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DATABASE MANAGEMENT SYSTEM

[As per Choice Based Credit System (CBCS) scheme]

(Effective from the academic year 2017 -2018)

SEMESTER – V

Subject Code **17CS53**

IA Marks **40**

Number of Lecture Hours/Week **04**

Exam Marks **60**

Module 3

1. Consider the COMPANY DATABASE

EMPLOYEE (Fname, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, super-ssn, Dno)

DEPARTMENT (Dname, Dnumber, Mgr_ssn, Mgr_st_date)

DEPART_LOCATIONS (Dnumber, Dlocation)

PROJECT (Pname, Pnumber, Plocation, Dnum)

WORKS_ON (Essn, Pno, Hours)

DEPENDENT (Essn, Dependent_name, Sex, Bdate, Relationship).

Specify the following queries in SQL on the database schema given above:

- a. For every project located in Stafford, list the project number the controlling department number and the department manager's last name, address and birth date. (4-Marks) (5-Question)
- b. List the names of all employees who have a dependent with the same first name as themselves. (2-Marks) (5-Question)
- c. For each project, list the project name and the total hours per week (by all employees) spent on that project.

- d. Retrieve the name of each employee who works on all the projects controlled by 'Research' department. (6-Marks) (5-Question) (Dec.2017/Jan.2018)
2. Define Stored Procedure, Explain the creating and calling of stored procedure with suitable example. (8-Marks) (6a) (Dec.2017/Jan.2018)
3. Explain the Single - tier and Client - Server architecture, with a neat diagram. (8-Marks) (6b) (Dec.2017/Jan.2018)
4. Discuss how each of the following constructs is used in SQL and discuss the various options for each construct:
 - i) Nested Queries
 - ii) Aggregate functions
 - iii) Triggers
 - iv) Views and their updatability
 - v) Schema change statements
 - vi) Group by and having clause. (6-Marks) (5a) (June/July 2018)
5. Draw and explain 3 - tier Architecture and technology relevant to each tier. Write the advantages of 3 - tier architecture. (6-Marks) (5b) (June/July 2018)
6. What is CGI? Why was CGI introduced? What are the disadvantage of an architecture using CGI scripts? (4-Marks) (5c) (June/July 2018)
7. What is Dynamic SQL and how is it different from Embedded SQL? (4-Marks) (6a) (June/July 2018)
8. What is SQL J and hoe is it different from JDBC? (4-Marks) (6b) (June/July 2018)
9. Consider the following company database:
EMP (Name, Ssn, Salary, Superssn, dno)
DEPT (dnum, dname, mgrssn)

DEPT_LOC (dnum, dlocation)

PROJECT (pname, Pnumber, Plocation, dnum)

WORKS_ON (Essn, Pno, Hours)

DEPENDENT (Essn, dept_name, sex)

Write SQL queries for the following:

- i) Retrieve the names of all employee who works in the department that has the employee with the highest salary among all employees.
 - ii) Retrieve the names of employees who make atleast 10,000 more than the employee who is paid the least in the company.
 - iii) A view that has the employee name, supervisor name and employee salary for each employee who works in the 'Research' department.
 - iv) A view that has the project name, controlling department name, number of employees and total hours worked per week on the project for each project with more than one employee working on it. (8-Marks)
(6c) (June/July 2018)
10. How does SQL implement the entity integrity constraints of the relational data model? Explain with an example. (4-Marks) (5a) (Dec.2018/Jan.2019)
11. Discuss:
- i) Shared variables
 - ii) Communication variables. (6-Marks) (5b)
(Dec.2018/Jan.2019)
12. Explain with example in SQL:
- i) Drop command
 - ii) Delete command
 - iii) Update command. (6-Marks) (5c)
(Dec.2018/Jan.2019)

13. With program segment, explain retrieving of tuples with embedded SQL in C. (6-Marks) (6a) (Dec.2018/Jan.2019)

14. Consider the following tables:

WORKS (Pname, Cname, Salary)

LIVES (Pname, Street, City)

LOCATED-IN (Cname, City)

Write the following queries in SQL:

- i) List the names of the people who works for the company 'Wipro' along with the cities they live in.
 - ii) Find the names of the persons who do not work for 'Infosys'.
 - iii) Find the people whose salaries are more than that of all of the 'oracle' employees.
 - iv) Find the persons who works and lives in the same city. (10-Marks) (6b) (Dec.2018/Jan.2019)
15. How is view created and dropped? What are the problems associated with updating views? (8-Marks) (5a) (June-July.2018 | 10-scheme)
16. Write a note on Aggregate functions in SQL with examples. (12-Marks) (5b) (June-July.2018 | 10-scheme)
17. Explain the syntax of insert, delete and update statement in SQL, and give examples for each. (10-Marks) (5a) (Dec.2017/Jan.2018 | 10-scheme)
18. How triggers and assertions are defined in SQL? Explain with an example. (10-Marks) (5b) (Dec.2017/Jan.2018 | 10-scheme)
19. Explain with example, how assertions are defined. (5-Marks) (5a) (Dec.2016/Jan.2017 | 10-scheme)
20. What is a view? Explain how views are created and dropped. (5-Marks) (5b) (Dec.2016/Jan.2017 | 10-scheme)

21. What is a cursor? Explain with examples, retrieving multiple tuples with embedded SQL. (10-Marks) (5c) (Dec.2016/Jan.2017 | 10-scheme)
22. How is view Created and dropped? What problems are associated with updating views? (8-Marks) (5a) (June/July.2017 | 10-scheme)
23. How are triggers and assertions defined in SQL? Explain (6-Marks) (5b) (June/July.2017 | 10-scheme)
24. Explain the concept of Stored procedure in brief. (6-Marks) (5c) (June/July.2017 | 10-scheme)

**ANSWER SCRIP FOR THESE
QUESTIONS WILL BE UPLOADED ASAP**

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