

Total No. of Questions : 8]

SEAT No. :

PD4577

[Total No. of Pages : 2

[6404]-82

**B.E. (Computer Engineering)
MACHINE LEARNING
(2019 Pattern) (Semester - VII) (410242)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Make suitable assumption whenever necessary.

- Q1)** a) Explain Linear Regression in brief. [6]
b) Differentiate overfitting and under fitting with example. [6]
c) Write short note on Training error and Generalization error in machine learning. [6]

OR

- Q2)** a) Explain in brief importance of Evaluation matrix. [6]
b) Write short note on Lasso and Ridge Regression. [6]
c) Memory (Capacity) and cost of RAM as shown in below table. [6]

X (Memory Capacity) in GB	2	4	8	16
Y (Cost in \$)	12	16	28	62

- i) Find Regression line $Y = aX + b$ using least square method.
- ii) Estimate the cost of 32 GB RAM using line as equation.

- Q3)** a) Differentiate Binary classification with multiclass classification with example. [5]
b) Explain with example ensemble learning in ML. [6]
c) Write short note on metrics for Evaluating classifier performance. [6]

OR

- Q4)** a) Explain KNN with example. [5]
b) Write short note on handling imbalance data in multiclass classification. [6]
c) Explain Bagging and Boosting used in ensemble learning. [6]

- Q5)** a) Explain Hierarchical clustering with example. [6]
b) What is outlier Analysis? Explain it with importance, advantages & disadvantages. [6]
c) Write short note on Elbow method used in K-mean clustering. [6]

OR

- Q6)** a) Compare Intrinsic motivation with extrinsic motivation. [6]
b) Explain K mean clustering with essential steps used in it. [6]
c) Write short note on.
i) Graph Based clustering
ii) Density Based clustering

- Q7)** a) Write short note on importance of Activation function used in Neural Network. [5]
b) Explain Recurrent Neural Network with Example. Compare it simple CNN. [6]
c) Draw & Explain CNN architecture. [6]

OR

- Q8)** a) Compare Back propagation Network with feed forward Network. [5]
b) What are different types of padding used in CNN? [6]
c) Write short note on layers used in CNN.
i) Convolutional layer
ii) Pooling layer

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