Code No: R2031423 **R20** SET - 1

III B. Tech I Semester Regular/Supplementary Examinations, December -2023

MACHINE LEARNING

CSE(AIML),CSE(AI),CSE(DS),CSE(AIDS),AIDS,AIML

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

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UNIT-I

1.	a)	Write a detailed note on Deep Learning.	[7M]
	b)	Explain in detail about Supervised Learning.	[7M]
		(OR)	
2.	a)	Discuss in detail the main challenges of Machine Learning.	[7M]
	b)	Write a brief note on Training and Test Loss.	[7M]

UNIT-II

3.	a)	Explain in detail about Distance Based Methods.	[7M]
	b)	Discuss in detail about MNIST.	[7M]
		(OR)	
4.	a)	Discuss in detail about Decision Trees.	[7M]
	b)	Briefly explain about Multiclass/ Structured outputs.	[7M]

UNIT-III

5.	a)	Discuss in detail about Voting Classifiers.	[7M]
	b)	Discuss about SVM Regression in detail.	[7M]
		(OR)	
6.	a)	Discuss about Random Forests in detail.	[7M]
	b)	Explain in detail about Linear SVM Classification.	[7M]

UNIT-IV

7.	a)	What is Clustering? Explain how to use Clustering for Image Segmentation.	[7M]
	b)	Discuss about Kernel PCA.	[7M]
		(OR)	
8.	a)	Discuss in detail the Limitations of K-Means.	[7M]
	b)	Discuss about the Curse of Dimensionality in detail.	[7M]

UNIT-V

9.	a)	What is ANN? Explain in detail about Logical Computations with Neurons.	[7M]
	b)	Discuss the steps involved in installing TensorFlow 2.	[7M]
		(OR)	
10.	a)	Write a brief note on Implementing MLPs with Kera.	[7M]
	b)	Describe in detail about Shuffling the data and Preprocessing the Data.	[7M]

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Code No: R2031423 **R20** SET - 2

III B. Tech I Semester Regular/Supplementary Examinations, December -2023

MACHINE LEARNING

CSE(AIML),CSE(AI),CSE(DS),CSE(AIDS),AIDS,AIML

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

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UNIT-I

1.	a)	What is Machine Learning? Explain in detail.	[7M]
	b)	Write a detailed note on Unsupervised Learning.	[7M]
		(OR)	
2.	a)	List out the types of Macine Learning Systems.	[7M]
	b)	Discuss about Estimating Risk Statistics in detail.	[7M]

UNIT-II

3.	a)	What is Supervised Learning? Explain in detail its Basic Methods.	[7M]
	b)	Discuss in detail about Generalized Linear Models.	[7M]
		(OR)	
4.	a)	Explain briefly about Nearest neighbours.	[7M]
	b)	Write a detailed note on Support Vector Machines.	[7M]

UNIT-III

5.	a)	Explain about Boosting in detail.	[7M]
	b)	Write a detailed note on Naïve Bayes Classifiers.	[7M]
		(OR)	
6.	a)	Explain in detail about Soft Margin Classification.	[7M]
	b)	Explain in detail about Polynomial Kernel in non-linear SVM.	[7M]

UNIT-IV

7.	a)	What is K-Means? Explain K-Means algorithm in detail.	[7M]
	b)	Discuss in detail about using Scikit-Learn.	[7M]
		(OR)	
8.	a)	Discuss in detail the main approaches for Dimensionality Reduction.	[7M]
	b)	Define PCA. Explain about Preserving the Variance in detail.	[7M]

UNIT-V

9.	a)	Discuss in detail about Multi-Layer Perceptron and Backpropagation.	[7M]
	b)	What is Prefetching? Explain its significance in the Data API.	[7M]
		(OR)	
10.	a)	Discuss in detail about Comppressed TFRecord Files.	[7M]
	b)	Discuss in detail the Categorical Features and Crossed Categorical Features.	[7M]

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Code No: R2031423 **R20** SET - 3

