HACETTEPE UNIVERSITY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
ELE 409: DIGITAL SIGNAL PROCESSING LABORATORY
EXPERIMENT 3 - QUANTIZATION

Name & Surname: Student ID:

Q1. Zero-Mean Quantizer

myQuantizer code:

mySNR code:

1. Characteristic of quantizer for $B = 3$ and $X_m = 1$

Figure 1. Characteristic of quantizer

2. Quantization of **x**

a.   SNRin1:   SNRout1:

b.   SNRin2:   SNRout2:

c.   SNRin3:   SNRout3:

d. Input-Output Relation:

Figure 2. Input-Output Relation

Comment on Input-Output Relation:

e. Comment on Optimality

Optimum X_m :

e. Comment on Optimality

Figure 3. Histogram of Input Signal

Comment on the histogram of the input signal

3. 2-bit quantization

SNRout4 :   SNRout2 :

Q2. Adaptive Quantization

myAdaptiveQuantizer code:

SNRout2:   SNRout5:

Figure 5. Plot of **x**, **xquan2** and **xquan5**

Comment on the results: