Quiz for Audio Intro Tutorial

Hint: For each question, one or more options can be correct.

1. What library was used to load and process the audio file in the tutorial?

    a) pandas
    b) numpy
    c) librosa
    d) scipy

2. What happens when audio is resampled to a very low sample rate, such as 1000 Hz (1 kHz)?

    a) The audio quality improves due to reduced noise
    b) It allows for a better representation of high-frequency content
    c) The audio file can become severely distorted, losing content above 500 Hz
    d) The audio becomes louder but less clear

3. Real-world audio recordings like songs do not have a regular and sinusoidal waveform like pure tones. Why?

    a) They are a complex combination of waves at various frequencies and amplitudes
    b) They are typically corrupted with external noise during recording
    c) The waveform appears irregular due to varying phases of constituent sound waves
    d) They do have sinusoidal waveforms but are too fast to be discerned

4. How was the audio signal's "highest significant frequency" determined?

    a) By finding the maximum value in the waveform
    b) By applying a threshold to the FFT output
    c) By counting the number of peaks in the waveform
    d) By measuring the duration of the audio sample

5. What is true about the human hearing range?

    a) Typically ranges from 20 Hz to 20,000 Hz for young adults
    b) Can extend up to 100,000 Hz in some individuals
    c) Decreases with age, especially for higher frequencies
    d) "Infrasound" frequencies are not defined relative to the human hearing range

6. What happens to the pitch and speed of the audio when the sample rate of an audio file is changed without altering the actual audio data?

    a) Both pitch and speed change proportionally
    b) Only the speed changes, the pitch remains the same
    c) Only the pitch changes, the speed remains the same

d) Neither pitch nor speed is affected

7. What is the role of the "librosa.resample" function in the tutorial?

   a) To increase the volume of the audio
   b) To change the pitch and the speed of the audio
   c) To alter the duration of the audio without changing its content
   d) To change the sample rate of the audio

8. What does the waveform plot of an audio signal represent?

   a) Frequency vs. amplitude
   b) Time vs. amplitude
   c) Time vs. frequency
   d) Frequency vs. phase

9. Which of the following statements are true about pitch?

   a) Pitch is determined by the amplitude of the sound wave
   b) A higher frequency of a sound wave corresponds to a higher pitch
   c) The pitch of a sound is independent of its frequency
   d) Doubling the frequency of a sound wave (e.g., from 440 Hz to 880 Hz) results in a pitch that is an octave lower