

國立臺北護理健康大學107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 5 題（中文或英文答題皆可）

1. About the respiratory system (20%):

(a) Please describe the general anatomy of the respiratory system (what body structures make up the respiratory system) (5%).

(b) Please describe the muscles responsible for inspiration (inhalation) and those responsible for expiration (exhalation) (5%).

(c) In a breathing cycle consisting of an inspiratory phase and an expiratory phase, please describe *how* the activities of the inspiratory and expiratory muscles would correspond to these two phases of the breathing cycle (10%).

2. About the phonatory system (20%):

(a) Please describe the general anatomy of the phonatory system (what structures make up the larynx) (5%).

(b) Please describe *how* vocal fold abduction (opening of the glottis) and vocal fold adduction (closing of the glottis) can lead to respiration and phonation (voice production) (5%).

(c) The human voice produced by vibration of the vocal folds in the larynx can be controlled in different ways, with two of the most important variables being fundamental frequency of vibration and amplitude of vibration. Explain *why* the fundamental frequency and amplitude of vibration are important for voice production (10%).

3. About the articulatory (resonance) system (20%):

(a) Please describe the general anatomy of the articulatory or resonance system (what structures make up the vocal tract above the larynx) (5%).

(b) Please explain *why* the soft palate or velum is important for articulation (5%).

(c) Please explain *why* the tongue and the mandible (lower jaw) are important for articulation (10%).

4. About the neural (neuromuscular) system (20%):

(a) Please describe the general anatomy of the central nervous system or CNS (what structures make up the CNS) (5%).

(b) Please identify *three* cranial nerves that are important for the control of respiration, phonation, and articulation (there are actually more than 3 nerves that are important, but you only need to name three) (5%).

(c) Please explain *why* the CNS and the cranial nerves are important for respiration, phonation, and articulation (10%).

5. About the integration of the speech systems (20%):

Based on the source-filter theory of speech production, please *briefly* summarize *how* the respiratory system, phonatory system, and articulatory system are involved in producing human speech (20%).