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B.Tech. (Sem. - 5th)

DATA BASE MANAGEMENT SYSTEMS

SUBJECT CODE : CS - 305

Paper ID : [A0466]

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

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) What are the elements of a database?
- b) Why do we need a database?
- c) List two drawbacks of E-R model.
- d) List two uses of relational algebra.
- e) What is SQL?
- f) What is normalization?
- g) What is data tampering?
- h) What is concurrency control?
- i) Why are backups important?
- j) What is shadowing?

Section - B

(4 × 5 = 20)

Q2) Explain the functions of a DBMS in brief.

Q3) What are the features of the external database level? Explain in brief.

Q4) What are the components of an E-R model? Explain in brief.

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Q5) Explain the second normal form (2NF) with suitable example.

Q6) Differentiate between tuple calculus and domain calculus.

Section - C

(2 × 10 = 20)

Q7) What are the different arithmetic operators in SQL? Explain with examples.

Q8) Explain the various database recovery techniques with examples.

Q9) Describe the locking techniques for concurrency control with suitable examples.

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