

## Ch. 19: A-to-D and D-to-A Converters

19.1)

You wish to sample a signal with frequency content between 0 and 1 kHz with an A/D converter. What is the minimum sampling rate required to ensure that aliasing will not inhibit your ability to accurately interpret the data?

19.3)

For an A/D converter with  $V_{RL} = 0\text{ V}$  and  $V_{RH} = 5\text{ V}$ , what is the value of an LSB if the resolution of the converter is 8 bits? 10 bits? 16 bits? 24 bits?

19.4)

For an A/D converter with  $V_{RL} = -5\text{ V}$  and  $V_{RH} = 5\text{ V}$ , what is the value of an LSB if the resolution of the converter is 8 bits? 10 bits? 16 bits? 24 bits?

19.7)

For a 16-bit D/A converter with  $V_{RL} = -2.5\text{ V}$  and  $V_{RH} = 2.5\text{ V}$ , what input code would be needed to produce an output of 0.701 V?

19.8)

For an 8-bit A/D converter with  $V_{ref} = 5\text{ V}$ , what is the input voltage if the output code is 241 (decimal)?

19.9)

For a 20-bit A/D converter with  $V_{RL} = 0.25\text{ V}$  and  $V_{RH} = 3\text{ V}$ , what is the input voltage if the output code is 725,413 (decimal)?