Mid Semester Examination – 2017

School of Computer Engineering

KIIT University

Subject: Database Management System

Time: 2 Hrs Full Marks: 25

(Answer any Five Questions including Question No. 1)

1. Answer the following questions briefly. [1 X 5]
   a. Differentiate between logical data independence and physical data independence.
   b. What is aggregation in ER model? Illustrate with example.
   c. Explain self-referential integrity constraint with suitable example.
   d. Discuss the requirements of strong entity set and weak entity set.
   e. What is the difference between a character field that contains a NULL value and a character field that contains a single blank space?

2.
   a. Differentiate between database systems and file system along with their advantages and disadvantages. [3]
   b. Discuss the roles and responsibility of DBA. [2]

3.
   a. Draw the entity-relationship diagram for the Soccer game as given below: [3]

   There are many teams playing matches among themselves. In each match, there is a host team and a guest team. The match takes place in the stadium of host team. Each team has an unique TID along with Tname, Home_stadium and Home_city as attributes. Each team has many players and each player belongs to only one team. Each player is uniquely identified by PID and has Pname, Birth_date, Debut_year and Jersy_no. For each match, we are interested to record the date of play, game result, players participate, number of red cards issued, number of yellow cards issued, substitute players' list and the times of substitutions. Each match has exactly three referees. Out of these referees, one referee is the main referee and the other two are assistant referees. Each referee has as RID (unique), Rname, Birth_date, Years_of_experience.

   Make necessary assumptions.

   b. Convert the above ER diagram into relational schemas and specify the primary keys and foreign keys. [2]

4.
   a. Discuss the advantages and disadvantages of Entity-Relationship model and Relational model. Also, justify the statement: "Normally, ER diagram is constructed before the construction of Relational schema". [3]
   b. What is the requirements for different types of attributes? Explain with appropriate examples. [2]

5. Employee (empno, ename, dept, doj, mob)

   Customer (cno, cname, city, mobno, interest)

   Deal (empno, cno, date, category)

   a. Construct the above tables using SQL. [2]

   b. Solve the following queries using SQL: [1 X 3]

      i. Display the details employee who are of minimum 20 years old.

      ii. Find the customer details whose name contains 'a' and having interest in sports.

      iii. Display the empno and cno of the deals done on 1st January 2017 in Fooding category.

6.

   a. Discuss the steps for converting a ternary relationship set to binary relationship sets in ER modelling with suitable example. [3]

   b. What is a unique identifier of an entity set? Is it possible for there to be more than one unique identifier for an entity set? [2]

7. Write Short notes of any two of the following: [2.5 X 2]

   a. Database constraints

   b. Data Dictionary

   c. Generalization/Specialization

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