

USN



**Internal Assessment Test 1 - Mar 2026**

Sub:	<b>Machine Learning</b>				Sub Code:	<b>BCS602</b>	Branch:	<b>ISE</b>		
Date:	<b>03/03/2026</b>	Duration:	<b>90 min</b>	Max Marks:	<b>50</b>	Sem/Sec:	<b>VI / A, B &amp; C</b>	<b>OBE</b>		
<b><u>Answer any FIVE FULL Questions</u></b>								MAR KS	CO	RBT
1a	Tom Mitchell's definition of machine learning. List out the factors that drive the popularity of machine learning.						[04]	CO1	L1	
1b	Explain Supervised, Unsupervised, and semi-supervised Learning with examples						[06]	CO1	L2	
2a	Explain in detail the machine learning process model with the process flow diagram						[05]	CO1	L2	
2b	Explain Big Data Analytics and Types of Analytics with examples						[05]	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	
4a	Write the Find-S algorithm with a solved example for the same, and specify the limitations of Find-S.						[07]	CO2	L3	
4b	Do the stem and Leaf plot for the following English Marks {38, 53, 63, 82, 88, 83, 85, 92}						[03]	CO2	L3	
5a	Apply the Candidate Elimination algorithm for the training dataset below, which consists of 6 instances. Show the updated <b>S and G boundaries</b> after processing every instance.						[08]	CO2	L3	
		<b>Sky</b>	<b>AirTemp</b>	<b>Humidity</b>	<b>Wind</b>	<b>Water</b>	<b>Forecast</b>	<b>EnjoySport</b>		
		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	Sorted data for price(in dollars): 2, 6, 7, 9, 13, 20, 21, 24, 30. Apply various Binning Techniques						[02]	CO2	L3	
6a	Write the definition for the K-Nearest Neighbour (KNN) algorithm. Consider the following student performance training dataset:						[08]	CO3	L3	
		<b>S.No</b>	<b>CGPA</b>	<b>Assessment</b>	<b>Project</b>	<b>Result</b>				
		1	9	88	9	Pass				
		2	8.3	75	8	Pass				
		3	7.9	73	7	Pass				
		4	5.6	45	5	Fail				
		5	7	53	6	Fail				
		6	6.6	55	5	Fail				
		7	8.6	82	8	Pass				
		8	5.8	48	4	Fail				
		Using the K-Nearest Neighbour (KNN) algorithm with K = 3, classify the following test instance: (5.8,90,8)								
6b	Write the Nearest centroid classifier algorithm						[02]	CO3	L1	

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HOD