

Roll No

CS - 503

B.E. V Semester

Examination, December 2015

Database Management System

Time : Three Hours

Maximum Marks : 70

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
 ii) All parts of each question are to be attempted at one place.
 iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.
 iv) Except numericals, Derivation, Design and Drawing etc.

Unit-I

1. a) Why is the hierarchical data model considered inflexible?
- b) Differentiate the term data, information and knowledge.
- c) What is weak entity set and strong entity set?
- d) Discuss the three level architecture of DBMS. Explain how does it lead to data independence.

OR

Construct an ER-Diagram for hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.

Unit-II

2. a) Differentiate between Relational calculus and relational algebra.
- b) State two integrity rules.
- c) What are the various types of inner join operators? Why theta join is required?

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- d) Explain the characteristics of relation. Also explain the relational databases.

OR

What are DDL, DML and DCL? Differentiate among the three and give one command for each of these.

Unit-III

3. a) What do you mean by the terms loss-less decomposition?
- b) What is multivalued dependencies?
- c) Write a brief notes on trival and non trival dependencies.
- d) Prove that a relation which is in 4NF must be in BCNF.

OR

What is normalization? Justify the need for normalization with examples.

Unit-IV

4. a) What is web databases?
- b) Compare OODBMS and DBMS.
- c) What are challenges in designing object-oriented data bases? Discuss.
- d) What problems occur in the database when transactions do not satisfy ACID properties? Explain explicitly using suitable examples.

OR

Explain the significance of multimedia and mobile database. Also give two examples for each.

Unit-V

5. a) What is inline queries? Where it is used?
- b) How the "GROUP BY" clause works?
- c) Differentiate between Implicit and Explicit cursor.
- d) What is Triggers? Write various types of triggers.

OR

What is PL/SQL exception handling and why it is needed?