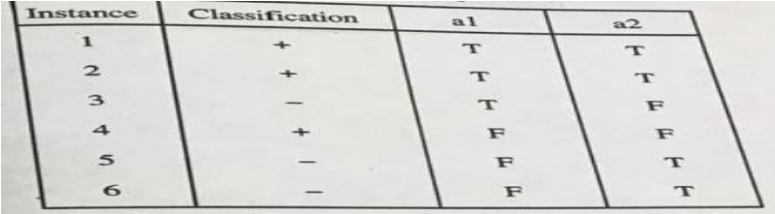
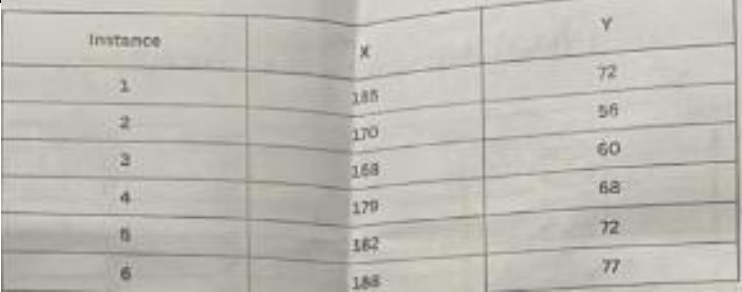
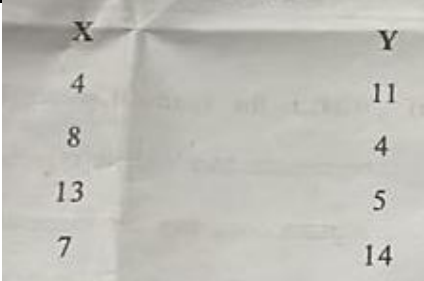


Satyug Darshan Institute of Technology, Faridabad		
	Programme: Btech	Year:/Semester:5th
	Subject Name : Basics of Machine Learning	Subject Code:PEC-CS-D-501(I)
Prepared By: Ms. Rachana Srivastava		
Unit -1		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Define active learning	KL1
2	State the application of Radial basis function	KL1
3	Define are outliers? List any two methods to deal with outliers.	KL1
	Define the following.	KL1
	(i) Prior Probability	KL1
	(ii) Conditional Probability	KL1
	(iii) Posterior Probability.	KL1
4	Explain Accuracy, precision, recall and F1-Score.	KL2
5	Explain reason why are SVMs often Ignore accurate than logistic regression?	KL2
6	Explain Gini Index.	KL2
7	List the type of Machine learning.	KL1
8	List kernel function in SVM	KL1
9	List Classification Algorithm Name	KL1
10	State the difference of supervised and unsupervised algorithm	KL1
Long Questions		
S. No.	Questions	Bloom Taxonomy
1	Distinguish between classification and regression	KL3
2	Define evolutionary computation	KL1

3	Explain linearly separable problem.	KL1
4	proper diagram.	KL2
5	Describe KNN algorithm, why it is called instant based learning.	KL2
6	Explain working of Naïve Bayes algorithm useful in learning and classifying text.	KL2
7	algorithm.	KL2
8		KL3
9	(a). Calculate the entropy (b) calculate the information gain with respect to a2	KL3
10	Write short notes on Linear regression	KL3
11	Derive the expression for minimizing cost function in linear regression.	KL4
	with an example. What is the use of Gini Index	KL4

Unit -2

Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Define is Ranking.	KL1
2	Define PCA and its kernels.	KL1
3	Define Unsupervised algorithm	KL1
4	Explain feature extraction with its methods.	KL2
5	Explain feature Selection with its methods.	KL2
6	Differentiate between Batch Gradient Descent and Stochastic Gradient Descent.	KL3
7	Explain techniques of feature extraction .	KL2
Long Questions		
S. No.	Questions	Bloom Taxonomy
1	Define objective of Principal Component Analysis (PCA)	KL2
2	Explain k-means algorithm and its kernels.	KL2
3	Explain how covariance is different from correlation? What is Pearson's Coefficient?	KL2
4	m=4. The distance function used is Euclidean distance. {2, 4,10, 12, 3, 20. 30, 11. 25}.	KL4
5	same method for feature selection or classification? Give reasons to support your answer.	KL2

6		KL4
	For above data apply K-means algorithm considering K=2 upto two iteration and show the cluster. Initially choose first two objects as a centroid.	
7		KL4
	Reduce the dimensionality of above data using PCA algorithm.	

