PROBLEM:

For each short question, pick a correct frequency and enter its letter in the answer box.

Note: Some questions might have more than one answer.

Frequency

(a) 4000 Hz

(b) 2500 Hz

(c) 2000 Hz

(d) 800 Hz

(e) 600 Hz

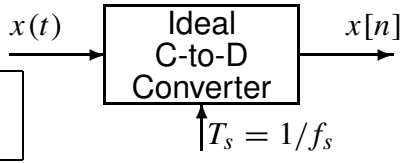
(f) 500 Hz

(g) 400 Hz

(h) 250 Hz

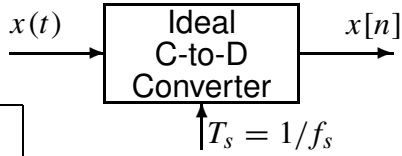
(i) 200 Hz

(a) If the output from an ideal C/D converter is $x[n] = A\cos(\pi n)$, and the sampling rate is 5000 samples/sec, then determine one possible value of the input frequency of $x(t)$:



ANS =

(b) If the output from an ideal C/D converter is $x[n] = A\cos(\pi n)$, and the input signal $x(t)$ defined by: $x(t) = A\cos(2500\pi t)$ then determine one possible value of the sampling frequency of the C-to-D converter:



ANS =

(c) Determine the Nyquist rate for sampling the signal $x(t)$ defined by: $x(t) = \Re e\{e^{j2000\pi t} + e^{j1500\pi t}\}$.

ANS =