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## G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

## UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.

(For those admitted in June 2023 and later)



## PROGRAMME AND BRANCH: B.Sc., INFORMATION TECHNOLOGY

| SEM | CATEGORY | COMPONENT | COURSE CODE | COURSE TITLE                          |
|-----|----------|-----------|-------------|---------------------------------------|
| III | PART-III | CORE-5    | U23IT303    | RELATIONAL DATABASE MANAGEMENT SYSTEM |

Date &amp; Session: 09.11.2024 / AN

Time : 3 hours

Maximum: 75 Marks

| Course Outcome | Bloom's K-level | Q. No. | SECTION – A (10 X 1 = 10 Marks)<br>Answer <u>ALL</u> Questions.   |
|----------------|-----------------|--------|---|
| CO1            | K1              | 1.     | The collection of information stored in the database at a particular moment is called an _____ of the database.<br>a) schema<br>b) instance<br>c) abstract<br>d) record   |
| CO1            | K2              | 2.     | Entities are described in a database by a set of _____.<br>a) relationships<br>b) models<br>c) attributes<br>d) constraints   |
| CO2            | K1              | 3.     | An instance of a relation that satisfies all such real-world constraints is called a _____ instance of the relation.<br>a) correct<br>b) legal<br>c) right<br>d) illegal  |
| CO2            | K2              | 4.     | Which relational algebra operation returns a specific set of rows from a relation?<br>a) Union<br>b) Projection<br>c) Selection<br>d) Intersection  |
| CO3            | K1              | 5.     | The result of an arithmetic expression is _____ if any of the input values is null.<br>a) predictable<br>b) unpredictable<br>c) erroneous<br>d) null  |
| CO3            | K2              | 6.     | Which clause is used to state a condition that applies to groups rather than to tuples in SQL queries?<br>a) having<br>b) group by<br>c) select<br>d) order by  |
| CO4            | K1              | 7.     | Identify the clause used to create a local role with a password.<br>a) USING password<br>b) AUTH password<br>c) PWD password<br>d) BY password  |
| CO4            | K2              | 8.     | Which SQL command is used to assign a specific role to users?<br>a) GRANT<br>b) GIVE<br>c) ADD<br>d) ASSIGN   |
| CO5            | K1              | 9.     | In PL/SQL, which keyword is used to define an exception?<br>a) ERROR<br>b) RAISE<br>c) TRY<br>d) EXCEPTION  |
| CO5            | K2              | 10.    | What is the primary difference between functions and procedures in PL/SQL?<br>a) Procedures can return values, while functions cannot<br>b) Functions can return values, while procedures cannot<br>c) Functions can only accept OUT parameters<br>d) Procedures must have parameters, while functions do not |

| Course Outcome | Bloom's K-level | Q. No. | <p align="center"><b>SECTION - B (5 X 5 = 25 Marks)</b><br/> <b>Answer ALL Questions by choosing either (a) or (b)</b></p>  |
|----------------|-----------------|--------|---|
| CO1            | K3              | 11a.   | Explain the different levels of abstraction in the database system.<br><b>(OR)</b>  |
| CO1            | K3              | 11b.   | Write down the advantages of RDBMS.   |
| CO2            | K3              | 12a.   | Build a tuple-relational-calculus expression for the query: "Find all the courses taught in the Fall 2009 semester but not in Spring 2010 semester."<br><b>(OR)</b> |
| CO2            | K3              | 12b.   | Identify the role of Functional Dependencies in decomposing a relation.   |
| CO3            | K4              | 13a.   | Inspect the different types of Integrity constraints in SQL using relevant examples.<br><b>(OR)</b>   |
| CO3            | K4              | 13b.   | Illustrate an Aggregate functions in SQL with an examples.  |
| CO4            | K4              | 14a.   | Analyze the functioning of VARRAY in object relational databases.<br><b>(OR)</b>  |
| CO4            | K4              | 14b.   | Examine the process of password management in databases.  |
| CO5            | K5              | 15a.   | Differentiate between Row-level and Statement-level triggers in PL/SQL.<br><b>(OR)</b>  |
| CO5            | K5              | 15b.   | Evaluate the usage of procedures in PL/SQL.   |

| Course Outcome | Bloom's K-level | Q. No. | <p align="center"><b>SECTION - C (5 X 8 = 40 Marks)</b><br/> <b>Answer ALL Questions choosing either (a) or (b)</b></p>              |
|----------------|-----------------|--------|--|
| CO1            | K3              | 16a.   | Elaborate the concepts of Database Manipulation Language and Database Definition Language.<br><b>(OR)</b>                            |
| CO1            | K3              | 16b.   | Discuss in detail the E-R Model using relevant illustrations and examples.   |
| CO2            | K4              | 17a.   | Analyze the fundamental operations of Relational Algebra with practical examples.<br><b>(OR)</b>                                     |
| CO2            | K4              | 17b.   | Examine how 3NF normalizes the relation with an example.   |
| CO3            | K4              | 18a.   | Illustrate the set operations in SQL with suitable examples.<br><b>(OR)</b>  |
| CO3            | K4              | 18b.   | Infer the reasons for creating a view in SQL with examples.  |
| CO4            | K5              | 19a.   | Justify the usage of nested tables in object-relational databases.<br><b>(OR)</b>  |
| CO4            | K5              | 19b.   | Evaluate the process of creating, revoking, and dropping roles in databases.   |
| CO5            | K5              | 20a.   | "Packages play a crucial role in enhancing modularity, reusability, and maintainability of code in PL/SQL" – Justify.<br><b>(OR)</b> |
| CO5            | K5              | 20b.   | Assess how PL/SQL handles exceptions with examples.  |