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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2024-25 ONLY)

SUBJECT CODE **24UBC307**

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2025

B.C.A **MAXIMUM MARKS: 75**
SEMESTER: III **TIME : 3 HOURS**

PART – III

RELATIONAL DATABASE MANAGEMENT SYSTEMS AND ORACLE

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS. (K1)

1. What is an instance of a database?
   a. The design of the database
   b. A snapshot of the data in the database at a given time
   c. The name of the database
   d. The relationship among tables
2. Which command is used to change data in a relational database?
   a. SELECT b. RENAME c. FETCH d. UPDATE
3. BCNF is a stronger version of:_____.
   a. First Normal Form b. Second Normal Form c. Third Normal Form d. Fourth Normal Form
4. What type of join returns all rows from both tables when there is a match in either table?
   a. FULL OUTER JOIN b. LEFT JOIN c. RIGHT JOIN d. INNER JOIN
5. **Which control structure is used for decision-making in PL/SQL?**
   a. LOOP b. GOTO c. IF-THEN-ELSE d. CASE ONLY

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

6. Define Data Independence.
7. Define Tuple Relational Calculus.
8. Differentiate Domain Constraint and Referential Integrity.
9. Illustrate the use of the GROUP BY clause with an example.
10. Define Cursor.

SECTION – B (5 X 5 = 25 MARKS)

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

11. a) Compare the characteristics of a File System vs. Database System.

(OR)

b) Construct and interpret an ER diagram for a student-course registration system, clearly indicating entities, attributes, and relationships.

12. a) Compare the tuple relational calculus and domain relational calculus.

(OR)

b) Examine the concept of views.

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13.a) Describe the concept of Functional Dependency in the context of relational databases.

(OR)

b) Apply the concepts of data integrity and data security to a banking database system.

14.a) Illustrate DDL command from a student database that includes student name, date of birth, marks, and department.

(OR)

b) Demonstrate any five SQL Functions

15. a) Apply the concept of a cursor in PL/SQL to display all student names and their marks from a STUDENT table.

(OR)

b) Apply PL/SQL control structures to write a block that checks if a student's mark is above 50. If yes, display "Pass", else display "Fail".

SECTION – C (5 X 8 = 40 MARKS)

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

(K4 (Or) K5)

16.a) Evaluate the effectiveness of using Extended ER Features (like specialization, generalization, and aggregation) in improving database design. Justify your answer with examples.

(OR)

b) Analyze the differences between Hierarchical, Network, and Relational Data Models in terms of data structure, access method, and flexibility. Provide suitable examples.

17.a) Analyze - how extended relational algebra operations such as aggregate functions and outer joins differ from basic relational algebra?

(OR)

b) Discuss the structure of Relational model.

18. a) Summarize First Normal Form and Second Normal Form.

(OR)

b) Discuss the Third Normal Form with suitable example.

19.a) Discuss various set operations with suitable example.

(OR)

b) Summarize all DML operations with suitable example

20. a) Discuss trigger with suitable example.

(OR)

b) Analyze the control structures supported by PL/SQL.

ETHICAL PAPER

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