Practical 1:
Draw a waveform. Use Equation for Linear Regressions Nos 1.1,1.2 and 1.3 to demonstrate the figures 1.4

Practical 2:(Refer section 1.2.5)

The goal in the curve fitting problem is to be able to make predictions for the

target variable t given some new value of the input variable x on the basis of a set of

training data comprising N input values $\mathbf{x} = (x_1, \ldots, x_N)^T$ and their corresponding T

target values $\mathbf{t} = (t_1, \ldots, t_N)$. We can express our uncertainty over the value of the target variable using a probability distribution. For this purpose, we shall assume that, given the value of x, the corresponding value of t has a Gaussian distribution with a mean equal to the value y(x, w) of the polynomial curve given by (1.1)

Practical 3(Bayesian Curve Fitting, Section-1.2.6)

Practical 4. Compute Entropy, KL Divergence of the image using section 1.6 for a Noisy Image and Noise Free image.

Practical 5. Draw Dirichlet Distribution(Section 2.2.1)

Practical 6

Take a regular Polygon and a irregular Polygon. Compare their Mahalanobi Distances.

Practical 7 : Record your speech and compute t-distribution, F-Distribution and K Distribution and compare.

Practical 8 : Refer section 2.3.9 and use mixture of Gaussians to represent a non Linear curve.

Practical 9. Refer section 3.2 to decompose a stationary random signal using Bias-Variance decomposition process.