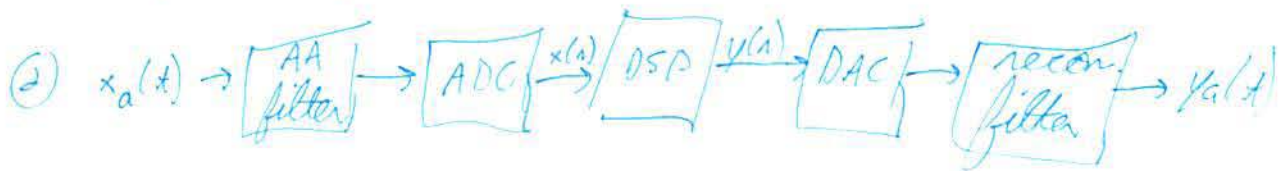


EE-3220-21 - Dr. Durant - Quiz 1  
Winter 2013-'14, Week 1

1. (2 points) Define "quantized."
2. (4 points) Draw the basic DSP system block diagram including anti-alias and reconstruction filters, an ADC, and a DAC.
3. (2 points) What is the purpose of an anti-alias filter?
4. (2 points) What is an advantage of DSP over analog SP?

(1) Not continuous in level, but rounded to an allowed, distinct level. Quantized values can be perfectly stored in finite-length binary values.



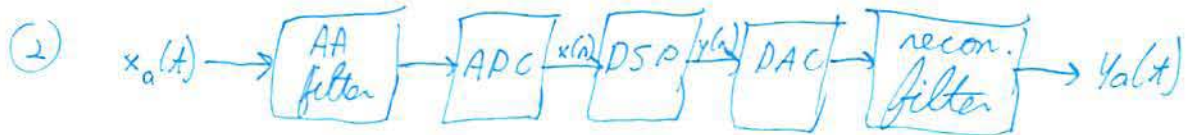
(3) To prevent high frequencies, which would otherwise erroneously be "aliased" (mistaken for) to lower frequencies from entering the digital, discrete-time system.

- (4) (a) stable operation over time  
(b) flexible  
(c) greater design complexity, feasible

EE-3220-41 - Dr. Durant - Quiz 1  
Winter 2013-'14, Week 1

1. (2 points) Define "discrete-time."
2. (4 points) Draw the basic DSP system block diagram including anti-alias and reconstruction filters, an ADC, and a DAC.
3. (2 points) What is the purpose of a reconstruction filter?
4. (2 points) What is an advantage of DSP over analog SP?

① The samples are taken at distinct, regular intervals in time.



③ To remove the stair-step, artificial shape of the analog waveform out of the DAC, smoothing it.

- ④
- (a) stable operation over time
  - (b) flexible
  - (c) greater design complexity feasible