SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]   Total number of pages:[2]

Total number of questions: 06

B-Tech. CSE/ 5th Sem

Relational Data Base Management System-I

Subject Code: BTCS-502

Paper ID: _____

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 B-trees?
(b) Differentiate between Strong Entity set and Weak Entity Set?
(c) What are different advantages of DBMS?
(d) Define ACID properties of transaction?
(e) What is use of Firewall?
(f) Explain Lost update problem?
(g) What are different types of Cursor?
(h) Differentiate between BCNF and 3rd NF?
(i) Explain Authentication and Authorization with examples?
(j) Define Encryptions and Digital Signature?

Part-B (8×5)

Q2) What is an E-R Diagram? Explain various symbols used in E-R Diagram?

(CO1)

OR

Explain 3-tier architecture of Data base systems in detail?   (CO1)

Q3) What is Hashing? Differentiate between Cluster index and Sparse Index?

(CO2)

OR

Describe fixed length and variable length records? Explain various storage

structures techniques used for File Organization?   (CO2)

Q4) What is Relational Model? Differentiate between Relational Algebra and Relational Calculus? **(CO3)**

OR

What are various Integrity Constraints used in SQL? Explain various DDL, DML, DCL and TCL commands used in SQL? **(CO3)**

Q5) What is Normalization? Explain various normal forms used in Database Design with examples? **(CO4)**

OR

What is Transaction Management? Explain ACID properties of Transaction in detail? **(CO4)**

Q6) What is Concurrency Control? Explain different types of locks used in Concurrency Control with example? **(CO5)**

OR

What are various types of threats occur in Database systems? How Firewalls are used in Database Security? Explain Bell LaPa dula Model in detail? **(CO5)**

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