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|  | **PES University, Bengaluru**  (Established under Karnataka Act No. 16 of 2013) | | **UE20CS903** |
| **June 2024: END SEMESTER ASSESSMENT (ESA)**  **M TECH DATA SCIENCE AND MACHINE LEARNING\_ SEMESTER I**  **UE20CS903 – Databases & SQL** | | | |
| Time: 3 Hrs | | Answer All Questions | Max Marks: 100 |

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| **INSTRUCTIONS** | | | |
| * All questions are compulsory. * Section B and C are coding questions which have to be answered in the system and uploaded in Olympus Login. * Section A should be handwritten in the answer script provided and signed at the end of the same. | | | |
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| **SECTION A – 20 MARKS** | | | |
| 1 | a | **What is the difference between nested and correlated subqueries?** | 2 |
| 1 | b | Name the operator which is used in the query for pattern matching? | 2 |
| 1 | c | What are character manipulation functions? Give some examples. | 2 |
| 1 | d | Explain Check Constraint in-detail with an example | 2 |
| 1 | e | Compare sub-query and joins. | 2 |
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| 2 | a | What are the advantages of using Analytical functions? | 2 |
| 2 | b | What is the ACID property in a database? | 2 |
| 2 | c | **What is a view, and why use it? Can we create a view based on another view?** | 2 |
| 2 | d | **What is normalization in SQL, and why use it?** | 2 |
| 2 | e | What is the difference between the RANK() and DENSE\_RANK() functions? | 2 |
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| **SECTION B – 40 MARKS** | | | |
| 3 | a | Use swiggy database to solve all the questions:  List all restaurants that have received at least one order | 2 |
| 3 | b | How many customers have not placed any orders? | 3 |
| 3 | c | Identify the top 3 most expensive food items in each restaurant | 7 |
| 3 | d | What is the average rating for each restaurant and delivery partner? | 7 |
| 3 | e | Find the average price of vegetarian dishes (type='Veg') offered by each restaurant. | 7 |
| 3 | f | Find the top 3 cuisines based on total order amount | 7 |
| 3 | g | Calculate the average price of food items for each restaurant and compare it with the price of each item | 7 |
|  |  | **SECTION C – 40 MARKS** |  |
| 4 | a | Use movies database to solve all the questions:  Write a SQL query to find those movies, which were released before 1998. Return movie title. | 2 |
| 4 | b | Write a SQL query to find the name of all reviewers and movies together in a single list. | 2 |
| 4 | c | Calculate the cumulative count of reviews for each movie | 3 |
| 4 | d | Write a SQL query to find the movies without any rating.(using subquery) | 5 |
| 4 | e | Write a SQL query to find the actors who played a role in the movie 'Annie Hall'. Return all the fields of actor table | 7 |
| 4 | f | Write a SQL query to find the movies with the lowest ratings.  -- Return reviewer name, movie title, and number of stars for those movies | 7 |
| 4 | g | Write a SQL query to find out which actors have not appeared in any movies between 1990 and 2000 (Begin and end values are included.).  -- Return actor first name, last name, movie title and release year. | 7 |
| 4 | h | Write a SQL query to find the years in which a movie received a rating of 3 or 4. Sort the result in increasing order on movie year | 7 |

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