Roll No. ....

CS–503(N)

B. E. (Fifth Semester) EXAMINATION, June, 2011

(Computer Science & Engg. Branch)

DATABASE MANAGEMENT SYSTEM

[CS–503(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt *one* question from each Unit. All questions carry equal marks.

Unit—I

1. Discuss overall system structure of a database management system. Explain the difference between logical and physical schema. What is view level in this context ?

Or

2. Construct an ER diagram for a hospital with a set of patients and a set of doctors. Associate with each patient a log of the various tests and examination conducted. Also show the tables for various entities with attributes.

Unit—II

3. Explain the following keys with suitable example :

(i) Primary key

P. T. O.

(ii) Secondary key

(iii) Foreign key

(iv) Super key

Explain referential integrity and integrity constraints.

Or

4. What is SQL ? Which data models implements this language ? Write a SQL server program segment to write rules and defaults. How can you connect and disconnect them to a database ?

Unit—III

5. What do you mean by normalization ? Illustrate BCNF with suitable example. How BCNF is better than 3 NF ? Justify your answer. Also explain functional dependency.

Or

6. Suppose that we decompose the scheme $R = (A, B, C, D, E)$ into (A, B, C) and (A, D, E). Show that this decomposition is a lossless join decomposition if the following functional dependencies hold :

$$A \to BC, CD \to E, B \to D$$

Show that this decomposition is dependency preserving decomposition.

Unit—IV

7. What is a transaction in database ? Discuss the property of transaction along with various states of transaction. Briefly discuss purpose of log file in database recovery.

Or

8. What is concurrent schedule ? What is conflict serializability in this context ? What is time-stamp based protocol in context of concurrent schedules ?

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Unit – V

9. Write short notes on the following :
   (i) Distributed database
   (ii) Triggers

Or

10. Explain the following (any *two*) :
    (i) RDBMS
    (ii) ANSI SQL
    (iii) ORACLE Exception handling mechanism