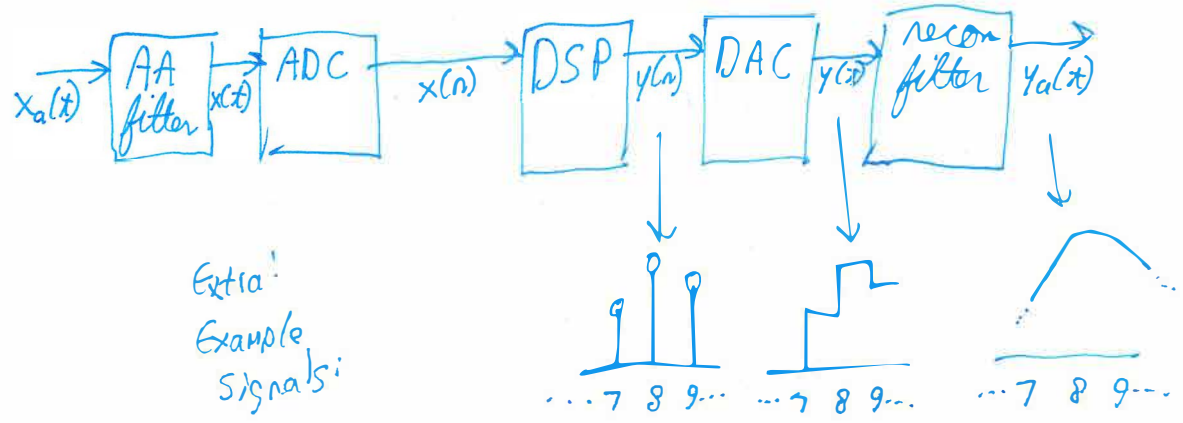Name _Answers_

EE-3220 – Dr. Durant – Quiz 1
Winter 2016-'17, Week 1

1. (2 points) Define "sampled."

2. (1 point) Besides being sampled, which is the other key property of a digital signal relative to an analog signal?

3. (3 points) Draw the basic DSP system block diagram including anti-alias and reconstruction filters, an ADC, and a DAC.
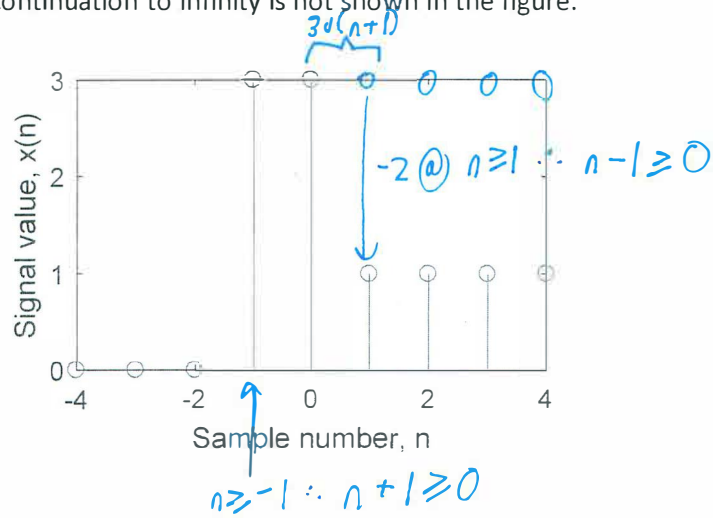
① "Sampled" means measuring a signal at a series of discrete, specific points in time.
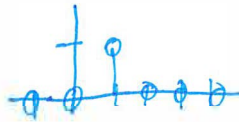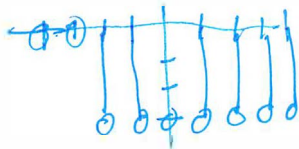
② It is quantized.

③

4. (1 point) Draw a stem plot sketch of x(n) = δ(n-1) for a reasonable range of n values.

5. (1 point) Draw a stem plot sketch of x(n) = -3u(n+2) for a reasonable range of n values.

6. (2 points) Express the signal in the given figure as the sum of 2 step functions. Note that x(n) = 1 for n>4, although this continuation to infinity is not shown in the figure.

$3u(n+1)$

$-2 @ n \geq 1 \quad \therefore n-1 \geq 0$

Signal value, x(n) — Sample number, n

$n \geq -1 \quad \therefore n+1 \geq 0$

④ $n-1 = 0 \therefore n = 1$

⑤ $n+2 \geq 0 \therefore n \geq -2$

⑥ $y(n) = 3u(n+1) - 2u(n-1)$