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 $k = 0, \pm 1, \ldots$ and $\beta$ 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.