DA-IICT, CT 303, Autumn 2024-2025
Lab Exercise 10
Date: 25/10/2024, Expected by: 08/11/2024
Prepared by: Dr. Abhishek Jindal

References for perusal:

[1] *Contemporary Communication Systems Using MATLAB*, John G. Proakis, and Masoud Salehi, 2013, Cengage learning.

[2] *Introduction to Communication Systems*, Upamanyu Madhow, Cambridge University press.

- In the exercise sheet, there are 2 lab problems.
- All the problems need to be done using MATLAB.
- The coding in MATLAB should be done in groups of 2.
- All the required soft copies of the texts referred to in the exercises are available in the lecture folder of the instructor for section A.

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1. Go through chapter 5 from [1], and solve the following from the problems given at the end of the chapter.
   (a) Problem 5.1
   (b) Problem 5.11
2. Go through chapter 7 (portions relevant to the problems below) from [1], and solve the following from the problems given at the end of the chapter.
   (a) Problem 7.1
   (b) Problem 7.7
   (c) Problem 7.9
   (d) Problem 7.12
   (e) Problem 7.17

   For one more reference, see [2]. From it, you may go through code fragment 6.3.1. Also, you may look through the exercises in software lab 6.1, which give the general flow to implement problems related to the problems given above.

Instructions for Preparing Lab Report:

- For experiments done on kit, you need to take a snap shot of each output on the oscilloscope. This can be done either by connecting a USB stick to the oscilloscope, or connecting the oscilloscope to the PC. Your lab report must contain these snapshots.
- You need to verify and subsequently mention in the report that the outputs given in the manual corresponding to the experiments are indeed correct.
- For MATLAB based experiments, your lab report must contain the code and all the figures. Further, you need to explain the results in the graphs.
- For tutorial problems, you need to put up the solution in the lab report.

General Instructions:

- The lab is intentionally made from the references given above so that you have ample resources to refer to and learn.
- For the final evaluation, we may have a quiz/lab test which will test if you have gone through the codes and tweaked them in Matlab.
- For learning Matlab functions used in the codes, refer to the help section which pops up as you press F1 in Matlab.