Pre-Assessment Answer Key

Instructions: Answer the following questions.

- How does converting a .wav file to a .csv file help in data analysis? Converting a .wav file to a .csv file transforms the audio signal into numerical data that is easier to manipulate, analyze, and visualize using various data analysis tools and techniques.
- What challenges might arise during the conversion process?
 Challenges might include handling large data sizes, ensuring accurate downsampling and smoothing without losing important information, and managing noise in the data.
- 3. What differences do you observe between the neural signals of finger and wrist movements? Differences may include variations in amplitude and frequency, reflecting the different muscle groups involved and the intensity of the movements.
- 4. How can downsampling and smoothing impact the quality of your data? Downsampling can reduce data size and make it more manageable but may also result in loss of detail. Smoothing helps remove noise but can also obscure finer details in the signal.
- 5. What patterns or trends do you expect to see in the visualized neural data? Answers will vary.
- 6. How do you think these patterns can help in understanding muscle activity during different movements? Answers will vary.
- 7. Why is it important to remove noise from the neural data? Removing noise is crucial to obtain a clear and accurate representation of the true neural signal, which is essential for meaningful analysis and interpretation.



