COMMUNICATION SYSTEMS

HOMEWORK # 6:

Please work out the **ten** (10) problems stated below – LD refers to the text: B,P. Lathi and Z. Ding, *Modern Digital and Analog Communication Systems* (Fourth Edition), Oxford University Press, Oxford (UK), 2009. Exercise **2.1-1** (LD) refers to Exercise 1 for Section 2.1 of LD.

   Show work and **explain** reasoning. Three (3) problems, selected at random amongst these ten problems, will be marked.

1.
Problem **5.1-1** (LD).

2.
Problem **5.1-2** (LD).

3.
Problem **5.1-3** (LD).

4.
Problem **5.1-4** (LD).

5.
Problem **5.1-5** (LD).

6.
Problem **5.2-1** (LD).

7.
Problem **5.2-2** (LD).

8.
Problem **5.2-4** (LD).

9.
Show that $J_k(\beta)$ is real for all $k = 0, \pm 1, \dots$ and β in $\mathbb{R}$.

10.
Draw the block diagram for the FDM system with twelve voice channels as depicted in Figure 4.25 (p. 212). Identify the blocks for both modulation and demodulation.