GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

I M.Tech II Sem – I Mid Examinations

Subject: Machine Learning and its Applications

Date: 18-03-2019 Time: 1hr 30 min

Answer any 4 questions. Each question carries 5 marks.

1. Define Supervised Learning? Explain about KNN Classification algorithm (CO1)
2. Describe Naïve Bayes algorithm with example (CO1)
3. Write short notes on Linear Regression. (CO1)
4. Distinguish between PCA and Kernel PCA(CO1)
5. Explain the importance of Matrix Factorization and its applications.(CO2)
6. What is Model Selection? How do you evaluate machine learning algorithms (CO2)

CODE:GR18D5014	GR 18	SET - 4

M.Tech I Year II Semester Regular Examinations, July 2019

MACHINE LEARNING AND APPLICATIONS
(Computer Science and Engineering)

Time: 3 hours **Max Marks: 70**

Instructions:

1. Question paper comprises of **Part-A** and **Part-B**
2. **Part-A** (for 20 marks) must be answered at one place in the answer book.
3. **Part-B** (for 50 marks) consists of **five questions with internal choice,** answer all questions.

PART – A
(Answer ALL questions. All questions carry equal marks)
10 * 2 = 20 Marks

1.	**a.**	Define Supervised Learning.	**[2]**
	b.	What is Unsupervised Learning? Give example.	**[2]**
	c.	Define feature selection method.	**[2]**
	d.	Write the significance of PCA.	**[2]**
	e.	What is cross validation?	**[2]**
	f.	What is Boosting?	**[2]**
	g.	Explain the importance of Deep learning.	**[2]**
	h.	What is sparse estimation?	**[2]**
	i.	Compare and contrast Online learning with Distributed learning.	**[2]**
	j.	What is Reinforcement Learning?	**[2]**

PART – B
(Answer ALL questions. All questions carry equal marks)
5 * 10 = 50 Marks

2.	**(a)**	Discuss about Naive Bayes.	**[10]**
	(b)	What is linear regression? How is it useful?	

OR

3.	**(a)**	Explain about Logistic Regression.	**[10]**
	(b)	Discuss about Support Vector Machines.	
4.	**(a)**	Define Clustering. Write short notes on kernel K-Means Clustering.	**[10]**
	(b)	Discuss about Matrix Factorization.	

OR

5.	**(a)**	Explain about latent factor models.	**[10]**
	(b)	Discuss about Dimensionality Reduction.	

6.	**(a)**	Explain about Model Selection.	**[10]**
	(b)	Describe about Bagging.	

OR

7.	**(a)**	Explain about Ensemble Methods.	**[10]**
	(b)	Describe statistical Learning theory.	
8.	**(a)**	How is modelling of sequence data performed? Give examples.	**[10]**
	(b)	Describe about Deep learning.	

OR

9.	**(a)**	Discuss the significance of Feature representation learning.	**[10]**
	(b)	How is modelling of Time Series data performed? Give examples.	
10.	**(a)**	Write short notes on Bayesian Learning.	**[10]**
	(b)	Discuss the significance Scalable Machine Learning.	

OR

11.	**(a)**	Describe about Inference in Graphical Models.	**[10]**
	(b)	Enumerate the recent trends in various learning techniques of machine learning.	

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