Course Code: 25MC9111 **R25**

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Data Mining and Business Intelligence(25MC9111) **Course & Branch**: MCA
Year & Sem: I-MCA & II-Sem **Regulation:** R25

UNIT –I
Overview and concepts Data Warehousing and Business Intelligence

1	Explain the lifecycle of data and how raw data is transformed into valuable information.	[L2][C01]	[12M]
2	Discuss the importance of Business Intelligence and its role in modern organizations.	[L2][C01]	[12M]
3	What is data warehousing? Describe its basic elements and the need for it.	[L1][C01]	[12M]
4	Explain the architecture and components of a data warehouse with a neat diagram.	[L2][C02]	[12M]
5	What are the defining features of a data warehouse? How is it different from a data mart?	[L1][C01]	[12M]
6	Describe the relationship between Business Intelligence and Data Warehousing in today's context.	[L2][C01]	[12M]
7	Explain the role and importance of metadata in data warehousing.	[L2][C02]	[12M]
8	Discuss current trends in data warehousing and their impact on business decision-making.	[L2][C06]	[12M]
9	List any two trends in data warehousing	[L1][C06]	[12M]
10	Define metadata in the context of data warehousing.	[L1][C02]	[12M]

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UNIT –II

The Architecture of BI and DW

1	Explain the BI and DW architectures and describe various types.	[L2][C02]	[12M]
2	Discuss the relationship between Business Intelligence and Data Warehousing with examples.	[L2][C01]	[12M]
3	Define OLAP. Differentiate between OLAP and OLTP with suitable examples.	[L1][C02]	[12M]
4	Explain dimensional analysis in detail with the help of a data cube example.	[L2][C04]	[12M]
5	Describe OLAP operations: drill-down, roll-up, slice, dice, and rotation with suitable illustrations.	[L2][C02]	[12M]
6	Compare ROLAP and MOLAP. Mention advantages and disadvantages of each.	[L2][C02]	[12M]
7	Describe various OLAP models in detail.	[L1][C02]	[12M]
8	Explain different types of schemas in data warehousing: star, snowflake, and fact constellation with diagrams.	[L2][C02]	[12M]
9	A) What is dimensional analysis? B) Write one difference between OLAP and OLTP.	[L1][C04] [L6][C02]	[6M] [6M]
10	A) Define ROLAP and MOLAP. B) What is a star schema? C) What is a fact constellation schema?	[L1][C02] [L1][C02] [L1][C02]	[4M] [4M] [4M]

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UNIT –III

Introduction to Data Mining (DM)

1	Explain the motivation for data mining and discuss why it is important in modern organizations.	[L2][C01]	[12M]
2	Define data mining. Explain its major functionalities with examples.	[L1][C01]	[12M]
3	Classify data mining systems based on various criteria and explain each type.	[L2][C02]	[12M]
4	What are data mining task primitives? Describe their role in specifying a data mining query.	[L1][C03]	[12M]
5	Explain the integration of data mining systems with databases or data warehouses.	[L2][C02]	[12M]
6	Discuss various issues and challenges in data mining.	[L2][C01]	[12M]
7	What is the KDD process? Explain each step in the Knowledge Discovery in Databases process in detail.	[L1][C03]	[12M]
8	Compare and contrast data mining and KDD. Explain how data mining fits into the KDD process.	[L2][C03]	[12M]
9	State any one challenge in integrating data mining with a database.	[L1][C03]	[12M]
10	A) Mention types of data mining systems. B) Write any four steps in the KDD process.	[L1][C03] [L6][C03]	[06M] [06M]

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UNIT –IV

Data Pre-Processing

1	Why is data pre-processing important in data mining? Explain various steps involved.	[L4][C04]	[12M]
2	Describe the different techniques for handling missing values and noisy data during data cleaning.	[L2][C04]	[12M]
3	What is data integration and transformation? Explain with suitable examples.	[L1][C04]	[12M]
4	Discuss various data reduction techniques such as cube aggregation, dimensionality reduction, and compression.	[L2][C04]	[12M]
5	Explain data compression and numerosity reduction techniques with suitable examples.	[L2][C04]	[12M]
6	What are data mining primitives? Explain how they help in formulating data mining tasks.	[L1][C03]	[12M]
7	Describe the architecture of a data mining system and explain its components.	[L2][C03]	[12M]
8	What is discretization? Explain how concept hierarchies are used in data preprocessing.	[L1][C04]	[12M]
9	A) Mention two methods of handling missing values in a dataset. B) Mention any two data compression technique.	[L1][C04] [L1][C04]	[06M] [06M]
10	Define numerosity reduction & task-relevant data.	[L1][C04]	[12M]

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UNIT –V

Concept Description and Association Rule Mining

1	What is concept description? Explain data generalization and summarization-based characterization in detail.	[L1][C05]	[12M]
2	Explain the relevance of attributes and the method of class comparisons in data summarization.	[L2][C05]	[12M]
3	Define association rule mining. Explain market basket analysis with an example.	[L1][C05]	[12M]
4	Describe the working of the Apriori algorithm with a suitable example and candidate generation steps.	[L2][C04]	[12M]
5	Explain the rule generation process from frequent itemsets using the Apriori approach.	[L2][C05]	[12M]
6	Compare Apriori and Improved Apriori algorithms. Explain how efficiency is improved.	[L2][C04]	[12M]
7	What is Incremental ARM? How does it differ from traditional ARM approaches?	[L1][C05]	[12M]
8	Explain the concept of associative classification. How is it different from traditional classification?	[L2][C05]	[12M]
9	Mention two improvements in the improved Apriori algorithm.	[L1][C04]	[12M]
10	Where is market basket analysis and Apriori algorithm used for?	[L1][C04]	[12M]

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