

Test 1 for DSP lab

Prob. 1: Write the matlab program **P1.m** to sketch the signal in range **[-30,30]**. Evaluate then its energy.

$$x(n) = 3e^{-|n|/14} \cdot \cos(200\pi n) \cdot [u(|n| - 3) - u(|n| - 11) + u(|n| - 20) - u(|n| - 26)]$$

Prob. 2: A continuous time sinusoidal signal has its amplitude of 10, frequency of 1000 Hz is sampled at the sampling rate of 8000 Hz. Write the matlab program P2.m to sketch the following signals in the range of 2 periods.

- a. The continuous time signal.
- b. The naturally sampled signal.
- c. The flat-top signal.