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MCA
(SEM II) THEORY EXAMINATION 2024-25
DATABASE MANAGEMENT SYSTEMS

TIME: 3 HRS

M.MARKS: 70

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt all questions in brief. 2 x 07 = 14

Q no.	Question	CO	Level
a.	Discuss the term Data Independence.	1	K3
b.	What do you mean by composite attributes?	2	K2
c.	Define Primary Key with example.	3	K2
d.	What is the syntax of Insert clause used in SQL?	3	K2
e.	Define the term Functional Dependency.	4	K2
f.	What do you mean by Transaction in databases?	5	K2
g.	Define Time Stamping in terms of concurrency control.	5	K2

SECTION B

2. Attempt any three of the following: 7 x 03 = 21

Q no.	Question	CO	Level
a.	What is three schema architecture? Discuss in detail.	1	K3
b.	Discuss basic operations of Relational Algebra with examples.	3	K5
c.	What do you mean by Normalization? Discuss 1NF, 2NF, and 3NF.	4	K5
d.	Discuss various states of a transaction.	5	K3
e.	What are various problems encountered during concurrency control? Discuss each of them.	5	K3

SECTION C

3. Attempt any one part of the following: 07 x 1 = 07

Q no.	Question	CO	Level
a.	Discuss ER diagram with the help of an example.	2	K5
b.	Explain the terms Generalization, Specialization and Aggregation.	2	K3

4. Attempt any one part of the following: 07 x 1 = 07

a.	What are the various Integrity Constraints? Discuss each of them.	3	K3
b.	Discuss PL/SQL Procedures and Functions with example.	3	K5

5. Attempt any one part of the following: 07 x 1 = 07

a.	Define Minimal Cover for a set of functional dependencies. Discuss with the help of example.	4	K5
b.	Discuss lossless join with the help of an example.	4	K5

6. Attempt any one part of the following: 07 x 1 = 07

a.	What do you mean by ACID properties of a transaction? Discuss each of them.	5	K3
b.	Write short notes on Testing of serializability.	5	K3

7. Attempt any one part of the following: 07 x 1 = 07

a.	Discuss Locking Techniques for concurrency control.	5	K3
b.	What do you mean by Granularity? Discuss Multiple Granularity.	5	K3