



**BHARATI VIDYAPEETH'S
INSTITUTE OF COMPUTER APPLICATIONS &
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Assignment –3

(Based on Unit IV)

MCA-III Semester

Course Code: MCA 203

Course Name: Artificial Intelligence and Machine Learning

1.	Discuss unsupervised learning problems. Explain Principal Component Analysis.	CO5	BTL6
2.	Considered any data from online tests and create clusters for K-means.	CO4, CO6	BTL6
3.	Explain collaborative filtering hypothesis with example.	CO5	BTL5
4.	Elaborate the formula for Pearson's correlation coefficient. Can Pearson's correlation coefficient measure correlation between points on a circle?	CO4, CO5, CO6	BTL6
5.	Design a Neural Network model for 8 input Nodes, 2 hidden layers having 4 and 5 hidden nodes and 1 output layer. Elaborate the mathematical expression for the same designed network.	CO5, CO6	BTL6
6.	Explain feed forward and back propagation algorithm taking a sample data [1000-2000].	CO6	BTL6
7.	Identify various activation function involved in neural networks. Elaborate with mathematical formula and graphs.	CO4, CO6	BTL6
8.	Discuss the algorithm for a recommender system which uses collaborative filtering.	CO4	BTL6