(CSE/IT 315)

III/IV B.Tech. DEGREE EXAMINATION,
OCTOBER 2006.

First Semester

DATABASE MANAGEMENT SYSTEMS

Time : Three hours Maximum : 70 marks

Answer Question No. 1 is compulsory. (1 × 14 = 14)

Answer ONE question from each Unit. (4 × 14 = 56)

All questions carry equal marks.

1. (a) What is transaction?

(b) What is integrity constraint?

(c) What is functional dependency?

(d) What is normalization?

(e) What is data model? and mention few examples.

(f) List all the data types in SQL.

(g) What is data redundancy and how to overcome it?

(h) Write about naive users.

(i) What is weak entity set and give and give an example?

(j) Define composite attribute. Give example.

(k) Define candidate key and give example.

(l) What is DBMS? Explain advantages of DBMS.

(m) What is Trigger?

(n) Define Atomicity.

UNIT I

2. (a) What are the functions of database administrator? (7)

(b) Draw the architecture of database system and explain about various components. (7)

Or

(c) List the significant differences between file-processing system and a database management system. (7)

(d) Explain various database users. (7)

UNIT II

3. (a) Explain about various mapping cardinalities. (5)

(b) Draw an E-R diagram with ternary relationship and with a weak entity set. (9)

Or

(c) Consider the following schema, the primary keys are underlines :

Sailors (sailor-id, sailor-name, sailor-rating, age)

Boats (boat-id, boat-name, boat-color)

Reserves (sailor-id, boat-id, day)

Write the queries in SQL for the following :

(i) Find the names of sailors who have reserved at least one boat.

(ii) Find the ages of sailors whose names begin and end with 'c' and has atleast four characters.

(iii) Find the names of sailors who have reserved a blue or a yellow boat.

(iv) Find the names of sailors who have reserved both a blue and a yellow boat.

(v) Find the names of all sailors who have reserved blue boats but not yellow boats. (14)

UNIT III

4. (a) What is normalization? Explain 1 NF, 2 NF, 3 NF with suitable examples. (7)

(b) Show that if a relation is in BCNF, then it is also in 3 NF. (7)

Or

(c) How are relational DBMS Catalogs usually implemented? (7)

(d) Explain multivalued dependencies with examples. (7)

UNIT IV

5. (a) Write short notes on the following :

(i) Two-phase locking protocol. (3)

(ii) Strict Two-phase locking protocol. (2)

(iii) Rigorous Two-phase locking protocol. (2)

(b) Explain Time stamp based protocol, with an example. (7)

Or

(c) Explain conflict and view serializability with example. (7 + 7)
