



# P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Fifth Semester, B.E. - Information Science and Engineering**

**Semester End Examination; Feb. - 2021**

**Data Mining**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

### UNIT - I

- |      |  |    |
|------|--|----|
| 1 a. | Explain different OLAP operations performed on multidimensional data.      | 10 |
| b.   | List and explain the characteristics of OLAP systems.                      | 10 |
| 2 a. | Construct a model for multidimensional view and data cube with an example. | 10 |
| b.   | Discuss the solution for data cube implementation.                         | 10 |

### UNIT - II

- |      |   |    |
|------|---|----|
| 3 a. | Explain the various motivating challenges of data mining.                                       | 10 |
| b.   | Discuss the data mining tasks with an example.  | 10 |
| 4 a. | Construct a table for categorizing different attribute types along with operations and example. | 12 |
| b.   | Explain data preprocessing with all its properties.   | 8  |

### UNIT - III

- |      |  |   |
|------|--|---|
| 5 a. | Categorize different methods for handling continuous attributes. | 8 |
| b.   | Solve the following given training set:                          |   |

TID	Items Purchased
1	Bread, cheese, egg, juice
2	Bread, cheese, juice
3	Bread, milk, yogurt
4	Bread, juice, milk
5	Cheese, juice, milk

12

Calculate the support and confidence 50% and 75% respectively. Generate rules using Apriori algorithm.

- |      |   |    |
|------|---|----|
| 6 a. | Explain support based on indirect association.              | 10 |
| b.   | Justify how to improve the efficiency of Apriori algorithm? | 10 |

### UNIT - IV

- |      |  |    |
|------|--|----|
| 7 a. | Explain the steps involved in constructing decision tree with Hunts algorithm. | 10 |
| b.   | Distinguish between Rule-Based and Class-Based ordering schemes.               | 10 |
| 8 a. | Discuss the concept of Nearest Neighbour classifier.                           | 10 |
| b.   | Discuss the role of SVM in classification.                                     | 10 |

### UNIT - V

- |       |   |    |
|-------|---|----|
| 9 a.  | Discuss the concept of DBSCAN method in detail.           | 10 |
| b.    | Explain the merits and demerits of Hierarchical approach. | 10 |
| 10 a. | Explain the desirable information on Web usage mining.    | 10 |
| b.    | Describe two major steps of HITS algorithm.               | 10 |