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Dr. D. Y. Patil Institute of Management & Entrepreneur Development ★ LIBRARY

Total No. of Questions : 5]

SEAT No. :

PF5635

[Total No. of Pages : 2

[6651]-3

M.C.A. - I

ADB 503 MJ : 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) Case Study : **[7]**

a) A university registrar's office maintains data about the following entities :

i) Courses, including number, title, credits, syllabus and prerequisites;

ii) Course offerings, including course number, year, semester, section number, instruction(s), timings and classroom.

iii) Students, including student-id, name and program.

iv) Instructors including identification number, name, department and little. Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled.

Draw clean E-R diagram for the case study.

OR

Normalize the database with its structure and constraint for the above case study upto 3 NF. **[7]**

b) Attempt any one : **[3]**

i) Explain referential integrity constraints (any 3).

ii) Explain schemes and instances.

Q2) a) Explain term of transaction with example. **[5]**

b) Explain log based recovery techniques. **[5]**

OR

c) Explain concurrency problems in concurrency control. **[5]**

d) Explain Deadlock in DBMS with example. **[5]**

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Q3) a) Explain check point concept with example. **[5]**

b) Explain types of access control. **[5]**

OR

c) Explain failure classification in details. **[5]**

d) Write encryption with types. **[5]**

Q4) a) Explain distributed DBMS characteristics. **[5]**

b) Explain parallel database architecture. **[5]**

OR

c) Explain homogeneous & heterogenous database. **[5]**

d) Explain 2PC protocol in detail. **[5]**

Q5) Attempt any two :

a) Explain NOSQL with its types. **[5]**

b) Introduction to MongoDB database. **[5]**

c) Write the syntax of DML commands (any three) **[5]**



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