B. Tech Degree V Semester Examination November 2010

CS/IT 505 DATABASE MANAGEMENT SYSTEMS
(2006 Scheme)

Time : 3 Hours   Maximum Marks : 100

PART A
(Answer all questions)

(8 x 5 =40)

I.   (a)   Explain the function of database administrator.

(b)   Explain Data Independence.

(c)   Differentiate between spanned and unspanned records.

(d)   Explain Heap files.

(e)   What is a view in SRL? Explain how a view can be created and updated.

(f)   Explain Referential Integrity using examples.

(g)   Explain ACID properties of a transaction.

(h)   Explain shadow paging recovery technique.

PART B

(4 x 15 = 60)

II.   (a)   Explain Database System Architecture using a neat diagram.   (10)
(b)   What is data model? Explain any three data models.   (5)

OR

III.   (a)   Explain the concept of specialization and generalization using examples.   (7)
(b)   A COMPANY database keeps track of employees, departments and projects. The company has a number of departments, each with unique name, number and a manager. Each department controls a number of projects with name, number and a starting date. Each employee has a unique ID, name, address and birth date. An employee is assigned to a single department but works on several projects. Construct an ER diagram for the COMPANY database.   (8)

IV.   (a)   Explain Internal Hashing Techniques.   (8)
(b)   Explain External Hashing Techniques.   (7)

OR

V.   (a)   What are the types of single level ordered Index?   (10)
(b)   Explain Multilevel Indexing.   (5)

VI.   (a)   Explain Aggregate Functions in SRL.   (7)
(b)   Explain any Four Relational algebra operations using examples.   (8)

OR

VII.   (a)   Describe 1NF, 2NF, 3NF with suitable examples.   (10)
(b)   Explain Boyce Codd Normal Form.   (5)

VIII.   (a)   Explain two phase locking protocol using examples.   (10)
(b)   Explain log based recovery technique.   (5)

OR

IX.   (a)   Explain Timestamp Ordering Algorithm for concurrency control.   (10)
(b)   Explain the characteristic of data warehouses.   (5)

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