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21UCS308

FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2021 ONLY) REG.NO

NGM COLLEGE (AUTONOMOUS) POLLACHI

END-OF-SEMESTER EXAMINATIONS: DECEMBER-2022

B. Sc-Computer Science (Aided & SF) **MAXIMUM MARKS: 70**

III SEMESTER **TIME: 3 HOURS**

PART III

RELATIONAL DATABASE MANAGEMENT SYSTEM

SECTION – A (10 X1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS
MULTIPLE CHOICE QUESTIONS (K1)

1. In which of the following formats, data is stored in the database management system?
   a) Image b) Text c) Table d) Graph
2.. A ___ is normalized after it has been organized.
   a) Table b) Database c) Row d) Column
3. What is relation in RDBMS?
   a) Table b) Key c) Data Types d) Row
4. How many join types in join condition:_____
   a) 2 b) 3 c) 4 d) 5
5. Life cycle of typical cursor involves _____ steps in SQL Server.
   a) 2 b) 3 c) 4 d) 5

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. What are the various types of relationships in Database? Define them.
7. Define BCNF.
8. Enlist commands of DDL, DML, and DCL.
9. Distinguish between Primary Key and Composite Key.
10. What is Exception handling in PL/SQL?

SECTION – B (5 X 4 = 20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Consider the following schema:
    Suppliers (sid : integer, sname : string, address : string)
    Parts (pid : integer, pname : string, color : string)
    Catalog (sid : integer, pid : integer, cost : real)
    The key fields are underlined and domain of each field is listed after the field name. Write the queries for the following
    1) Find the name of suppliers who supply some red parts
    2) Find the sids of suppliers who supply some red or green parts

(CONTD …. 2)

(OR)

b) Jedi-Teams (master, apprentice)
Jedi(name, side, home-planet)
Government (leader planet, postition)
Inhabitants(specie, planet)
Given a query to find all planetary leaders who are apprentices and use the dark side of the force:
select leader
from Jedi-Teams, Jedi, Government
where apprentice = name and
name = leader and
side = 'dark'
Express this query in terms of relational algebra.

12. a) Given a relation R(P, Q, R, S, T) and Functional Dependency set FD = { PQ → R, S → T}, determine whether the given R is in 2NF? If not convert it into 2 NF.

(OR)

b) Illustrate with example various DDL Commands in SQL.

13. a) Use the products table in the sample database for the demonstration.
products(product_id, product_name, description, standard_cost, list_price, category_id
The following query uses the CASE expression to calculate the discount for each product category i.e., CPU 5%, video card 10%, and other product categories 8%. Construct a PL/SQL function for the same.

(OR)

b) Demonstrate PL/SQL function to create total sales by year. Assume the suitable table for the same.

14. a) Describe in brief PL/SQL Case Statement with example.

(OR)

b) Demonstrate IF-THEN-ELSIF Statement in PL/SQL Syntax with example.

15. a) Elucidate the principle of a cursor with a suitable example.

(OR)

b) Let us now create a row-level trigger for the STUDENT table that would get executed by the DML statement like UPDATE, INSERT or DELETE on that table. The trigger will compute and show the age difference between current and previous values. Demonstrate with example .

SECTION – C (4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS.
(16TH QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS FROM Q.NO: 17 TO 21) (K4) OR (K5)

16. Analyze the pros and cons of Relational Model concept in RDBMS with example.

17. Design ER Diagram for Hospital Management System.

18. Demonstrate 1NF,2NF and 3NF with simple example.

19. Describe the various Aggregate functions in SQL Syntax with example.

20. Discuss various Transaction Control Statements in PL/SQL.

21. Summarize the functions of PL/SQL Packages.