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Library
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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – BCA-Hons-2023

Course Name – Data Warehousing and Data Mining

Course Code - BCA60205

(Semester VI)

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) Data mining is the process of
 - a) Storing data
 - b) Extracting patterns from data
 - c) Encrypting data
 - d) Transmitting data
- (ii) Data mining is mainly performed on
 - a) Raw files
 - b) Databases
 - c) Text editors
 - d) Compilers
- (iii) Data mining helps in
 - a) Data deletion
 - b) Decision making
 - c) Hardware upgrade
 - d) Network setup
- (iv) A data warehouse is optimized for
 - a) Frequent updates
 - b) Complex analytical queries
 - c) Real-time processing
 - d) Transaction validation
- (v) A data warehouse is primarily designed for
 - a) Transaction processing
 - b) Real-time data entry
 - c) Analytical processing
 - d) File storage
- (vi) A fact table mainly contains
 - a) Descriptive attributes
 - b) Metadata
 - c) Measures and foreign keys
 - d) Indexes
- (vii) "Non-volatile" data in a data warehouse means
 - a) Data changes frequently
 - b) Data is deleted often
 - c) Data is read-only
 - d) Data is temporary
- (viii) In a star schema, dimension tables are connected to
 - a) Other dimension tables
 - b) Fact table only
 - c) Metadata repository
 - d) OLAP server
- (ix) Classification problems in data mining mainly deal with

- a) Predicting continuous values
- c) Predicting categorical labels
- (x) Regression problems are used to
 - a) Assign class labels
 - c) Cluster data
- (xi) Naive Bayes classifier is based on
 - a) Decision rules
 - c) Bayes theorem
- (xii) Precision measures
 - a) Ability to find all positives
 - c) Overall correctness
- (xiii) Random Forest is an ensemble of
 - a) Neural networks
 - c) Decision trees
- (xiv) If a model predicts class labels such as "spam" or "not spam", it is solving a
 - a) Regression problem
 - c) Clustering problem
- (xv) Forecasting future sales using past sales data is an example of
 - a) Classification
 - c) Time series analysis
- b) Grouping unlabeled data
- d) Reducing data size
- b) Predict numeric values
- d) Remove noise
- b) Distance measures
- d) Association rules
- b) Correctness of positive predictions
- d) Error rate
- b) Support vector machines
- d) Bayesian classifiers
- b) Classification problem
- d) Ranking problem
- b) Clustering
- d) Association mining

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the steps involved in finding the Interquartile Range (IQR) for the dataset {4, 8, 12, 10}. (3)
3. Explain Knowledge Discovery in Databases (KDD) and its relationship with data mining. (3)
4. Explain the difference between Star schema and Snowflake schema. (3)
5. Explain why ensemble methods like Random Forest are used in machine learning. (3)
6. Analyze the challenges involved in performing sentiment analysis on social media data. (3)

OR

Analyze how distributed data mining frameworks improve time series forecasting on big data. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. What is data preprocessing in data mining? (5)
8. Explain OLAP concepts, OLAP operations, and OLAP server architectures. (5)
9. Classify and illustrate classification and regression problems in data mining with examples. (5)
10. Analyze the working of Apriori and FP-Growth algorithms in association rule mining. (5)
11. Analyze the challenges of applying data mining techniques in big data environments while ensuring ethical and privacy standards. (5)
12. Evaluate star schema and snowflake schema in terms of performance, complexity, and usability. (5)

OR

Critically evaluate ROLAP, MOLAP, and HOLAP architectures for large-scale analytical applications. (5)

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