National Institute of Technology Kurukshetra
Department Of Computer Engineering
Machine Learning and Data Analytics (CSIC-221)
Mid sem-2

Time- 50min **Max Marks-20**

All questions are compulsory and carry the same marks.

Q-1. Consider the two-dimensional patterns (2, 1), (3, 5), (4, 3), (5, 6), (6, 7), (7, 8) compute the principal component using PCA Algorithm **5 Marks**

Q-2. Explain the difference between population and sampling and explain the different sampling methods in detail.

Q.3. Find the coefficient of correlation (Pearson Correlation) between the values of X and Y given data.

X	128	129	130	140	132	135	125	130	132	135
Y	80	89	90	95	96	94	80	100	96	100

Q-4. Calculate the regression coefficient and obtain the lines of regression (Y on X and X on Y) for the following data.

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

OR

Calculate the minimize (Optimize) value of X for the given function, $f(x) = 3x^4 - 4x^3 - 12x^2 + 3$