BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: BBA **SEMESTER : V**
BRANCH: BBA **SESSION : MO/2025**

SUBJECT: MN435 DATA MINING

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Imagine you are working as a management trainee in a large retail chain like Big Bazaar or Reliance Mart. The company wants to increase customer satisfaction and boost sales. Your manager has asked you to explain: (a)What is Data Mining in simple terms?	[2]	1	1
	(b) What kind of data can be mined in this retail scenario (give at least 3 examples)?	[3]	1	1
Q.2(a)	Explain the difference between classification and regression using a real-life example that you are familiar with.	[2]	1	2
Q.2(b)	Describe the main activities (steps) in the Knowledge Discovery in Databases (KDD) process.	[3]	1	2
Q.3(a)	Use min-max normalization to transform the value 35 for *age* onto the range [0.0, 1.0], for the given data for *age*- *age*: 13, 15, 16, 19, 20, 21, 22, 25, 25, 30, 33, 33, 35, 36, 40, 45, 46, 52, 70.	[2]	2	3
Q.3(b)	State the three main properties a distance measure must satisfy to be called a metric.	[3]	2	1
Q.4(a)	Given the binary vectors: x=(1,0,1,0,0) y=(1,1,0,0,0) Which similarity measure—SMC or Jaccard—will give a higher similarity value?	[2]	2	3
Q.4(b)	For the following vectors, x and y, calculate Cosine similarity x = (1, 1, 0, 1, 0, 1), y = (1, 1, 1, 0, 0, 1)	[3]	2	3
Q.5(a)	In a supermarket, customers bought the following: T1: {Milk, Bread, Butter} T2: {Bread, Butter, Jam} T3: {Milk, Bread, Butter, Jam} T4: {Milk, Bread} T5: {Milk, Jam} What is Association Rule Mining in market basket analysis?	[2]	3	3
Q.5(b)	Find the support and confidence for the rule: {Milk, Bread}⇒{Butter}	[3]	3	3

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