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By K B Hemanth Raj

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CBCS SCHEME



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15CS651

Sixth Semester B.E. Degree Examination, June/July 2018 Data Mining and Data Warehousing

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. What is data warehouse? Elaborate data warehouse using multi-tier architecture with a neat diagram. (10 Marks)
- b. Explain star schema and snow flake schema with examples. (06 Marks)

OR

- 2 a. What is data cube measure? How it is categorized? Explain. (05 Marks)
- b. Explain data warehouse model with neat diagram. (07 Marks)
- c. Briefly elaborate on typical OLAP operations on multidimensional data. (04 Marks)

Module-2

- 3 a. With respect to indexing, explain Bitmap Index and Join Index. (04 Marks)
- b. Describe the servers involved in implementation of a warehouse server. (08 Marks)
- c. How data mining tasks are categorized? Explain. (04 Marks)

OR

- 4 a. Describe the challenges that motivated the development of data mining. (10 Marks)
- b. What are the properties necessary to describe attributes? Explain different types of attributes. (06 Marks)

Module-3

- 5 a. Describe frequent item set generation in Apriori algorithm with example. (08 Marks)
- b. Explain the uses of Hash Tree in support counting. (08 Marks)

OR

- 6 a. Describe alternative methods for generating frequent item sets. (09 Marks)
- b. Consider the following transaction dataset. Describe the construction of FP-Tree in FP-Growth algorithm. (07 Marks)

Tid	Items
1	{a, b}
2	{b, c, d}
3	{a, c, d, e}

Module-4

- 7 a. Illustrate hunt's algorithm to develop a decision tree. Consider the following training set and derive the decision tree. (09 Marks)

Tid	Home Owner	Marital Status	Annual Income	Defaulted Borrower
1	Yes	Single	125 K	No
2	No	Married	100 K	No
3	No	Single	70 K	No
4	Yes	Married	120 K	No
5	No	Divorced	95 K	Yes
6	No	Married	60 K	No
7	Yes	Divorced	220 K	No
8	No	Single	85 K	Yes
9	No	Married	75 K	No
10	No	Single	90 K	Yes

- b. What are the characteristics of decision tree induction algorithms? (07 Marks)

OR

- 8 a. What are the characteristics of Nearest Neighbor classifiers? (06 Marks)
b. How Bayes theorem can be used for solving a classification problem? Explain. (10 Marks)

Module-5

- 9 a. Describe different types of clustering mechanisms. (06 Marks)
b. Explain DBSCAN algorithm. How the parameters are selected? (06 Marks)
c. List out important issues for cluster validation. (04 Marks)

OR

- 10 a. Illustrate Grid-based clustering algorithm. How clusters are formed from Dense-Grid cells. (12 Marks)
b. Develop DENCLUE algorithm for kernel density estimation. (04 Marks)

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