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- *I agree that this test is given by me, and I will not share this test paper with third person.*

Note: You are not allowed to use any type of AI tool for generating the content. If the content is found so your application would be rejected.

The questions for the QAT are given below along with their word count.

Section A

Question 1. Explain a few data analysis tools for users to process and manipulate data. (100 words)

Tools for data analysis are necessary for handling, analyzing, and modifying data are:
  ➢ Excel: It has functions, pivot tables, and charting features, and is widely used for data entry, analysis, and visualization.
  ➢ SQL: It is a powerful language for structured relational databases, making it easy to work with large datasets.
  ➢ Python: Programming language that comes with libraries for data analysis and manipulation as well as for visualization.
  ➢ Power BI: Business analytics tool that lets customers construct their own dashboards and reports using an easy-to-use interface.
  ➢ Tableau: Program for data visualization that lets users make dashboards that are shareable and interactive.

Question 2. What is the difference between prescriptive and predictive analytics? (100 words)

Prescriptive Analytics: Prescriptive analytics takes things a step further by offering suggestions for how to improve results considering predictive insights.

  ➢ It provides the response to "What should we do about it?"

Predictive analytics: With the use of statistical models and past data, predictive analytics makes predictions about the future by looking for patterns and trends that indicate what is likely to happen.

  ➢ It responds to, "What could happen?"

Section B (Select any One)

Question 3. Create a simple webpage layout with a header, a sidebar, and a main content area. The header should contain a logo and a navigation menu. The sidebar should include a list of links. The main content area should display some dummy text.

Question 4. write an SQL query that retrieves the total sales amount for each product from a table called "Sales." The "Sales" table has the following columns: product_id, product_name, quantity_sold, and price_per_unit. The query should calculate the total sales amount (quantity_sold multiplied by price_per_unit) for each product and display the results. Write the explanations of the query in word format

SQL query that retrieves the total sales amount for each product
> select product_id, product_name, sum(quantity_sold*price_per_unit) as total_sales_amount from Sales group by product_id, product_name;

Explanation:

The query calculates the total sales amount for each product by grouping the data based on product_id and product_name, then summing the total sales amount for each product based on the multiplication of quantity_sold and price_per_unit.

Section C

Question 5. Perform exploratory data analysis (EDA) on a provided dataset, "Corona.csv", examining data distributions, identifying missing values, handling outliers, visualizing relationships between variables, and deriving meaningful insights from the data. The candidate should present their findings through visualizations and written explanations.

Observations after EDD on provided dataset

For the missing value observation for different columns
  - ➢ There are Missing values in "Location" column only of Corona_data dataset.
  - ➢ "Location" column has string data type so, for missing value treatment I, replaced all the null value with "NA".
  - ➢ "UserName" and "ScreenName" columns contain unique values, and the total number of unique values is 41156.

For the outliers in variable, boxplots give proper visualization
  - ➢ There are no outliers showing in "UserName" and "ScreenName" columns.
  - ➢ "UserName" and "ScreenName" contain unique values for all the customer, so checking for the outliers doesn't give any significance.
  - ➢ No outlier treatment is required for any columns.

For the count of categorical data, count-plots gives proper visualization
  - ➢ There are five categories in the 'Sentiment' column and 'Sentiment' with positive category is more in compared to others.

Note: I also attached the Jupyter notebook file with this pdf , please refer for more detail and explanation

Question 6.

Create a simple sign and signup pages on the basis of user roles in Django.