

USN



Internal Assessment Test 1 - Mar 2026

Sub:	Machine Learning				Sub Code:	BCS602	Branch:	ISE		
Date:	03/03/2026	Duration:	90 min	Max Marks:	50	Sem/Sec:	VI / A, B & C	OBE		
<u>Answer any FIVE FULL Questions</u>								MAR KS	CO	RBT
1a	Explain Reinforcement Learning in detail with a diagram explanation and list out the challenges of Machine Learning.						[6]	CO1	L2	
1b	Consider the set: $V = \{ 20, 45, 65, 98 \}$. Apply the Min-Max procedure and map the marks to a new range 0-1.						[4]	CO1	L3	
2a	Write the Find-S Algorithm with a solved example and specify the limitations of Find-S						[8]	CO1	L2	
2b	Difference between Supervised and Unsupervised Machine Learning algorithms.						[2]	CO1	L2	
3	Let the data points be $\begin{pmatrix} 2 \\ 6 \end{pmatrix}$ and $\begin{pmatrix} 1 \\ 7 \end{pmatrix}$ Apply PCA and find the transformed data. Apply reverse and prove that PCA Works.						[10]	CO2	L3	
4	Explain descriptive statistics with fundamental concepts of data types						[10]	CO2	L2	
5a	Apply the Candidate Elimination algorithm to the training dataset below, consisting of 6 instances. Show the updated S and G boundaries after processing every instance.						[8]	CO2	L3	
		Sky	AirTemp	Humidity	Wind	Water	Forecast	EnjoySport		
		Sunny	Warm	Normal	Strong	Warm	Same	Yes		
		Sunny	Warm	High	Strong	Warm	Same	Yes		
		Rainy	Cold	High	Strong	Warm	Change	No		
		Sunny	Warm	High	Strong	Cool	Change	Yes		
5b	Difference between supervised and unsupervised machine Learning algorithm						[2]	CO2	L1	
6a	Write the definition for the K-Nearest Neighbour (KNN) algorithm. Consider the following student performance training dataset:						[8]	CO3	L3	
		S.No	CGPA	Assessment	Project	Result				
		1	9	88	9	Pass				
		2	8.2	75	8	Pass				
		3	7.8	70	7	Pass				
		4	5.5	45	5	Fail				
		5	6	50	6	Fail				
		6	6.5	55	5	Fail				
		7	8.5	82	8	Pass				
		8	5.8	48	4	Fail				
Using the K-Nearest Neighbour (KNN) algorithm with $K = 3$, classify the following test instance: (6.8,60,6)										
6b	Write the Nearest centroid classifier algorithm						[2]	CO3	L1	

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