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**SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS,
FEROZEPUR**

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Total number of pages: [2]

Total number of questions: 06

B-Tech. CSE/ 5th Sem

Data Base Management System

Subject Code: BTCS-502A (RP)

**Paper ID: M/18
(2015 batch)**

Time allowed: 3 Hrs

Max Marks: 60

Important Instructions:

- All questions are compulsory
- Assume any missing data

Part-A (2×10)

Q1) Answer in brief:

- (a) Define Data Independence?
- (b) Differentiate between Strong Entity set and Weak Entity Set?
- (c) What is use of Relational Model in DBMS?
- (d) Define Validations?
- (e) What are different types of threats occur in Database Systems?
- (f) Explain Lost update problem?
- (g) Explain ACID properties of Transaction?
- (h) Differentiate between BCNF and 3rd NF?
- (i) What is Query Processing?
- (j) Differentiate between GRANT and REVOKE?

Part-B (8×5)

Q2) What are advantages and disadvantages of DBMS? Explain 3-tier architecture of Data base systems in detail? (CO1)

OR

What is E-R Diagram? Explain conceptual database design with E-R Model? Also Explain various symbols used in E-R Diagram? (CO1)

Q3) What is Relational Model? Differentiate between Relational Algebra and Relational Calculus? (CO2)

OR

Differentiate between Strong Entity Set and Weak Entity set? Explain various Integrity Constraints used in SQL? Also write DDL, DML, TCL commands used in SQL? (CO2)

Q4) What is Concurrency Control? Explain different types of locks used in Concurrency Control with example? (CO3)

OR

What is Transaction Management? Explain various stages used in Transaction process in detail? (CO3)

Q5) Differentiate between Internal Fragmentation and External Fragmentation? Explain allocation and replication techniques for Distributed Database Design (CO4)

OR

What is Normalization? Explain various normal forms used in Database Design with examples? (CO4)

Q6) What are different types of failures occur in database systems? Explain various database recovery techniques in detail? (CO5)

OR

What is Digital Signature? Explain various security mechanisms used in Distributed Database systems? (CO5)
