**COMPUTER ENGINEERING DEPARTMENT**

**ASSIGNMENT NO-02**

**SUB: Machine Learning**

**COURSE: T.E. Year: 2020-2021 Semester: VI**

**DEPT: Computer Engineering**

**SUBJECT CODE: CSDLO6021 SUBMISSION DATE: 03/05/2021**

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**Assignment No 2**

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| **Sr.**  **No.** | **Question** | **CO**  **mapping** |
| **1** |  | CO5 |
| **2** | Discuss the following terms Initial hypothesis, Expectation step, Maximization step w.r.t EM algorithm and discuss how initial hypothesis converges to an optimal solution with suitable example. | CO5 |
| **3** | Discuss the structure of RBFN and how it can be used to solve non-linearly separable pattern? | CO5 |
| **4** | Describe the two methods for dimensionality reduction and how Principal Component Analysis is carried out to reduce the dimensionality of data. | CO6 |
| **5** | Why Dimensionality reduction is a very important step in Machine Learning? Use Principle component analysis (PCA) to arrive at the transformed matrix for the given matrix A. | CO6 |
| **6** | Describe the down Hill Simplex method. Why it is called the Derivative-Free method? | CO3 |
| **7** | Minimize f(x1, x2) =4x1 -2x2 +2x12 + 2x1x2 +x22  With startingpoint X1 = using the steepest decent method. (Perform two iteration) | CO3 |
| **8** | Find the Singular value decomposition of A = and also List some advantages of derivative-based optimization techniques | CO3 |

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