

**Course Name:** Introduction to Machine Learning

201DSL303

**Day and Date:** Friday 09/12/2022

**Time:** 10 am to 12.00 pm

**Course Code:**

**Max. Marks- 50**

**Instructions:**

- Question No. 1&2 is compulsory.
- Figure to the right indicate full marks.

ii. Figure to the right indicate full marks.

BT	CO's	Q.No.		Marks																												
		Q.1	All Questions are compulsory	20 M																												
2	CO1	a	Explain machine learning life cycle	7 M																												
2	CO2	b	Explain feature scaling techniques used in machine learning	6 M																												
2	CO2	c	Explain K-Nearest Neighbor learning algorithm for discrete valued target function	7 M																												
		Q.2	All Questions are compulsory	10 M																												
2	CO3	a	State and explain Baye's theorem	4 M																												
3	CO3	b	Describe Bayesian Belief Network (BBN) with example	6 M																												
			OR																													
		b	Explain Naïve Baye's Classifier algorithm with an suitable example																													
		Q.3	All Questions are compulsory	10 M																												
2	CO3	a	Explain SVM classifier with suitable example	5 M																												
4	CO3	b	Draw decision tree for the training example using ID3 algorithm	5 M																												
			<table><tr><th>Instance</th><th>Classification</th><th>a<sub>1</sub></th><th>a<sub>2</sub></th></tr><tr><td>1</td><td>+</td><td>T</td><td>T</td></tr><tr><td>2</td><td>+</td><td>T</td><td>T</td></tr><tr><td>3</td><td>-</td><td>T</td><td>F</td></tr><tr><td>4</td><td>+</td><td>F</td><td>F</td></tr><tr><td>5</td><td>-</td><td>F</td><td>T</td></tr><tr><td>6</td><td>-</td><td>F</td><td>T</td></tr></table>	Instance	Classification	a <sub>1</sub>	a <sub>2</sub>	1	+	T	T	2	+	T	T	3	-	T	F	4	+	F	F	5	-	F	T	6	-	F	T	
Instance	Classification	a <sub>1</sub>	a <sub>2</sub>																													
1	+	T	T																													
2	+	T	T																													
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4	+	F	F																													
5	-	F	T																													
6	-	F	T																													
			OR																													
		b	Explain different types of kernel functions of SVM																													
		Q.4	Attempt any two out of three questions	10 M																												
3	CO4	a	Explain the K mean Clustering algorithm and Cluster the following set of data $K=\{2,3,4,10,11,12,20,25, 30\}$ $K = 2$ and $m_1=4$ and $m_2 =12$ as initial seeds.	5 M																												
2	CO4	b	Describe Agglomerative Hierarchical clustering algorithm	5 M																												
2	CO4	c	Write a note on methods and techniques used in text mining	5 M																												

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