2016/ODD/08/24/
MCS–901 (C)/MS–301 (C)/600

PG Odd Semester (CBCS) Exam., December—2016

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. *(a)* What is a data warehouse? Illustrate the basic characteristics and applications of a data warehouse. 8

(b) Explain the following data warehouse schema with example : 3½+3½=7

(i) Star schema

(ii) Snowflake schema

2. *(a)* Explain the different functions of data warehouse back-end process. 7

(b) Illustrate the concept of slicing and dicing operations with the help of a data cube. 8

UNIT—II

3. *(a)* What is data mining? How is it different from knowledge discovery in database (KDD)? 6

(b) Explain the influence of the following disciplines on data mining : 3×3=9

(i) Machine Learning

(ii) Statistics

(iii) Mathematical Programming

4. *(a)* Discuss the role of data mining in data warehousing. 5

(b) Give a brief account on "data mining : concepts, issues and trends". 10

UNIT—III

5. *(a)* Discuss the working principle of Dynamic Itemset Counting (DIC) algorithm with one example. 8

(b) State the objectives of the partition algorithm for association rule mining. Explain how the partition algorithm better than the a priori algorithm with an example. 7

6. *(a)* What are border set and maximal frequent set? Explain with example by constructing a relevant itemset lattice. 5

(b) Illustrate FP-tree growth algorithm and its working principle in detail with an example. 10

UNIT—IV

7. *(a)* Distinguish between hierarchical and partition clustering algorithm. 5

(b) Explain the K-means algorithm in detail. 10

8. Describe the underlying principle of BIRCH algorithm. 15

UNIT—V

9. *(a)* What is prediction? How does it differ from data classification? 5

(b) Explain different kinds of temporal data. 5

(c) Discuss the principle of construction of a decision tree for data classification. 5

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

(a) Text Mining

(b) Spatial Data Mining

(c) GPS Algorithm for Sequence Mining

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