Reg. No. | | | | | | | | | | | |

BCACAEN 601

Sixth Semester B.C.A. Degree Examination, June/July 2025
(NEP – 2020) (2023 – 24 Batch Onwards)
FUNDAMENTALS OF DATA SCIENCE
(DSE)

Time : 2 Hours | Max. Marks : 60

Note : *Answer* ***any six*** *questions from Part –* ***A*** *and* ***one full*** *question from* ***each*** *Unit in Part –* ***B***.

PART – A **(6×2=12)**

1. a) Define data mining.
   b) What is prediction and description in data mining ?
   c) Expand OLTP and OLAP.
   d) List the processes involved in data transformation.
   e) What are frequent patterns ? What is the use of frequent pattern mining ?
   f) Give the two-step process of association rule mining.
   g) What is tree pruning ?
   h) What is eager learner ? Give example.

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PART – B

Unit – I

2. a) Explain the different application areas of data mining.
   b) Write a note on :
      i) Clustering
      ii) Frequent episodes. **(6+6)**

3. a) Define KDD process. Explain the different stages of KDD.
   b) Explain the following data mining techniques :
      i) Verification Model
      ii) Discovery Model. **(6+6)**

P.T.O.

Unit – II

4. a) Explain any four differences between operational database system and data warehouse.
   b) Define and explain data warehouse.
   c) Explain the different forms of data preprocessing. **(4+4+4)**

5. a) Explain any six OLAP operations.
   b) Explain the following multidimensional database schema with example.
      i) Star schema
      ii) Fact constellation schema. **(6+6)**

Unit – III

6. a) Write a note on frequent itemsets and closed itemsets.
   b) Briefly explain the steps involved in ARCS.
   c) Explain constraint based association mining. **(4+4+4)**

7. a) Write a note on generating association rules from frequent itemsets.
   b) Explain the classification of frequent pattern mining.
   c) With diagram, explain mining by partitioning data. **(4+4+4)**

Unit – IV

8. a) Explain decision tree induction algorithm.
   b) Explain the data classification with example.
   c) Write a note on BIRCH. **(4+4+4)**

9. a) Explain the criteria which are used for comparing classification and prediction methods.
   b) Explain rule extraction from decision tree.
   c) Explain STING. **(4+4+4)**

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