BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – BBA-2022/BBA(DM)-2022/BBA(HM)-2022/B.Com.(AFB)-Hons-2022
Course Name – Content Management and Business Intelligence
Course Code - GECS401
(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) What is the challenge in evaluating classification models?
   a) Underfitting
   b) Overfitting
   c) Balanced datasets
   d) Unbiased evaluation metrics

(ii) Identify the main purpose of evaluating classification models using different metrics.
   a) To select the model with the highest accuracy
   b) To understand the trade-offs between different aspects of model performance
   c) To overfit the model to the training data
   d) To compare the number of true positives and false negatives

(iii) Define the goal of clustering is to _____.
   a) Divide the data points into groups
   b) Classify the data point into different classes
   c) Predict the output values of input data points
   d) All of these

(iv) Identify which of the following is a bad characteristic of a dataset for clustering analysis.
   a) Data points with outliers
   b) Data points with different densities
   c) Data points with non-convex shapes
   d) All of these

(v) What is the posterior distribution in Bayesian inference?
   a) The probability distribution of the parameters before observing the data
   b) The probability distribution of the parameters after observing the data
   c) The probability distribution of the data
   d) The likelihood function

(vi) Identify the function used in logistic regression to model the probability of a binary outcome.
   a) Linear function
   b) Exponential function
   c) Sigmoid function
   d) Polynomial function

(vii) Choose the clustering algorithm based on initial selection of centroids.
   a) K-means
   b) DBSCAN
   c) Agglomerative clustering
   d) Mean-shift clustering

(viii) What is a potential limitation of hierarchical clustering when dealing with large datasets?

a) It requires the calculation of a distance matrix, which can be memory-intensive.
b) It cannot handle high-dimensional data.
c) It assumes clusters are spherical.
d) It is sensitive to outliers in the dataset.

(ix) Which of the following clustering algorithms is not affected by the order of the input data points?

a) K-means
b) DBSCAN
c) Agglomerative clustering
d) Mean-shift clustering

(x) Identify which one is the well defined and recurring decision making procedure.

a) Structured
b) Semi-structured
c) Operational
d) Unstructured

(xi) Identify what is the primary objectives of mathematical models.

a) To identify regular patterns in the data
b) To identify irregular patterns in the data
c) To identify negative patterns in the data
d) To identify neutral patterns in the data

(xii) Select the right option. _____is the task of buying goods of the right quality, in the right quantities, at the right time and at the right price.

a) Supplying
b) Purchasing
c) Scrutinizing
d) Logistics

(xiii) Choose the steps of the decision process in sales force management.

a) Calls planning, Product presentations planning
b) Company and objectives, Analysis and results
c) Purchase costs, Production costs, Inventory costs
d) Design, Planning, Assessment

(xiv) Choose the for sales force design decision.

a) Sales territories
b) Response functions
c) Vehicles.
d) Extra capacity

(xv) Select the primary goal of data envelopment analysis.

a) Maximizing individual profit margins
b) Identifying inefficiencies in decision-making units
c) Minimizing customer satisfaction
d) Expanding market share rapidly

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define logistic regression. (3)
3. What is Efficient Frontier? (3)
4. Explain about Data envelopment analysis. (3)
5. Examine the Revenue management systems. (3)
6. Analyse the optimization models for logistic planning. (3)

OR

Examine the concept of Market basket analysis. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. What is k-means clustering algorithms? (5)
8. Explain the process of KDD. (5)
9. Explain the data mining process for decision making. (5)
10. Compare among the common techniques used in data preparation. (5)
11. Evaluate the decision making process categorization relative to salesforce management. (5)

12. Distinguish the major steps involved in the data mining process and explain their significance. (5)

OR

Assess the use of mathematical models in Business. (5)

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