths from the vertex *a* to vertex *h* in G.

iv) Verify Handshaking lemma for this graph.

v) Minimal degree of graph G.

b) i) Use Kruskal's algorithm to find a minimum spanning tree in the following weighted graph given below.



ii) Give an example of a graph which is Eulerian graph but not Hamiltonian.

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