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MCA (Sem. - 3rd)

RELATIONAL DATA BASE MANAGEMENT SYSTEM - I

SUBJECT CODE : MCA - 304(N2)

Paper ID : [B0113]

[Note : Please fill subject code and paper ID on OMR]

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**.
3) Use of Non-programmable **Scientific Calculator** is allowed.

Section - A

(1 x 10 = 10)

Q1) What is DBMS? Explain the three level architecture of DBMS.

Q2) What are distributed systems? Explain their advantages.

Section - B

(1 x 10 = 10)

Q3) What is entity relationship model? Explain different constraints in E-R model.

Q4) What are object relational models? Compare OOD and ORD.

Section - C

(1 x 10 = 10)

Q5) What are set operations of relational algebra? Explain with examples.

Q6) What is the need of normalization? Explain all normal forms based on functional dependency.

Section - D

(1 x 10 = 10)

Q7) What is the need of concurrency control? Explain different locking techniques.

Q8) Explain different recovery techniques with their advantages and disadvantages.

Section - E

(10 x 2 = 20)

Q9)

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

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

c) What is the difference between multivalued and composite attributes?

d) What is weak entity?

e) Describe DIVISION operator in relational algebra.

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

g) What is the difference between fully functional dependency and partially dependency?

h) What is the need of database audit?

i) Describe the advantages of shadow paging recovery technique.

j) What are different security threats?