

End Term (Even) Semester Examination May-June 2025

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Name of the Program and semester: BCA 6

Name of the Course: Data Warehousing and Data Mining

Course Code: TBC 604(1)

Time: 3 hours Maximum Marks: 100

Note:

- (i) All the questions are compulsory.
- (ii) Answer any two sub questions from a, b and c in each main question.
- (iii) Total marks for each question is 20 (twenty).
- (iv) Each sub-question carries 10 marks.

Q1. (2X10=20 Marks)

- a. Explain the important features and the need for a Data Warehouse for businesses. [CO1]
- b. Explain the major components of a Data Warehouse Architecture with a neat diagram. [CO1]
- c. Compare and contrast the different schemas of the Multidimensional Model. [CO1]

Q2. (2X10=20 Marks)

- a. Explain the different OLAP operations with suitable examples. [CO2]
- b. Differentiate between Bitmap Indexing and Join Indexing techniques. [CO2]
- c. Compare and contrast Multidimensional and Multirelational OLAP. [CO2]
- Q3. (2X10=20 Marks)
- a. Explain the main steps in the Knowledge Discovery from Data (KDD) process. [CO3]
- b. Explain Association Rule mining with a suitable example. [CO3]
- c. Consider the following dataset and find the support and confidence for the rule {Milk, Diaper}→{Beer}. Minimum support is 2, and confidence is 100%. [CO3]

TID	Items		
1	Bread, Milk		
2	Bread, Milk, Beer, Eggs		
3	Milk, Diaper, Beer, Coke		
4	Milk, Bread, Diaper, Beer		
5	Bread, Milk, Diaper, Coke		

Q4. (2X10=20 Marks)

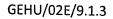
a. Explain the Decision tree classifier in detail with a suitable example. [CO4]

b. Classify the following examples using the K Nearest Neighbour algorithm and Euclidean distance, considering K as 2. [CO4]

A1= (2,10), A2= (2,5), A3= (8,4), A4= (5,8), A5= (7,5), A6= (6,4), A7= (1,2), A8= (4,9).

c. Use single and complete link agglomerative clustering to group the data described by the following distance matrix. [CO4]

	A	В	C	D
A	0	1	4	5
В		0	2	6
C			0	3
D				0





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Q5

(2X10=20 Marks)

- a. Explain the different types of complex data with suitable examples. [CO5]
- b. Explain in detail the challenges involved in mining Multimedia Data. [CO5]
- c. Write short notes on a) Text Data Mining, b) Web Data Mining. [CO5]