

Paper Id:

910184

Roll No:

--	--	--	--	--	--	--	--	--	--	--	--

MCA
(SEM-V) THEORY EXAMINATION 2019-20
ADVANCE DATA BASE MANAGEMENT SYASTEM

Time: 3 Hours**Total Marks: 100**

- Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.
 2. Any special paper specific instruction.

SECTION A

1. Attempt all questions in brief. 2 x 10 = 20

- a. Discuss the semi-join.
- b. Define check point and its impact on database recovery.
- c. What is the granularity?
- d. What is serializability?
- e. Define Orphan Message.
- f. Discuss the cascadeless schedules.
- g. Explain Two-Phase Locking Method.
- h. Define time stamp base protocol.
- i. Explain Issues of recovery and atomicity in distributed Database.
- j. What do you mean by fragmentation?

SECTION B

2. Attempt any three of the following: 10 x 3 = 30

- a. What is deadlock in distributed database system? Explain three algorithm widely used in deadlock detection?
- b. Describe query optimization in distributed database. How is it different from query optimization in a standalone database?
- c. Define a cascadeless schedule and a recoverable schedule. If a schedule is not cascadeless, does it mean 'no recovery is feasible'? Justify.
- d. What is database recovery? Explain the log based recovery technique.
- e. Discuss the following-
 - (i) Three phase commit (3PC) protocol.
 - (ii) Multiple Granularity locking

SECTION C

3. Attempt any two parts of the following: 5 x 2 = 10

- (a) How fault, failure and recovery are related?
- (b) Describe various properties of transaction.
- (c) Explain the 'Thomas' rule.

4. Attempt any one/two part of the following: 10 x 1 = 10

- (a) Explain the concept of conflict serializability. Define Conflicting Instruction and Non- Conflicting Instruction.
- (b) How does recovery manager ensure atomicity of transaction? How does ensure durability?

5. Attempt any one/two part of the following: 10 x 1 = 10

- (a) What are protocols? Explain lock based and time stamp based concurrency protocol with suitable example.
- (b) What do you mean by a lock scheduler? Explain the process of obtaining the lock. Explain the lock table.

Paper Id:

910184

Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

6. Attempt any *one* part of the following: 10 x 1 = 10

- (a) Describe the following in brief:
- (i) State diagram of 2PC.
 - (ii) Eager replication technique.
- (b) Consider the following two transactions.
- T1: read(A);
Read(B);
B=A+B;
Write B;
- T2: write(A);
Read(B);
- Add lock and unlock instruction so that transaction observe two- phase locking protocol. Is it deadlock free?

7. Attempt any *one* part of the following: 10 x 1 = 10

- (a) Explain following:
- (i) Replication technique
 - (ii) Moss concurrency control algorithm.
- (b) Compare the deferred- modification and immediate-modification version of the log-based recovery schemes, in terms of ease of implementation and overhead cost.