

Total No. of Questions : 4]

SEAT No. :

P8579

[Total No. of Pages : 2

Oct-22/TE/Insem-559
T.E. (IT)
MACHINE LEARNING
(2019 Pattern) (Semester - I) (314443)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) *Answer Q.1 or Q.2, 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) Show how machine learning differs from traditional programming. Elaborate with suitable diagram. [6]
b) Explain K-fold Cross Validation technique with suitable example. [5]
c) What is Dataset? Differentiate between Training dataset and Testing dataset. [4]

OR

- Q2)** a) Compare Supervised, Unsupervised and Semi-supervised Learning with examples. [6]
b) What is the need of dimensionality reduction? Explain subset selection method. [5]
c) What is feature? Explain types of feature selection technique. [4]

- Q3)** a) Consider the following three-class confusion matrix. Calculate Per-Class-Precision, Per-Class-Recall, weighted average precision, weighted average recall and accuracy. [6]

	Predicted Values			
	A	B	C	
Actual Values	A	45	10	05
	B	08	30	07
	C	06	04	40

P.T.O.

- b) Explain One-Vs-One construction method of multiclass classifier with suitable example. [5]
- c) Explain linear Support vector machine with suitable diagram. [4]

OR

- Q4)** a) What is multiclass classification? Explain One-Vs-Rest and One-vs-One multiclass classifier construction method with suitable example. [6]
- b) Write a short note on : [5]
- Various SVM kernel functions used to handle non-linear data.
- c) Define the following terms : [4]
- Accuracy.
 - Precision.
 - Recall.
 - F1-score.