**205NET**

**Assignment # 6**

**2nd semester 1439 /1440**

Q1) What is the Nyquist sampling rate for each of the following signals?

1. A low-pass signal with bandwidth of 150 KHz?
2. A band-pass signal with bandwidth of 200 KHz if the lowest frequency is 100 KHz?

Q2) We have sampled a low-pass signal with a bandwidth of 200 KHz using 1024 levels of quantization.

1. Calculate the bit rate of the digitized signal.
2. Calculate the SNRdB for this signal.
3. Calculate the PCM bandwidth of this signal

Q3) a message signal has Vmin= -2V and Vmax=+30V , we want to quantize it to 8 quantization levels after it has been sampled.

1. What is the Zone width?
2. Find zones?
3. What are the midpoints?
4. What are the bits codes of each zone?

Q4) Draw the staircase approximation signal and find the binary bits that will be sent after applying the Delta modulation for the following signal