III B. Tech I Semester Regular/Supplementary Examinations, December -2023

MACHINE LEARNING

(CSE(AIML),CSE(AI),CSE(DS),CSE(AIDS),AIDS,AIML

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1.	a)	What is Artificial Intelligence? Explain in detail.	[7M]
	b)	Distinguish between Supervised and Unsupervised Learning.	[7M]
		(OR)	
2.	a)	Distinguish between Machine Learning and Deep Learning.	[7M]
	b)	Explain in detail about Tradeoffs in Statistical Learning.	[7M]

UNIT-II

3.	a)	What is Classification? Explain how it is different from Regression.	[7M]
	b)	Write a detailed note on Logistic Regression.	[7M]
		(OR)	
4.	a)	Discuss about Naïve Bayes in detail.	[7M]
	b)	Explain in detail about Computational Complexity in Linear Regression.	[7M]

UNIT-III

5.	a)	Write a detailed note on Stacking.	[7M]
	b)	What is a Non-Linear SVM? Explain its Computational Complexity.	[7M]
		(OR)	
6.	a)	Discuss in detail about Random Forest Algorithm.	[7M]
	b)	Write a detailed note on Gaussian RBF Kernel.	[7M]

UNIT-IV

7.	a)	Explain in detail about Using Clustering for Preprocessing.	[7M]
	b)	Write a detailed note on Mainfold Learning.	[7M]
		(OR)	
8.	a)	Discuss in detail about DBSCAN.	[7M]
	b)	Explain in detail about Principal Componenets of PCA.	[7M]

UNIT-V

9.	a)	Compare and contrast Biological Neurons to Artificial Neurons.	[7M]
	b)	Write a detailed note on TensorFlow Photobufs.	[7M]
		(OR)	
10.	a)	Discuss in detail about the Perceptron.	[7M]
	b)	Discuss in detail about Encoding Categorical Features using Embeddings.	[7M]

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Code No: R2031423 **R20** SET - 4

III B. Tech I Semester Regular/Supplementary Examinations, December -2023

MACHINE LEARNING

CSE(AIML),CSE(AI),CSE(DS),CSE(AIDS),AIDS,AIML

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1.	a)	Discuss in detail types of Machine Learning Systems.	[7M]
	b)	What is Statistical Learning? Explain in detail.	[7M]
		(OR)	
2.	a)	Discuss about Sampling distribution of an Estimator.	[7M]
	b)	Write a detailed note on Emprical Risk Minimization.	[7M]

UNIT-II

3.	a)	Explain in detail about Linear Regression.	[7M]
	b)	Discuss in detail about Multiclass Outputs.	[7M]
		(OR)	
4.	a)	Discuss in detail about Ranking.	[7M]
	b)	Distinguish between Linear and Non Linear SVM.	[7M]

UNIT-III

5.	a)	Explain in detail about Out of Bag Evaluation.	[7M]
	b)	What is Ensemble Learning? Explain with a suitable example..	[7M]
		(OR)	
6.	a)	Explain in detail about Adding similarity features in Non-Linear SVM Classification.	[7M]
	b)	Intrepret the concept of tacking in ensemble learting.	[7M]

UNIT-IV

7.	a)	Explain in detail about Using Clustering for Semi-Supervised Learning.	[7M]
	b)	Discuss in detail about How clustering will be used for image segmentation?	[7M]
		(OR)	
8.	a)	Explain Projecting down to ***d*** Dimensions in PCA in detail.	[7M]
	b)	Discuss in detail about Bayesian Gaussian Mixture Models.	[7M]

UNIT-V

9.	a)	Discuss in detail about Regression MLPs and Classification MLPs.	[7M]
	b)	Discuss in detail about Encoding Categorical Features using One-Hot vectors.	[7M]
		(OR)	
10.	a)	Explain in detail about the Data API.	[7M]
	b)	Discuss about Loading and Parsing Examples in The TFRecord Format.	[7M]

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