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T.E. (Computer Engg.) (A. I. D. S.) (Insem)
DATABASE MANAGEMENT SYSTEMS
(2019 Pattern) (Semester - I) (310241)

Time : 1 Hour]   *[Max. Marks : 30*

Instructions to the candidates :

    1) Answer Q.1 or Q.2, Q.3 or Q.4.

    2) Neat diagrams must be drawn wherever necessary.

    3) Figures to the right indicate full marks.

    4) Assume suitable data, if necessary.

Q1) a)   Draw the neat diagram of Database System Structure and explain its components in detail.   **[8]**

    b)   Construct an ER Diagram for Company having following details :   **[7]**

        •   Company organized into DEPARTMENT. Each department has unique name and a particular employee who manages the department. Start date for the manager is recorded. Department may have several locations.

        •   A department controls a number of PROJECT. Projects have a unique name, number and a single location.

        •   Company's EMPLOYEE name, ssno, address, salary, sex and birth date are recorded. An employee is assigned to one department, but may work for several projects (not necessarily controlled by her dept). Number of hours/week an employee works on each project is recorded; The immediate supervisor for the employee.

        •   Employee's DEPENDENT are tracked for health insurance purposes (dependent name, birthdate, relationship to employee).

    Identify the relationship among the entities along with the mapping cardinalities, keys in the E.R. diagram.

OR

P.T.O.

Q2) a) A post office has few postmen who go every day to distribute letter. Every morning post office receives a large number of registered letters. The post office intends to create a database to keep track of these letters. **[8]**

   i) Every letter has a sender, an origin post office from where it was sent, a destination post office to which it is to be sent, a date of registration, date of arrival at destination post office, receiver and a status.

   ii) Every sender has a name, an address.

   iii) Every receiver has a name and an address.

   iv) Every postman has a designated area where he delivers letters.

   v) The area consists of a set of streets under the jurisdiction of the post office.

   vi) Every street consists of a set of buildings.

   vii) Every building has number and may be name. It may be housing more than one family.

   viii) The status of the letter can be not yet taken for delivery, delivered, address not available, address not known, addressee did not accept the letter, redirected to the address of address and sent to the sender.

Identify the relationship among the entities along with the mapping cardinalities, keys in the E.R. diagram. Construct appropriate tables for E-R diagram designed with above requirements.

   b) List the main characteristics of the database approach and explain how it differs from the traditional file system. **[7]**

Q3) a) Consider the following schemas **[6]**
   Emp(Emp_no, Emp_name, Dept_no)
   Dept(Dept_no, Dept_name)
   Address(Dept_name, Dept_location)
   Write SQL queries for the following

   i) Display the location of department where employee 'Ram' is working.

   ii) Create a view to store total no of employees working in each department in ascending order.

   iii) Find the name of the department in which no employee is working.

   b) What is view and how to create it? Can you update view? If yes, how? If not, why not? **[5]**

   c) Consider following schema
   Student_fee_details (rollno, name, fee_deposited, date)
   Write a trigger to preserve old values of student fee details before updating in the table. **[4]**

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Q4) a) Explain the concept of Referential and Entity Integrity constraint with example. **[5]**

b) Write a PL/SQL block of code which accepts the rollno from user. The attendance of rollno entered by user will be checked in student_attendance(RollNo, Attendance) table and display on the screen. **[5]**

c) What is the importance of creating constraints on the table? Explain with example any 4 constraints that can be specified when a database table is created. **[5]**

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