Total No. of Questions : 6]

SEAT No. :

P5088

[Total No. of Pages : 3

TE/Insem.-637
T.E. (Computer Engineering) (Semester-I)
DATABASE MANAGEMENT SYSTEMS
(2015 Pattern)

Time : 1 Hour] *[Maximum Marks : 30*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data, if necessary.*

Q1) A university registrar's office maintains data about the following entities: **10]**

- courses, including number, title, credits, syllabus, and prerequisites;
- course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom;
- Students, including student-id, name, and program; and
- instructors, including identification number, name, department and title.

Further, the enrollment of students in courses and grades awarded to students in each course the are enrolled for must be appropriately modeled.

i) Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.

ii) Construct appropriate tables for E-R diagram designed with above requirements.

OR

Q2) a) A weak entity set can always be made into strong entity set by adding to its attributes; the primary key attributes of its identifying entity set. Outline what sort of redundancy will result if we do so while converting into tables. **[5]**

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b) Explain with example what is physical data independence. Also explain its importance. **[5]**

Q3) a) Consider the following database schema: **[5]**

Physician (reg_no,name,tel_ no, city)

Patient(p_name,street,city)

visit(p_name,reg_no,date_of_visit, fee)

Write SQL queries for following requirements (any 2)

i) Find the name and city of patients who visited a physician on 13 July 2017.

ii) Get the name of the physician and the total no. of patients visited him

iii) Get the details of date wise fees collected at clinic.

b) Write short note on Embedded SQL along with its applications. **[5]**

OR

Q4) a) What is index created on table column? How performance of SELECT query is improved if index is created on table? **[5]**

b) Write P1/SQL block of code which accepts the roll no. from user, the attendance of roll no entered by user will be checked in stud_att (Roll_no, Att) table. Attendance of Roll no entered is displayed on screen. **[5]**

Q5) a) Explain what is normalization? Explain with example requirements of Third Normal Form. **[5]**

b) Explain with example the concept of referential integrity constraint (e.g. Foreign key in SQL). Also discuss the situations when referential integrity constraint is getting violated by Insert, Update and delete operations on table. **[5]**

OR

Q6) a) Explain different features of good relational database design. **[5]**

b) One of the rule designed by codd's for good relational database management system is integrity independence, which states that all integrity constraints can be independently modified without the need of any change in the application. Justify the significance of rule in relational database management system. **[5]**

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