Chapter 04: SOUND

Part 1: Key Term Quiz

1. The branch of physics that studies sound is _____.
2. Sound pressure levels (loudness or volume) are measured in _____.
3. To adjust the level of a number of tracks to bring them all up to about the same level is to _____ them.
4. When audio is measured in order to be digitally stored, the value of each measurement is rounded off to the nearest integer in a process called _____.
5. Reducing the number of separate measurements of an audio file is called _____.
6. The standard file format for displaying digitized motion video on the Macintosh is _____.
7. The most common file format for editing sound on the Macintosh is _____.
8. The audio file format introduced by Microsoft and IBM with the introduction of Windows is the _____.
9. The process of playing a sound file while part of the file is still downloading is called _____.
10. Some software allows you to begin playing a downloading sound file as soon as enough of the sound is cached in your computer's _____.

Part 2: Multiple-Choice Quiz

1. The file format that uses a shorthand representation of musical notes and durations stored in numeric form is:

a. AIFF
b. CD-ROM/XA
c. DSP
d. MIDI
e. QuickTime

2. Which of these statements regarding the MIDI audio format is not true?

a. The sound can easily be changed by changing instruments.
b. Spoken audio can easily be included.
c. Sound tracks can be created using sequencing software.
d. Files are generally smaller than the same digital audio sound.
e. Sounds can be stretched and timing changed with no distortion of the quality.

3. The primary benefit of the General MIDI over the previous MIDI specification is that: a. the file sizes are much smaller due to the compression scheme
b. users can easily edit and adjust the data structures
c. it can be easily converted into the CDROM/XA format
d. MIDI files can be easily integrated into the computer's operating system as system sounds
e. the instruments are the same regardless of the playback source

4. What happens when an audio signal exceeds the recording device's maximum recording level?
a. The signal is compressed to an appropriate level.
b. "Clipping" of the signal occurs, introducing distortion.
c. The audio clip is extended to accommodate the extra data.
d. The entire clip's volume is reduced correspondingly.
e. The extra bits go into a buffer for later use.
5. As one story goes, the criterion used to set the length of the sectors and ultimately the physical size of the compact disc format was based on the length of:
a. the Beatles' "White Album"
b. Handel's Messiah
c. Beethoven's Ninth Symphony
d. Bach's St. John's Passion
e. Iron Butterfly's live rendition of "Innagaddadavida"
6. The process of recording a sound, stored in the form of thousands of individual measurements, each at a discrete point in time, is called:
a. sampling
b. synthesizing
c. sizing
d. quantizing
e. streaming
7. The file size of a five-second recording sampled at 22 kHz, 16-bit stereo (two tracks) would be about:
a. 110,000 bytes
b. 220,000 bytes
c. 440,000 bytes
d. 550,000 bytes
e. 880,000 bytes
8. Which of the following sound file characteristics does not directly affect the size of a digital audio file?
a. sample rate
b. sample size
c. tracks (stereo vs. mono)
d. volume
e. compression
9. Each individual measurement of a sound that is stored as digital information is called a: a. buffer
b. stream
c. sample
d. capture
e. byte

10. Audio recorded at 44.1 kHz (kilohertz), 16-bit stereo is considered:

a. phone-quality
b. voice-quality
c. FM-quality
d. CD-quality
e. AM-quality

Part 3: Practice Activities

3.1 Download and setup the Audacity software at https://www.audacityteam.org/download/ . Follow the manual to discover how to use the software https://manual.audacityteam.org/index.html

3.2 Edit and combing the provided audio files to produce a finished audio file as the sample.

- File 0: Sample File: https://file.liberico.vn/f/ccd6b5edc41b4e3193be/
- File 1: Little girl laughing: https://file.liberico.vn/f/8a244391e68043528e62/
- File 2: Background music: https://file.liberico.vn/f/705efd39906145b29cff/
- File 3: Opening music: https://file.liberico.vn/f/182182bd7a654c939b85/
- File 4: Read out loud the poem below and record your voice with Audacity. Save the file and use it as an input for your project

Suggestions:

- Check the video tutorial for multi-track editing with Audacity: https://www.youtube.com/watch?v=NGLl-9FT51M
- This is the screen capture of the sample project (File 0)