

一、知覺心理學問答題 (6 題，共 50 分)

1. (10 分，每小題 2 分) Briefly explain the following concepts:
 - a. Blind spot
 - b. Purkinje shift
 - c. Inattention blindness
 - d. Emmert's Law
 - e. Interaural time difference

2. (9 分) Describe how information would be represented under each of the following representational schemes: specificity coding, distributed coding, and sparse coding.

3. (8 分) Describe research on brain damaged and non-brain damaged people that support the idea that the dorsal stream is the “how” pathway.

4. (8 分，每小題 2 分) Please answer the following questions:
 - a. How are random-dot stereograms created?
 - b. Why are random-dot stereograms important in vision research?
 - c. How is the correspondence problem related to the concept of random-dot stereograms?
 - d. How does the visual system, according to Marr & Poggio (1976) resolve the correspondence problem?

5. (9 分) Suppose that you want to use a machine learning algorithm to understand the roles of the FFA and PPA in face perception with fMRI data,
 - a. What kinds of stimuli will you use for your experiment?
 - b. How will you apply your machine learning algorithm?
 - c. What result do you expect?

6. (6 分) Discuss how “top-down” processing is involved in odor perception; from both a behavioral and physiological approach.

見背面

二、生理心理學問答題 (5 題，共 50 分)

1. (10 分) 請比較兩種不同型態的 declarative memory 及三種不同型態的 nondeclarative memory 之間的差異，並說明與這些不同類型長期記憶 (long-term memory) 相關的主要大腦結構為何。
2. (10 分) 藥物(drug)會影響神經傳導物質在突觸的傳遞。請說明六個藥物影響突觸前端神經 (presynaptic neuron) 的機制，以及四個藥物影響突觸後端神經(postsynaptic neuron)的機制。
3. (10 分) 運動功能(motor function)主要由兩個系統負責：錐體系統(pyramidal system)與錐體外系統(extrapyramidal system)。錐體系統相關腦區包含 primary motor cortex, supplementary motor area, and premotor cortex。錐體外系統相關腦區包含 basal ganglia and cerebellum。請說明這些不同結構在大腦中的相關位置，及其主要負責的運動功能為何。
4. (10 分) 請列舉三種與體重調節相關的體內激素(hormone)，說明其主要的釋放區域，以及其主要的功能為何。
5. (10 分，每小題 2 分) Briefly explain the following terms:
 - a. delayed non-matching-to-sample task
 - b. negative feedback action of a hormonal system
 - c. epigenetics
 - d. hypothalamic-pituitary-adrenal axis in depression
 - e. event-related potential

試題隨卷繳回