



Paper ID : 261034

Printed Page: 1

Subject Code:BBC402

Roll No:

BCA

(SEM. II) THEORY EXAMINATION 2025-26

DBMS

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.

02 x 7 = 14

Q no.	Question	CO	Level
a.	Define DBMS.	1	K2
b.	What is data independence?	1	K2
c.	Define primary key.	1	K2
d.	What is relational model?	1	K2
e.	Define normalization.	1	K2
f.	What is transaction?	1	K2
g.	Define concurrency control.	1	K2

SECTION B

2. Attempt any *three* of the following:

07 x 3 = 21

Q no.	Question	CO	Level
a.	Explain ER model with key constraints and mapping.	1	K2
b.	Explain relational algebra operations with examples.	1	K2
c.	Explain different normal forms (1NF, 2NF, 3NF).	1	K2
d.	Explain deadlock detection and recovery methods.	1	K2
e.	Explain locking techniques in concurrency control.	1	K2

SECTION C

3. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain database system architecture and its components.	1	K2
b.	Draw ER diagram for student-course database and convert into tables.	1	K2

4. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Write SQL queries: Create table, Insert values, and Select records.	1	K2
b.	Explain joins and aggregate functions with examples.	1	K2



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5. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain BCNF with suitable example.	1	K2
b.	Explain functional dependency and lossless join decomposition.	1	K2

6. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain serializability and types of schedules.	1	K2
b.	Explain log-based recovery and checkpoints.	1	K2

7. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain timestamp based concurrency control.	1	K2
b.	Explain multiversion concurrency control and validation protocol.	1	K2