

GUJARAT TECHNOLOGICAL UNIVERSITY**ME – SEMESTER – II (New)– EXAMINATION – WINTER-2019****Subject Code: 3720223****Date: 22-11-2019****Subject Name: Advanced Machine Learning****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain Supervised and Unsupervised Learning **07**
 (b) Compare Parametric and Non-parametric Method **07**
- Q.2** (a) Explain kernel methods for Support Vector Machine (SVM) **07**
 (b) Explain Latent Semantic analysis **07**
- OR**
- (b) Explain Kernel PCA **07**
- Q.3** (a) Explain Bayesian Belief Networks **07**
 (b) Define Expectation-maximization (EM) and compare with MLE (Maximum Likelihood Estimation) **07**
- OR**
- Q.3** (a) Explain Error function for Boosting **07**
 (b) Explain Bayesian inference **07**
- Q.4** (a) What is Dimensionality Reduction? Why is Dimensionality Reduction important in Machine Learning and Predictive Modeling? **07**
 (b) Explain Feature Selection vs Feature Extraction **07**
- OR**
- Q.4** (a) Explain Independent component analysis(ICA) **07**
 (b) Explain Canonical correlation analysis (CCA) **07**
- Q.5** (a) Define Random forest? Adaptive Nearest Neighbors **07**
 (b) Explain Recommender Systems **07**
- OR**
- Q.5** (a) Explain Low-Rank approaches **07**
 (b) Explain Recent trends in supervised and unsupervised learning algorithm **07**
