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Total No. of Questions : 09]

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B.Tech. (Sem. - 6th)

RELATIONAL DATABASE MANAGEMENT SYSTEM - II

SUBJECT CODE : CS - 302

Paper ID : [A0470]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.
3) Attempt any **Two** questions from Section - C.

Section - A

(1) *(10 × 2 = 20)*

a) What is the building block of a relational database?
b) Which are the different recovery techniques?
c) What is the operator precedence in Transact-SQL?
d) What are the advantages of packages?
e) How many types of trigger are used in SQL? Explain each type.
f) What is data redundancy?
g) What is a foreign key?
h) What is the use of cursors in PL/SQL?
i) What are views and what is advantage of creating a view?
j) What is the difference between PLSQL and SQL?

Section - B

(4 × 5 = 20)

(2) Write a PL/SQL code to check even or odd of a number.

(3) What are the operations possible on Relational Database?

(4) What is a cursor? How is it created?

(5) Design two trigger for the institute database. Make your own assumptions about the database and need for trigger.

Q6) Consider a relation scheme of the relation **SCHEDULE** shown below. What is the highest normal form of the relation? What type of data anomalies does this relation have? Give an example of type of data anomalies that a relation may experience.

SCHEDULE (Student-ID, Class-No, Student-name, Student-Major, Class-time, Building-room, Instructor).

Assume the following functional dependencies

Student-ID → Student-Name Student-ID → Student-Major Class-No → Class-Time

Class-No → Building-Room Class-No → Instructor

Section - C

(2 × 10 = 20)

Q7) (a) Create a local procedure to calculate the simple interest by passing the values of principle, rate and time.

(b) Consider a relation **scheme** (Sales-Transaction-No, Item-No, Item-Price, Item-Quantity-Sold, Seller, Seller-District) and the functional dependencies shown below. What is the key of the relation? Transform this relation in to 3NF.

Sales-Transaction-No, Item-No → Item-Quantity-Sold Item-No → Item-Price

Sales-Transaction-No → Seller Seller → Seller-District

Q8) (a) Write an SQL PLUS code to calculate the telephone bill of an employee and store the result in a database.

(b) What are the various security requirement of a database? Explain with example.

Q9) (a) What is a SQL server? Explain the features of SQL server.

(b) For the following relations answer the queries using **RELATIONAL ALGEBRA**.

Members (mid, name, desig, age)

Books (Bid, Btitle, BAuthor, Bpublisher, Bprice)

Reserves (mid, Bid, date)

Where Bid is book identification, Btitle is Book title, Bpublisher is book publisher, Bprice is Book price, mid is members identification, and desig is designation. **[Please make and mention necessary assumptions]**.

(i) List the title of books reserved by professors older than 45 years.

(ii) Find ids of members who have not reserved books costing more than Rs.500.

(iii) Find the author and title of books reserved on 27-May-2007.

(iv) Find the names of members who have reserved all books.