國立臺北護理健康大學108學年度碩士班招生

語言治療與聽力學系碩士班

言語科學試題

申論題 4 大題（中文或英文答題皆可）每大題25分，共100分。

1. About respiration (25%):

(a) Please discuss the role of the diaphragm for respiration. Describe its importance during both quiet breathing (breathing while sitting at rest) and active breathing (breathing while exercising or speaking) (13%).

(b) Please discuss the role of the abdominal muscles for respiration. Describe their importance during both quiet breathing (breathing while sitting at rest) and active breathing (breathing while exercising or speaking) (12%).

2. About phonation (25%):

(a) The myoelastic-aerodynamic theory of phonation proposed by Professor van den Berg can accurately explain how vocal fold vibration is sustained during voice production. Discuss whether you agree with this statement or not, and explain why (10%).

(b) The fundamental frequency of vocal fold vibration is a very important variable of speech motor control. Discuss how it is being controlled by the laryngeal neuromuscular system (15%).

3. About articulation (25%):

(a) For Mandarin vowels, describe some important acoustic characteristics that can be measured experimentally, such as first formant frequency and second formant frequency, and discuss how tongue positioning, lip rounding, gender and age would affect these characteristics (15%).

(b) For Mandarin stop consonants, describe some important acoustic characteristics that can be measured experimentally, such as transient noise burst, formant transition, and voice onset time. Discuss how the place of articulation and aspiration would affect these characteristics (10%).

4. About speech analysis (25%):

Please discuss the similarities and differences among spectrographic analysis of speech sounds and spectral analysis of speech sounds. You may sketch some sample spectrograms and spectra for common speech sounds to help illustrate your answer (25%).