Roll No. .....

Total No. of Questions : 09] [Total No. of Pages : 02

Paper ID [B0113]

(Please fill this Paper ID in OMR Sheet)

MCA (Sem. - 3rd)

RELATIONAL DATA BASE MANAGEMENT SYSTEM - I (MCA - 304)

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Attempt any one question from each Sections **A, B, C & D.**
2) Section - E is **Compulsory.**

Section - A

(1 × 10 = 10)

Q1) What is database? Explain characteristics of database systems.

Q2) Explain the different steps to design the distributed systems

Section - B

(1 × 10 = 10)

Q3) Draw an E-R diagram for the company database by considering all requirements. Explain types of attributes and structural constraints from this example.

Q4) What are relational database systems? Explain all constraints and interfaces of the relational database systems.

Section - C

(1 × 10 = 10)

Q5) What is relational algebra? Explain all the types of JOIN operations in relational algebra.

Q6) What are different types of anomalies in database? How we can design the best relational database?

Section - D

(1 × 10 = 10)

Q7) Explain different locking techniques in concurrency control.

Q8) What is the need of database recovery? Explain the difference between immediate update and deferred update technique.

Section - E

(10 × 2 = 20)

Q9)

a) What is the difference between primary key and candidate key?

b) What is the difference between logical data independence and physical data independence?

c) What is the difference between database and a table?

d) What is strong entity?

e) Describe AGGREGATE FUNCTION operator in relational algebra.

f) What is the difference between domain and tuple relational calculus?

g) What is join dependency?

h) What is the need of concurrency control?

i) Describe the difference between ALTER and UPDATE command.

j) What are different accidental security threats?