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MCS-221

**MASTER OF COMPUTER
APPLICATION (MCA) (NEW)**

Term-End Examination

June, 2022

**MCS-221 : DATA WAREHOUSING AND
DATA MINING**

Time : 3 Hours

Maximum Marks : 100

Weightage : 70%

Note : (i) *Question No. 1 is compulsory.*

(ii) *Attempt any **three** questions from the rest.*

1. (a) What is Association Rule Mining ? With reference to this, explain the concepts given below :

10

- (i) Support Count

P. T. O.

- (ii) Frequent Item set
 - (iii) Association Rule
 - (iv) Rule Evaluation metrics
- (b) Define classification. With the help of an example for each, explain the following classification models : 10
- (i) Descriptive modeling
 - (ii) Predictive modeling
- (c) Describe the snowflake schema multidimensional modeling technique. Give an example and illustrate it. List its pros and cons. 10
- (d) What is complex data modeling ? Where is this used ? Explain “Anchor” complex data model. 10
2. (a) List and describe all the four types of OLAP operations. 10
- (b) Define text mining. Mention any *three* applications of it. What are the various techniques used to analyze the web-usage patterns ? 10

3. (a) Define a data warehouse. List and explain all the 3 types of data warehouses. 10
- (b) What is data transformation ? List and explain all the data transformation steps. 10
4. (a) What is data mining ? List out the key differences between data warehousing and data mining. Mention any *four* applications of data mining. 10
- (b) What is ETL ? Why do you need ETL in data warehouses ? Also, explain how ETL works in Data Warehousing ? 10
5. Write short notes on any *four* of the following : 4×5=20
- (a) OLTP
- (b) Data Marts
- (c) Web structure mining
- (d) Cloud Data Warehousing
- (e) Data Granularity