Exam.Code:1005
Sub. Code: 35085

2124

M. E. (Information Technology)
First Semester
MEIT-1205: AI and Machine Learning

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

1 (a) What are various differences between breadth first search and depth first search?

(b) How maximum likelihood estimation works?

(c) What is the difference between Relu and sigmoid activation functions?

(d) Which technique can be used to classify nonlinearly separable data?

(e) What are the various unsupervised learning techniques? (5x2)

UNIT - I

2 Calculate residual sum of squares error for the data shown in the table below. (10)
Where $\theta_0 = 10, \theta_1 = 4$. Update these weights using gradient descent method for one iteration.

X	Y (target)
3	40
5	60
8	70

3. (a) What is the use of regularization technique? Write equation for regularized error function. (5)

(b) Solve water jug problem using depth first search method. (5)

4. Create dummy data for 5 positive and negative restaurant reviews. Perform logistic regression on the data and design prediction model. (10)

UNIT - II

5. Perform K means clustering for the following data (10)
X = { (3,3), (4,2), (8,9),(9,10)}

6. (a) Compare Principal component analysis method and Linear discriminant analysis. (5)

(b) What is the cocktail party problem and how is it resolved? (5)

7 Write note on the following (10)
(a) CNN
(b) Transfer learning

x-x-x