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B.Sc.(CS) (2013 & Onwards) (Sem.–3)

DATABASE MANAGEMENT SYSTEMS

Subject Code : BCS-306

M.Code : 71778

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.**

SECTION-A

1. Answer briefly :

(a) List various limitations of file oriented approach.

(b) What is conceptual level of the database?

(c) What are various types of join operations?

(d) What are various database recovery techniques?

(e) What is use of 2^{nd} normal form?

(f) Define Degree and cardinality.

(g) What are integrity constraints?

(h) Define Selection and projection operations.

(i) Differentiate relational algebra and relational calculus.

(j) Compare and contrast centralized and distributed database.

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SECTION-B

2. What is database system? Discuss various merits and demerits of database system over file processing system.

3. Compare and contrast hierarchical, network and relational data models.

4. What are various threats to the database security? Explain how data can be protected?

5. What are concurrent transactions? Explain how concurrency is controlled in database system?

6. Define Normalization. Write and explain the working of BCNF, 4^{th} and 5^{th} normal forms. Give example to support your answer.

7. Write notes on the following :

   (a) Significance of ER model

   (b) Structure of distributed database

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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