

Exam.Code:0925

Sub. Code: 6868

2071

B.E. (Information Technology) Seventh Semester
IT-702: 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

I. Attempt the following:-

- a) What do you understand by noise in the data? How it affects the results?
- b) How is KNN different from k-means clustering? Explain briefly.
- c) Define Precision and Recall.
- d) When should you use classification over regression? Explain using example.
- e) What do you understand by over fitting of data? Give any two methods to avoid over fitting. (5x2)

UNIT - I

- II. a) What is Linear Regression? Explain in detail using example and list all the assumptions to be met before starting with linear regression. (8x2)
b) Differentiate between regression and classification.
- III. a) How generative learning is different from discriminative learning with respect to accuracy and handling of missing data? List the different classifiers used in both kind of learning.
b) Explain Bayesian estimation and maximum likelihood estimation in generative learning. (2x5)
- IV. a) What are Artificial Neural Networks? Explain any three activation functions used in neural networks?
b) Explain the Feed Forward Neural Network using example. List the applications areas where it can be used. (2x5)

P.T.O.

(2)

UNIT - II

- V. a) What are Bayesian Networks? Explain using Example. What do they predict?
b) What are hidden markov models used for? What is the difference between Markov model and hidden Markov model? (4,6)
- VI. Explain expectation maximization algorithm and when we need to use it? What is Gaussian mixture density estimation? (10)
- VII. a) What do you mean by Feature Extraction? Explain Principal Component Analysis (PCA) algorithm for feature extraction.
b) What is Feature selection? Explain any two methods for feature selection. (2x5)

x-x-x