Prof. S P Ghrera

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -3 EXAMINATION- May 2019
B.Tech(CSE/IT) VIII Semester

COURSE CODE: 18B1WCI832 **MAX. MARKS: 35**
COURSE NAME: Machine Learning Algorithms
COURSE CREDITS: 3 **MAX. TIME: 2 Hrs**

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Use of calculators is permitted.

Q.1. [10 Marks. Each part is two marks]

a) Derive an expression for cosine similarity measure.
b) What is purpose of cross validation data set?
c) Define hyperplane in SVM.
d) Describe performance measure for prediction accuracy.
e) What is overfitting in machine learning?

Q.2. [5 marks]

(a) Describe the two basic approaches for designing a recommender system.

(b) Given below is the training data pertaining to three attributes of three computer systems A, B and C. Design a suitable recommender system.

Attribute	A	B	C
Processor Speed	3.06	2.68	2.92
Disk Size	500	320	640
Main Memory Size	6	4	6

Q.3. [4 marks] What is importance of dimmensionality reduction in machine learning. Describe five strategies for dimmensionality reduction.

Q.4. [5 marks] Describe anomaly detection problem in machine learning. Also explain the anomaly detection algorithm.

Q.5. [5 marks] Describe stepwise K mean clustering algorithm. How will you assess the likely value of K?

Q.6. [6 marks]Write short notes on the following.

a) Cost function in linear regression.
b) Machine learning experimental design.
c) KNN algorithm.