Part A

Question 5

Table 1 Calculated Magnitude and phase of X[k]

n	x[n]	X[k]	Magnitude	Phase
0	12	20	20	0
1	0	4	4	0
2	8	20	20	0
3	0	4	4	0

Question 6

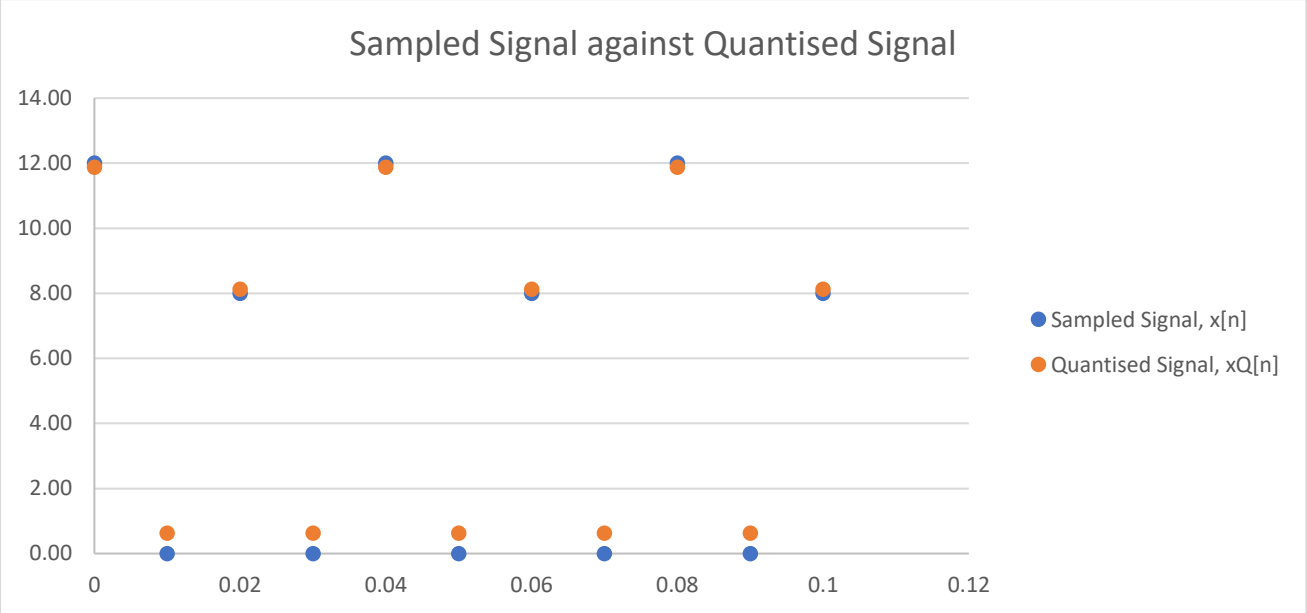

Figure 1 - Sampled Signal against Quantised Signal

Question 7

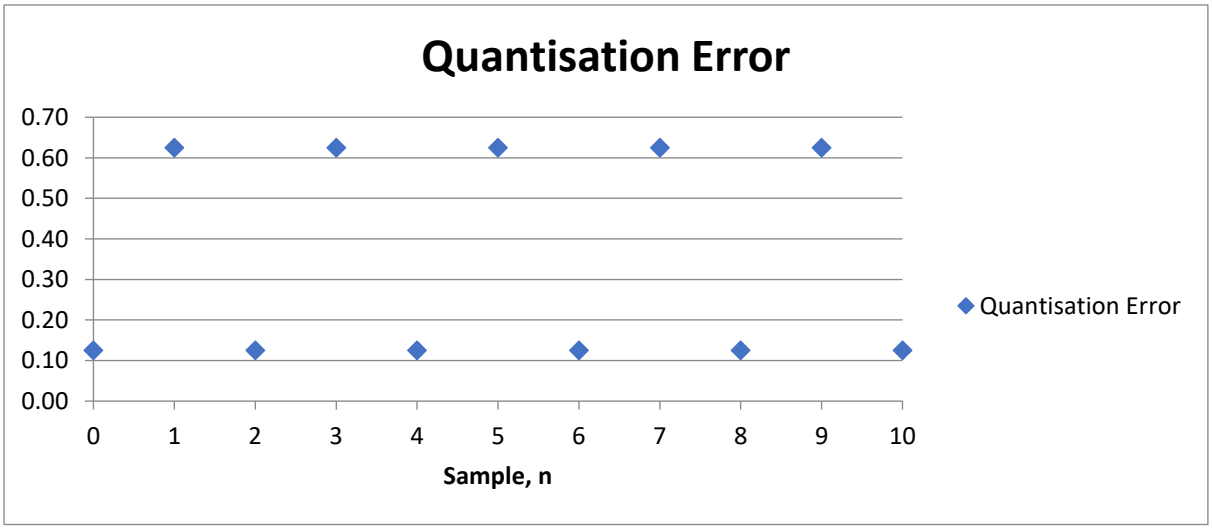

Figure 2 - Quantisation Error

Part B

Question 2

Table 2 - Samples of recovered signal

