PG Odd Semester (CBCS) Exam., December—2017

COMPUTER SCIENCE

(9th Semester / 3rd Semester)

Course No. : MCS–901 (C) / MS–301 (C)

(Data Mining and Knowledge Discovery)

Full Marks : 75
Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. Define data warehouse. Explain the 3-tier architecture of data warehouse. 2+13=15

2. *(a)* What does metadata repository contain? Also explain the different types of metadata. 7

(b) Explain the importance of OLAP operations in multidimensional data cube. 4

(c) Define the following data warehouse schema : 4

(i) Star schema

(ii) Snowflake schema

UNIT—II

3. *(a)* What is data mining? How is it different from DBMS? 5

(b) Illustrate the different phases of KDD in database. 6

(c) Discuss the major issues of data mining. 4

4. *(a)* Define genetic algorithm techniques for data mining. What are the difficulties in using this technique? 5

(b) Discuss the role of data mining in data warehouse. 5

(c) Explain the influence of machine learning in data mining. 5

UNIT—III

5. *(a)* What is association rule? Discuss the importance of discovering association rule in data mining. 5

(b) How does partition algorithm overcome the problem of a priori algorithm? Explain with example. 10

6. *(a)* Describe the basic principle, merits and demerits of Pincer search algorithm. 9

(b) Discuss the concept of support, confidence and border with example. 6

UNIT—IV

7. *(a)* Explain k-means algorithm in detail. 9

(b) Compare the performance of CLARA and CLARANS. 6

8. *(a)* Distinguish between : 3+3=6

(i) Hierarchical and partition clustering

(ii) Numerical and categorical clustering

(b) Describe the underlying principle of DBSCAN algorithm. 9

UNIT—V

9. Write short notes on the following : 5×3=15

(a) Web mining

(b) Text mining

(c) Spatial mining

10. *(a)* Describe the essential features of decision tree. How is it useful to classify data? 6

(b) What is temporal data mining? Explain its various types. 6

(c) State the difference between prediction and data classification in data mining. 3

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