18020

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – MBA-2024
Course Name – Data Visualisation and Communication
Course Code - MBA30201E
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Choose the key benefit of using the Grammar of Graphics in data visualization.

a) It simplifies visual aesthetics. b) It unifies the structure of plots across tools.
c) It enhances 3D plotting exclusively. d) It supports only one type of chart.

(ii) Identify which component of the Grammar of Graphics defines the mathematical transformation applied to data.

a) Statistics b) Algebra
c) Scales d) Geometry

(iii) Select the part of the Grammar of Graphics responsible for mapping data values to visual properties.

a) Coordinates b) Scales
c) Facets d) Statistics

(iv) Choose the most appropriate use of 'Variables' in Grammar of Graphics.

a) To define graphic shapes b) To specify legends
c) To represent data columns d) To filter plot themes

(v) Identify the component that adjusts the range of visual axes in a plot.

a) Scales b) Aesthetics
c) Geometry d) Facets

(vi) Select the term that represents a measurable characteristic in data visualization.

a) Attribute b) Scale
c) Variable d) Mark

(vii) Choose which algebraic concept in Grammar of Graphics combines multiple plots.

a) Layering b) Statistics
c) Geometry d) Scales

(viii) Identify which component defines how variables are turned into visual elements like bars or points.

a) Facets b) Aesthetics

c) Geometry
d) Data

(ix) Select the correct role of 'Statistics' in the Grammar of Graphics.

a) To map data to plot coordinates
b) To split data into subplots
c) To compute transformations like mean or count
d) To define graphic layout

(x) Choose the correct sequence of stages in Grammar of Graphics pipeline.

a) Data → Variables → Geometry → Scales → Statistics
b) Data → Scales → Geometry → Statistics → Coordinates
c) Data → Variables → Statistics → Geometry → Coordinates
d) Variables → Data → Aesthetics → Statistics → Scales

(xi) Choose the reason why facets are powerful in visual storytelling.

a) They color-code the data
b) They smooth time series
c) They allow data comparison across categories
d) They only display summary statistics

(xii) Choose which aesthetic mapping is most common in scatter plots.

a) Size to time
b) Color to category
c) Label to legend
d) Facet to opacity

(xiii) Identify what represents spatial variables in maps.

a) Data aesthetics
b) Geographical coordinates
c) Facets
d) Guides

(xiv) Choose how automation contributes to visual analytics.

a) Manual axis labeling
b) Interactive filtering
c) Random data generation
d) Disabling dynamic inputs

(xv) Choose what interactive control enables user-directed filtering.

a) Legends
b) Sliders
c) Axis titles
d) Facets

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Examine how graphic communication evolved over time. (3)
3. State the historical significance of William Playfair in data visualization. (3)
4. Examine the role of variables in data visualisation. (3)
5. Define the term 'aesthetic mapping' in the context of the Grammar of Graphics. (3)
6. Examine the role of facets in graphical semantics and data visualisation. (3)

OR

State the importance of uncertainty, analysis, and control in advanced visual analytics. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Examine the concept of Data Science and its interdisciplinary nature. (5)
8. Describe the term 'Big Data' and its key characteristics. (5)
9. Examine the data visualization capabilities of R. (5)
10. Evaluate the usefulness of data structures in R. (5)
11. Evaluate the significance of summary statistics in detecting data anomalies. (5)
12. Evaluate how visualizations such as residual plots and scatterplots are used in assessing regression model performance. (5)

OR

Evaluate the usefulness of histograms in EDA. (5)

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