

**GUJARAT TECHNOLOGICAL UNIVERSITY****ME – SEMESTER – I (New)– EXAMINATION – WINTER-2019****Subject Code: 3710216****Date: 09-01-2020****Subject Name: 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) What is Machine Learning? Explain steps to develop a machine learning application **07**  
(b) Differentiate Supervised and Unsupervised learning based on its features **07**
- Q.2** (a) Explain Classification and Regression with its real time applications **07**  
(b) List basic methods of Supervised Learning and explain any two methods in detail **07**
- OR**
- (b) List different classifiers used in machine learning. Explain KNN and SVM classifiers **07**
- Q.3** (a) What do you mean by Clustering? Explain K-means clustering algorithm **07**  
(b) Explain Generalized Linear Models (GLM) **07**
- OR**
- Q.3** (a) Explain Principal Component Analysis (PCA) method with its advantages **07**  
(b) Explain Model selection and evaluation with its required parameters **07**
- Q.4** (a) Why ensemble methods are useful in machine learning? Explain different types of ensemble methods **07**  
(b) What is deep learning? How it will be different from Machine learning? Also explain importance of deep learning by real time application example **07**
- OR**
- Q.4** (a) Describe CART and explain it with suitable example **07**  
(b) Why scalable machine learning is important? Explain its usefulness with real time example **07**
- Q.5** (a) How machine learning techniques will be helpful for IOT based applications in detail? **07**  
(b) Explain Semi supervised learning, Active learning and Reinforcement learning method **07**
- OR**
- Q.5** (a) Explain different types of Neural Networks used in machine learning in detail **07**  
(b) Explain Bayesian Linear and Logistic regression in detail **07**

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