ET0096 MST SAMPLE 2 ANSWERS:

A1	a		A6	c
A2	a		A7	b
A3	a		A8	a
A4	b		A9	a
A5	c		A10	d

B1 (i)
1.   *Sampling*: Conversion from a continuous-time analog signal to a discrete-time signal.

2.   *Quantization*: Conversion from a continuous-amplitude analog signal to a discrete-amplitude signal

(ii)

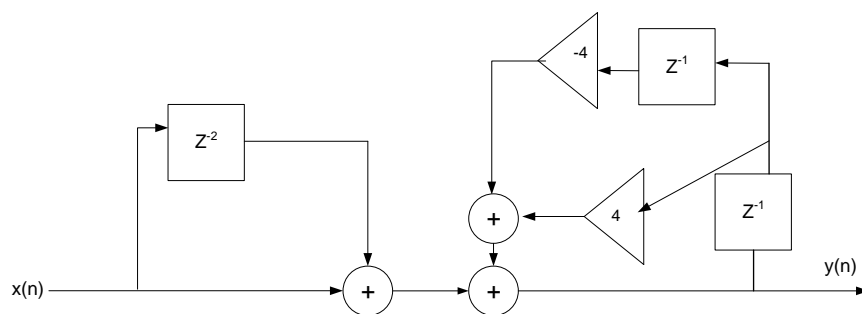A - *Anti-aliasing filter*
B – *Sampler*
C – *Quantizer*
D - DSP

b)   x(n)={5, 5, 5, 4, 5}

B2)
a) **y(0)= 1 y(1)= 4 y(2)= 13 y(3)= 36**

b)

c) h(n) increases…. System is unstable

B3

a) x(0) = y(0)/h(0) = 2/2 = 1

  x(1) = 2

   x(2) = 3

b) y(n) = { 1   -1   -5   2   3   -5   1   4}

c) y(n) ={2   6   6   2}

B4)

  a) x(n)   = { 0   0.3619   0.6550   0.8890   1.0725}

  b) x(n-2) = { 0   0   0   0.3619   0.655}

  c) x(n)+x(n-2) = {0   0.3619   0.6550   1.2509   1.7275}