

# 國立臺北護理健康大學 109 學年度碩士招生

## 語言治療與聽力學系碩士班(語言治療組)

### 言語科學試題

注 意	1.本試題共有一頁。 2.請用中文或英文作答。 3.請於答案卷上標明申論題之題號，並依序作答。
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申論題 (共3題，總分100分)

1. About respiration (33%) :

(a) Please explain *why* aerodynamic concepts (in particular, air pressure and air volume) are important for the understanding of human respiration. In your discussion, describe the physical law governing the relationship between air pressure and air volume. How can this law be applied to describe the process of respiration? (15%)

(b) Please describe *how* human respiration would change for the following situations: (1) when a person is at rest (tidal breathing); (2) when a person is speaking (speech breathing). Be sure to describe both inhalation and exhalation. (18%)

2. About phonation (33%):

(a) Please explain *why* vocal fold abduction and vocal fold adduction are essential for both respiration and phonation (voice production). (15%)

(b) Please discuss the similarities and differences between two types of vocal fold movement: (1) vocal fold abduction and adduction; (2) vocal fold vibration. With the help of diagrams, describe a typical glottal vibratory cycle during phonation. (18%)

3. About speech acoustics (34%):

Please discuss your understanding of the concepts “formants” and “harmonics”. Why is it important to understand these two concepts for the analysis of human speech? Please sketch some simple diagrams of formants and harmonics to help illustrate your answer (34%).