NOV - DEC 2025

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SEAT No. :

PE4190

[Total No. of Pages : 2

[6554]-1003

M.C.A. - I (Management)

ADB 503 MJ-IT-13 : ADVANCED DBMS

(2024 Pattern) (Semester - I)

Time : 2½ Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

Q1) A university registrar's office maintaining data about the following entities; Course, including number, title, Credits, Syllabus and prerequesite Course offering including course number,year, semester section number, instructor, timming and calssroom. Students including student-id, name and program and instruction, including identification number, name, department and title. Further the enrollment of student in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled.

a) Construct the E-R Diagram for following case study [7]

OR

Design the normalized database upto 3NF using above case study (Described it structured and corytramb) [7]

b) Attempt any one. [3]

i) What is data independence with its types?

ii) Explain specialization with example.

Q2) a) Explain the term transaction with ACID properties. [5]

b) Explain lock based pratical with example. [5]

OR

c) What is deadlock? Explain 4 necessary conditrory. [5]

d) What is Schedule? Explain its types. [5]

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Q3) a) Why is recovery needed in database? Explain any one of based recovery technique with example. **[5]**

b) What type of encryption is used by public key infrastructure of by digital certificates? **[5]**

OR

c) Explain shadow paging in details. **[5]**

d) Explain Database security in DBMS and it importance. **[5]**

Q4) a) Explain Inter operational and Intra operational parallelism its details. **[5]**

b) Explain 2PC comit practical in DDBMS with example. **[5]**

OR

c) Explain the following term fragmentation and Replication inDDBMS. **[5]**

d) How Load balancing is active in parallel Database. **[5]**

Q5) Attempt any two. **[10]**

a) Explain the features of NOSQL and MongoDB.

b) What is firebase and its uses.

c) Employee (Eid, name, DOJ, Skill)
Dept (Did, Name, Location)
Relation between Employee and Department in many to many.
Solve the following queries using above database.

i) Display all employee who join before 31-Dec-2023

ii) Display employee whoes name end with "Kar"
e.g Sudhakar, Dinkar etc.

iii) Display employee name along with depatname.

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