



## Term End Examination

Dec 2023

### CET2012B - Data Engineering Concepts

Question Paper ID: 029156

|                       |                            |                   |                    |
|-----------------------|----------------------------|-------------------|--------------------|
| <b>Faculty/School</b> | Engineering and Technology | <b>Term</b>       | Sem-IV             |
| <b>Program</b>        | SY BTech CSE AIDS          | <b>Duration</b>   | 1 Hours 30 Minutes |
| <b>Specialization</b> |                            | <b>Max. Marks</b> | 40                 |

Read the instructions provided for every question properly before attempting the answer.

**Section - 1** : contain(s) **10** question(s) and each question carries **5** mark(s). You can answer any **8** questions out of **10**.

Click **Finish** only after completion of the Exam.

#### Section - 1 (8 X 5 Marks)

Answer any 8 questions

|   |                                                                                                     |         |     |               |
|---|-----------------------------------------------------------------------------------------------------|---------|-----|---------------|
| 1 | Define Data Engineering. What are the components of Data Engineering?                               | 5 marks | CO1 | Remembering   |
| 2 | What are the measures of Central Tendency? Write down the Mathematical Expression of each.          | 5 marks | CO2 | Remembering   |
| 3 | Compare OLAP with OLTP systems                                                                      | 5 marks | CO3 | Analysing     |
| 4 | Write a short note on Data Warehouse Architecture. Draw Neat Diagram to support your answer.        | 5 marks | CO3 | Understanding |
| 5 | Define Market Basket Analysis. List and explain 2 real life applications of Market Basket Analysis. | 5 marks | CO4 | Applying      |

| 6                                                                                                                                                                                                                                                                                                            | Perform Apriori Algorithm on following. Find out frequent patterns step by step with Support=2                                                                                                                                                                                         | 5 marks | CO4 | Evaluating  |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-------------|-----|-------|---|-------------|---|---------------------------|---|--------------------------|---|---------------------------|---|---------------------------|
| <table><tr><th>TID</th><th>Items</th></tr><tr><td>1</td><td>Bread, Milk</td></tr><tr><td>2</td><td>Bread, Diaper, Beer, Eggs</td></tr><tr><td>3</td><td>Milk, Diaper, Beer, Coke</td></tr><tr><td>4</td><td>Bread, Milk, Diaper, Beer</td></tr><tr><td>5</td><td>Bread, Milk, Diaper, Coke</td></tr></table> |                                                                                                                                                                                                                                                                                        |         |     |             | TID | Items | 1 | Bread, Milk | 2 | Bread, Diaper, Beer, Eggs | 3 | Milk, Diaper, Beer, Coke | 4 | Bread, Milk, Diaper, Beer | 5 | Bread, Milk, Diaper, Coke |
| TID                                                                                                                                                                                                                                                                                                          | Items                                                                                                                                                                                                                                                                                  |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 1                                                                                                                                                                                                                                                                                                            | Bread, Milk                                                                                                                                                                                                                                                                            |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 2                                                                                                                                                                                                                                                                                                            | Bread, Diaper, Beer, Eggs                                                                                                                                                                                                                                                              |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 3                                                                                                                                                                                                                                                                                                            | Milk, Diaper, Beer, Coke                                                                                                                                                                                                                                                               |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 4                                                                                                                                                                                                                                                                                                            | Bread, Milk, Diaper, Beer                                                                                                                                                                                                                                                              |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 5                                                                                                                                                                                                                                                                                                            | Bread, Milk, Diaper, Coke                                                                                                                                                                                                                                                              |         |     |             |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 7                                                                                                                                                                                                                                                                                                            | Define Supervised and Unsupervised Learning. Explain each with example.                                                                                                                                                                                                                | 5 marks | CO5 | Remembering |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 8                                                                                                                                                                                                                                                                                                            | Categorise following applications as supervised and unsupervised learning . Justify your answer.<br>I. Spam and Legitimate Mail classification<br>II. Handwritten Character recognition<br>III. Flower type recognition<br>IV. Customer Segmentation<br>V. Disease type identification | 5 marks | CO5 | Analysing   |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 9                                                                                                                                                                                                                                                                                                            | Explain Training and Testing phase of Classification.                                                                                                                                                                                                                                  | 5 marks | CO5 | Analysing   |     |       |   |             |   |                           |   |                          |   |                           |   |                           |
| 10                                                                                                                                                                                                                                                                                                           | Apply and solve Bin by Means Technique on following data<br>4, 8, 9, 15, 21, 21, 24, 25, 26, 28, 29, 34                                                                                                                                                                                | 5 marks | CO1 | Applying    |     |       |   |             |   |                           |   |                          |   |                           |   |                           |

END OF QUESTION PAPER