

國立臺北護理學院九十八學年度碩士班招生

聽語障礙科學所

聽力科學試題

注 意	1. 請用中文或英文作答。 2. 請標明題號依序於答案卷上作答。
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1. Please answer the following questions: (20%)
 - (A) Please define the term dB SPL (deci-Bel Sound Pressure Level).
 - (B) In the following calculation:
 $70 \text{ dB SPL} - 50 \text{ dB SPL} = 20 \text{ dB}$
Why the correct answer is 20 dB, not 20 dB SPL?
 - (C) Please compare the following terms: signal vs. noise.
 - (D) Please compare the following terms: time domain vs. frequency domain of sound waveforms.
2. Please describe the impedance matching and transfer function provided by the middle ear system, which couples energy from the air-conducted media in the external ear canal to the fluid filled cochlea. (20%)
3. Please describe the structures of bony labyrinth and membranous labyrinth of the cochlea. In addition, please describe the fine structures of organ of Corti. (20%)
4. Please describe the structures and functions of afferent auditory nerve (auditory branch of eighth cranial nerve) and efferent auditory nerve (olivocochlear bundle). (20%)
5. Please describe the following terms of psychoacoustics. (20%)
 - (A) loudness and pitch
 - (B) critical band for masking
 - (C) absolute sensitivity and differential sensitivity
 - (D) masking level difference in binaural hearing