Friday 10

Digital Sound   name_____

Consider making digital recordings using a sound card.

How many bits of resolution will you need to get 100 dB of dynamic range (including the sign bit)?

Roughly   N=1+(dynamic range in dB)/6 =   ___18_____ (rounding up)

If you only need 4 kHz of bandwidth, what is the minimum sample rate that you will need?

4 kHz=Nyquist frequency = (sample frequency/2)

Sample frequency =   _____8000_____ Hz

If frequencies above the Nyquist frequency are not prevented from reaching the digitizer, what phenomenon will happen?

_____Aliasing_____; these frequencies appear as other frequencies that are within the bandwidth.

If sound levels exceed the dynamic range you expect to have _____clipping_____.

If sound levels approach the low end of the dynamic range you expect to have

_____bit_noise_____.

MP3 encoding involves both ____lossy_____ and __lossless_____ compression.   The algorithm

uses a psychoacoustic model of _____masking_____ to perform the lossy compression.