Total No. of Questions : 4]

SEAT No. :

PC-56

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T.E. (IT) (Insem.)

MACHINE LEARNING

(2019 Pattern) (Semester - I) (314443)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) ***Answer Q1 or Q2, Q3 or Q4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary.***

Q1) a) Explain with example Predictive and Descriptive tasks of Machine Learning. Also state Predictive and Descriptive Model (CO1). **[6]**

b) Explain k-fold Cros Validation technique with example (CO1). **[5]**

c) Write a note on Principal Component Analysis (PCA) (CO1) **[4]**

OR

Q2) a) Justify which type of learning could be the most appropriate, considering any one real world application of Machine Learning also explain your reasoning (CO1). **[6]**

b) Explain Reinforcement Learning with diagram (CO1). **[5]**

c) Discuss various scales of measurement of features in machine learning (CO1). **[4]**

Q3) a) What is multiclass classification? Explain One-Vs-Rest and One-vs-One multiclass classifier construction method with suitable example (CO2). **[6]**

b) Explain true positive, true negative, false positive, false negative and class ratio for classification task (CO2). **[5]**

c) Explain linear Support vector machine with suitable diagram (CO2). **[4]**

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OR

Q4) a) What is binary classification? Consider the following confusion matrix: **[6]**

		Predicated		
		+	–	Total
Actual	+	25	5	30
	–	10	20	30
Total		35	25	60

Calculate

i) Recall

ii) Precision

iii) Accuracy

iv) F1-score

v) Justify which evaluation measures will be more suitable for above matrix (CO2).

b) What are support vectors in Support vector Machine? Explain Hard and soft margin SVM with the suitable diagram (CO2). **[5]**

c) Write short note on Logistic regression (CO2). **[4]**

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