



43389

Library
Brainware University
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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – MBA-2024

Course Name – Predictive Analytics

Course Code - MBA40204E

(Semester IV)

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) Identify the primary objective of predictive analytics in business decision-making.
 - a) Describing historical trends
 - b) Optimizing current operations
 - c) Forecasting future outcomes using data
 - d) Visualizing large datasets patterns
- (ii) Select the business scenario where predictive modeling delivers the highest strategic value.
 - a) Reporting last year's sales
 - b) Predicting customer churn probability
 - c) Storing transactional data
 - d) Cleaning raw datasets
- (iii) Cite the principle that ensures predictive models generalize well to unseen data.
 - a) Overfitting
 - b) Data leakage
 - c) Model validation
 - d) Feature explosion
- (iv) Identify the key distinction between predictive analytics and descriptive analytics.
 - a) Data volume used
 - b) Time orientation of insights
 - c) Visualization techniques
 - d) Data storage method
- (v) Cite the objective of model validation in analytics projects.
 - a) Increase training data
 - b) Reduce computation time
 - c) Assess model generalization
 - d) Visualize predictions
- (vi) Identify the analytics trend driven by ethical AI and regulatory compliance.
 - a) Black-box modeling
 - b) Explainable AI
 - c) Batch processing
 - d) Data warehousing
- (vii) Select the component of a neural network responsible for learning patterns.
 - a) Input layer
 - b) Output layer
 - c) Weights and biases
 - d) Activation labels
- (viii) Cite the output of Logistic Regression.

- a) Continuous value
c) Cluster label
- b) Probability score
d) Tree rule
- (ix) Identify the splitting process that continues until stopping criteria are met.
a) Pruning
c) Recursive partitioning
- b) Bootstrapping
d) Bagging
- (x) Select the method that reduces overfitting in Decision Trees.
a) Growing
c) Pruning
- b) Boosting
d) Encoding
- (xi) Choose the metric that penalizes model complexity in comparative model analysis.
a) RMSE
c) MAE
- b) Adjusted R^2
d) Accuracy
- (xii) Choose the method used in SPSS for validating predictive models.
a) Bootstrapping
c) Factor Analysis
- b) ANOVA
d) Crosstabs
- (xiii) Select the condition under which Discriminant Analysis fails completely.
a) Equal priors
c) Non-normal predictors
- b) Perfect separation
d) Balanced classes
- (xiv) Choose the assumption that Logistic Regression does NOT require.
a) Independent observations
c) Normal predictors
- b) Linearity in log-odds
d) Absence of multicollinearity
- (xv) Select the metric best suited to evaluate Logistic Regression on imbalanced data.
a) Accuracy
c) Recall
- b) Precision
d) ROC-AUC

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Group-B

(Short Answer Type Questions)

3 x 5=15

2. Sketch the role of statistical tools in predictive analytics. (3)
3. Illustrate the ethical and data quality challenges in predictive analytics. (3)
4. Illustrate the concept of data partitioning in predictive analytics. (3)
5. Assess how R functions and libraries support end-to-end analytics. (3)
6. Contrast built-in and user-defined R functions. (3)

OR

- Experiment with R libraries for predictive analytics. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Contrast descriptive analytics and predictive analytics. (5)
8. Construct the steps involved in data partitioning for predictive modeling. (5)
9. Assess the role of predictive analytics in optimizing email marketing campaign performance. (5)
10. Contrast descriptive analytics with predictive analytics in real-world applications. (5)
11. Assess the impact of predictive analytics on product selection and portfolio management. (5)
12. Explain the role of data preparation in building effective predictive models. (5)

OR

- Examine the different types of predictive models used in analytics. (5)
