Printed Pages: 2 **Sub Code: NBC-012**

Paper Id: | 1 | 9 | 4 | 0 | 1 | 2 | **Roll No.** | | | | | | | | | | |

MCA (Dual Degree)
(SEM VIII) THEORY EXAMINATION 2017-18
ADVANCED DATABASE MANAGEMENT SYSTEM

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

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

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

a. What is Serializable Schedule?
b. Define Transaction. List its ACID properties.
c. Define Cascading Rollback with an example.
d. Define View Serializability.
e. Explain Orphan and Inconsistent messages.
f. Differentiate between Homogenous & Heterogeneous DDBMS.
g. List advantages of Fragmentation in DDBMS.
h. Describe Eager replication techniques.
i. Explain Read Only and Write Only Protocol.
j. What is Concurrency Control? Why is it important?

SECTION B

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

a. What are the problems that can arise during concurrent execution of two or more transaction in uncontrolled manner?
b. What is Timestamping? How can it be used for concurrency control?
c. What is the purpose of fragmentation in distributed database? Describe various types of fragmentation methods.
d. What is log file? What does it contain? How can a log file be used for recovery?
e. Describe query optimization in distributed database. How is it different from query optimization in a standalone database?

SECTION C

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

(a) Write in detail about Conflict Serializibilty.
(b) Differentiate between Recoverable & Cascadless Schedules.

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

(a) What is multiple granularity? Explain with an example.
(b) Explain the need of two phase commit protocol. Further describe the two phases.

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

(a) State & Explain the 3PC (Three Phase Commit Protocol) of DDBMS.

(b) What is replication? Differentiate between Full Replication and Partial Replication.

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

(a) Explain the purpose of checkpoint mechanism. What is done during checkpoint?

(b) Explain Log Based Recovery. Differentiate between Deferred Database Modification & Immediate Database Modification.

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

(a) Describe the following Deadlock prevention schemes :

1) Wait-die Scheme
2) Wound- wait Scheme

(b) Write short notes on Distributed Query Processing.