CBCS SCHEME

USN | | | | | | | | | | |

15CS651

# Sixth Semester B.E. Degree Examination, July/August 2021
## Data Mining and Data Warehousing

Time: 3 hrs. Max. Marks: 80

**Note:** ***Answer any FIVE full questions.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

1 a. What is Data Warehousing? Explain multitier architecture with neat diagram. **(08 Marks)**
b. Describe multidimensional data model and a cube with neat sketches. **(08 Marks)**

2 a. Explain OLAP operations with examples. **(10 Marks)**
b. What are Data warehouse models? Explain. **(06 Marks)**

3 a. Explain OLAP server Architecture? **(09 Marks)**
b. What is data mining? What are motivating challenges of data mining? Explain. **(07 Marks)**

4 a. Explain different types of data in Data mining. **(10 Marks)**
b. Explain data preprocessing steps. **(06 Marks)**

5 a. Develop the Apriori Algorithm for frequent itemset generation. **(08 Marks)**
b. Consider the transaction data set :

| Tid | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Items | {a,b} | {b, c, d} | {a, c, d, e} | {a, d, e} | {a, b, c} | {a, b, c, d} |
| Tid | 7 | 8 | 9 | 10 | | |
| Items | {a} | {a, b, c} | {a, b, d | {b, c, e} | | |

Construct the FP tree by showing the trees separately after reading each transaction. **(08 Marks)**

6 a. Explain frequent itemset generation and rule generation with reference to Apriori algorithm. **(10 Marks)**
b. Explain the various measures of evaluating association patterns. **(06 Marks)**

7 a. Write Hunts algorithm and illustrate its working with an example. **(08 Marks)**
b. Explain rule based classifier and its characteristics. **(08 Marks)**

8 a. Explain decision tree induction algorithm for classification. **(08 Marks)**
b. What are Bayesian classifiers? Explain Baye's theorem for classification. **(08 Marks)**

9 a. What is cluster analysis? Explain different types of clustering's. **(08 Marks)**
b. Explain K-means clustering algorithm. **(08 Marks)**

10 a. What is cluster? Explain three different types of clusters. **(08 Marks)**
b. Explain DBSCAN clustering algorithm. **(08 Marks)**

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