

Total No. of Questions : 4]

SEAT No. :

PE55

[Total No. of Pages : 2

[6579]-356

T.E. (IT) (Insem)

MACHINE LEARNING

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

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2 and Q.3 or Q.4.*
- 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 Types of Data, Scales of Measurement & Concept of Feature.[6]

b) Explain Leave one out cross validation LOO CV Technique with suitable example. **[5]**

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

OR

Q2) a) Show how Machine Learning Differs from traditional Programming. Elaborate with suitable diagram. [6]

b) What is need of Feature selection Method? Explain different types of Feature selection Method. **[5]**

c) Explain Training and Testing dataset. Why size of Training dataset is more compare to testing dataset. **[4]**

P.T.O.

Q3) a) Consider the following 2 X 2 confusion matrix. [6]

Actual/Prediction	Covid-19 Positive (Prediction)	Covid-19 Negative (Prediction)	Total
Covid-19 Positive (Actual)	45	20	65
Covid-19 Negative (Actual)	05	30	35
TOTAL	50	50	100

Calculate its

- Precision
- Recall
- Accuracy
- F1-score
- Justify

Which evaluation measures will be more suitable for above matrix.

- What is multiclass classification? Explain One-Vs-All construction method of multi class classifier with suitable example. [5]
- Explain Hyperplanes and Support Vectors. [4]

OR

Q4) a) Consider the following three class confusion matrix. [6]

		Predicated			
		A	B	C	
Actual	A	14	3	3	20
	B	5	15	10	30
	C	2	5	43	50
		21	23	56	100

Calculate per class precision, per class recall, weighted average precision, weighted average recall of accuracy.

- What is a role kernel in SVM? Explain various functions used to handle non-linear data. [5]
- Explain ROC (Receiver Operating Characteristics) curve. [4]

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