Unit -3		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Describe is curse of Dimensionality	KL2
2	Describe LMS weight update rule.	KL2
3	Discuss the term bias and variance. Explain bias- variance trade-off .	KL1
4	Explain Cross Validation techniques and its types.	KL2
5	Explain Descriptive Statistics.	KL2
6	Discuss Ensemble learning	KL2

Long Questions		
S. No.	Questions	Bloom Taxonomy
1	Describe model evaluation approaches.	KL2
2	Explain matrix completion.	KL2

3	Differentiate boosting bagging and random forest.	KL4
4	Write Short note on crossover and mutation.	KL3
5	Explain matrix factorization method with suitable example.	KL2
6	Explain reinforcement learning.	KL2
7	latent factor model.	KL2
8	Describe perspective learning and issues in it.	KL2
9	Define sparse learning	KL1
10	Explain Statistical learning theory with real life example.	KL2

Unit -4		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	List the type of Machine learning.	KL1
2	Discuss is Time-series data.	KL2
3	Explain Statistical learning theory	KL2
4	State the Application of Scalable learning.	KL1
Long Questions		
S. No.	Questions	Bloom Taxonomy
1	State the need of multilayer feed Forward neural network	KL1
2	Explain the various application of ML for IOT.	KL2
3	Discuss deep learning and how it is different from other learnings.	KL2
4	Explain Bayesian belief network and conditional independence with example	KL2
5	classification methods.	KL3
6	Discuss Scalable machine learning.	KL2
7	Discuss in detail AR/ARMA/ARIMA ? Explain.	KL2
8	Draw and explain architecture of neural network.	KL4
9	Define active learning? How is it different from Reinforcement learning.	KL2
10	Explain online and distributed learning.	KL2

	<table><tr><th>S.No</th><th>Color</th><th>Legs</th><th>Height</th><th>Smelly</th><th>Species</th></tr><tr><td>1</td><td>White</td><td>3</td><td>Short</td><td>Yes</td><td>M</td></tr><tr><td>2</td><td>Green</td><td>2</td><td>Tall</td><td>No</td><td>M</td></tr><tr><td>3</td><td>Green</td><td>3</td><td>Short</td><td>Yes</td><td>M</td></tr><tr><td>4</td><td>White</td><td>3</td><td>Short</td><td>Yes</td><td>M</td></tr><tr><td>5</td><td>Green</td><td>2</td><td>Short</td><td>No</td><td>H</td></tr><tr><td>6</td><td>White</td><td>2</td><td>Tall</td><td>No</td><td>H</td></tr><tr><td>7</td><td>White</td><td>2</td><td>Tall</td><td>No</td><td>H</td></tr><tr><td>8</td><td>White</td><td>2</td><td>Short</td><td>Yes</td><td>H</td></tr></table>	S.No	Color	Legs	Height	Smelly	Species	1	White	3	Short	Yes	M	2	Green	2	Tall	No	M	3	Green	3	Short	Yes	M	4	White	3	Short	Yes	M	5	Green	2	Short	No	H	6	White	2	Tall	No	H	7	White	2	Tall	No	H	8	White	2	Short	Yes	H	
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11	Explain Bayesian Learning and inference. Using the above data, identify the species of an entity with the following attributes (X=Color=Green, Legs=2, Height=Tall, Smelly=No)	KL2																																																						
12	Explain advantage and limitation of deep learning	KL2																																																						