Sample, n	Time (s)	Low Noise Recovered Signal	High Noise Recovered Signal
0	0	11.25	11.25
1	0.01	0.00	0.00
2	0.02	7.50	5.00
3	0.03	0.00	6.25
4	0.04	11.25	11.25
5	0.05	0.63	0.00
6	0.06	8.13	2.50
7	0.07	0.63	1.25
8	0.08	11.88	16.25
9	0.09	0.63	0.00
10	0.1	8.13	7.50

Question 3

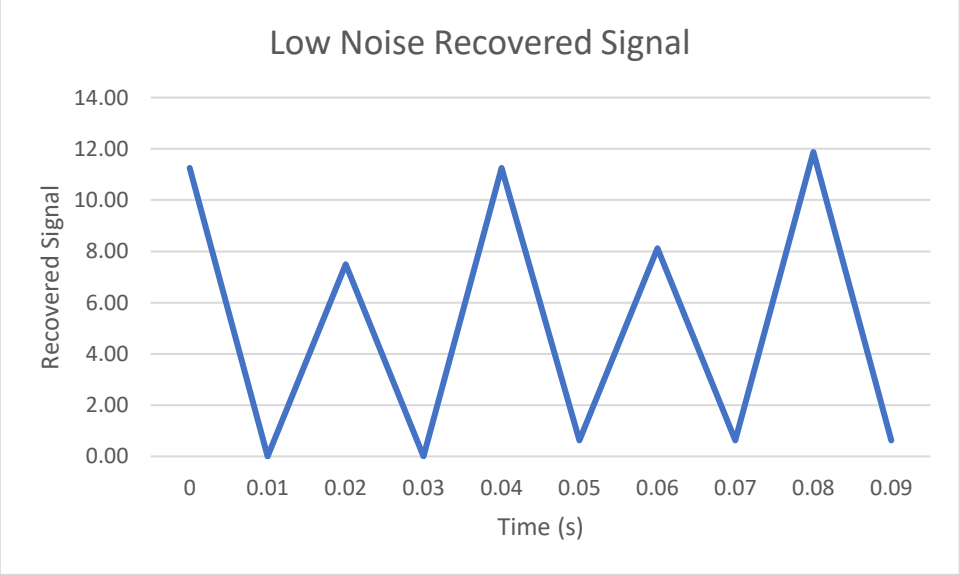

Figure 3 - Low noise

Part B

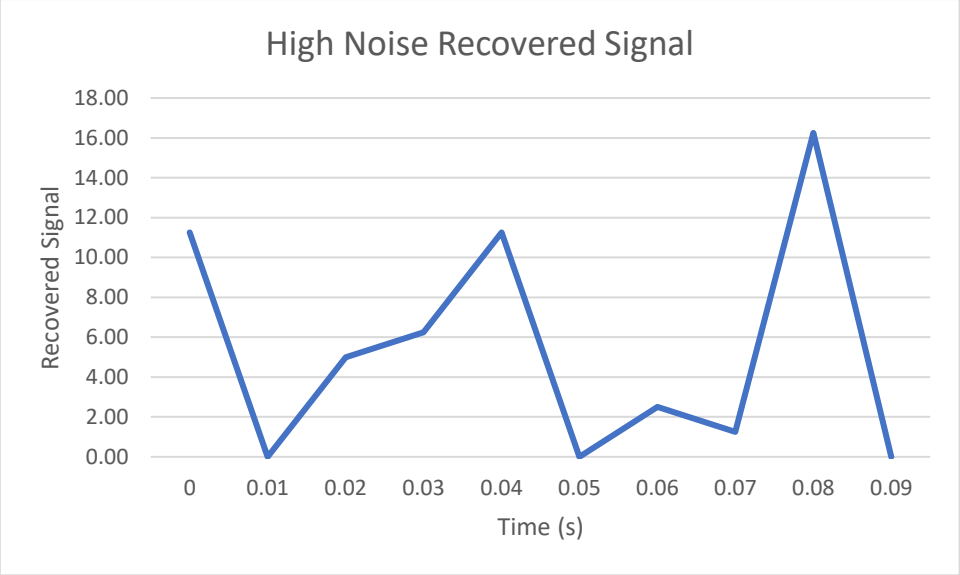

Figure 4 - High noise