Roll No .....

IT-403

B.E. IV Semester

Examination, December 2015

Data Base 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 questions 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.

1. a) List any eight applications of DBMS.
   b) What are the advantages of using a DBMS?
   c) Define instance and schema.
   d) What are the features and objectives of DBMS?

   OR

   What are the responsibilities of a DBA? If we assume that the DBA is never interested in running his or her own queries, does the DBA still need to understand query optimization? Why?

2. a) Distinctions among the terms primary key, candidate key.
   b) What is a data model?
   c) Explain the following terms briefly: attribute, domain, entity-relation-ship.
   d) What is E-R model? What are the various symbols used to draw E-R diagram? Draw E-R diagram of the educational organizations.

   OR

   Explain various data Models?

3. a) Define query language.
   b) What is a view in SQL?
   c) Differentiate between inner join and outer join.
   d) Consider the following relations:

   Student(snum: integer, sname: string, major: string, level: string, age: integer)

   Class(name:string,meetsat:string,room:string, fid:integer)

   Enrolled(snum:integer, cname:string)

   Faculty(fid:integer, fname:string, deptid:integer)

   The meaning of these relations is straightforward: for example, Enrolled has one record per student-class pair such that the student is enrolled in the class.

   Write the following queries in SQL.

   i) Find the names of all classes that either meet in room R128 or have five or more students enrolled.

   ii) Find the names of all students who are enrolled in two classes that meet at the same time.

   OR

   Define the following term in context of SQL

   (i) Views (ii) Join (iii) IN

4. a) What are the uses of functional dependencies?
   b) What is first normal form?
   c) Define canonical cover.
   d) Explain BCNF and 3NF and 5NF with suitable example.

   OR

   Define multivalued dependency. What do you understand by trivial multivalued dependency?

5. a) What does database security refer to?
   b) What are the properties of transaction?
   c) What is a heterogeneous distributed database?
   d) Explain Serializability. Give an example of a strict schedule that is not serializable.

   OR

   Discuss the concept of object oriented data base system.

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