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DATE: 27<sup>th</sup> June 2026

TIME: 1.30 pm. - 4.30 pm.

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**INSTRUCTIONS**

- Answer ANY FOUR questions INCLUDING QUESTION NUMBER 5. (i.e. Question Number 05 is compulsory).
- All questions carry equal marks.
- Illegible handwriting may cost you marks.
- This question paper contains 5 questions on 2 pages.

**Question 01**

- Describe the concept of Data Visualization and explain why it is considered an essential component of the Business Analytics process. (06 Marks)
- Describe 'descriptive analytics' and illustrate its application with a relevant example. (06 Marks)
- How does Prescriptive Analytics differ from Predictive Analytics? Explain. (06 Marks)
- Describe how do specialized visualization tools (such as Slicers and Cross-filtering) facilitate and improve the exploratory data analysis process for a business user. (07 Marks)

**(Total: 25 Marks)**

**Question 02**

- Describe the key features of Power BI and explain how they contribute to effective business analytics. (05 Marks)
- Briefly explain the purpose of using Orange Data Mining tool. (04 Marks)
- Briefly describe four differences between Power BI and Orange Data Mining. (08 Marks)
- Describe four key benefits of using **Z-score plots** for identifying outliers or anomalies in a business data set. (08 Marks)

**(Total: 25 Marks)**

**Question 03**

- a) Describe the three main characteristics of 'big data'. (06 Marks)
- b) Identify three industries that use Big Data analytics and explain how it benefits them. (09 Marks)
- c) Explain the role of Data Analysis Expressions (DAX) in Power BI. (05 Marks)
- d) Write five key best practices or strategies for designing an effective **Mobile Layout** for a Power BI report to ensure readability on smaller screens. (05 Marks)

**(Total 25 marks)****Question 04**

- a) Explain the three steps of the ETL Process in Data Exploration. (06 Marks)
- b) Describe the purpose and relevance of ETL process in Data Exploration. (06 Marks)
- c) How does Power BI handle the identification of '**Anomalies**' (Outliers) using the "Find Anomalies" feature in the Analytics pane? Describe. (06 Marks)
- d) Write five strategies for optimizing big data analytics in Power BI. (07 Marks)

**(Total 25 marks)****Question 05**

Write **short notes** on the following topics/concepts.

- a) The "Three V's" of Big Data (05 Marks)
- b) Types of Classification in Machine Learning (05 Marks)
- c) Semi-Supervised vs. Self-Supervised Learning (05 Marks)
- d) Tree-map Visualizations (05 Marks)
- e) Map Visualizations (Bubble vs. Filled) (05 Marks)

**(Total 25 marks)****(Copyrights Reserved)**