

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Maintaining physiological homeostasis requires multiple system control mechanisms in our body, including
 - 1) negative feedback
 - 2) positive feedbackPlease define each control mechanism and provide an example for each mechanism. (10%)
2. The movement of molecules across the cell membrane is an important process to maintain body homeostasis. Please give an example for primary active transport and secondary active transport on cell membrane. (4%)
3. What is action potential in a neuron? Please describe it step by step. (10%)
4. What are the three types of muscle we have? Please describe the body sites they distribute. (12%)
5. Ulcers is an erosion of tissue of the gastric wall due to pepsin and acid in the stomach. Our stomach has three features to protect the gastric wall from being digested by pepsin and acid. What are these features? (9%)
6. Both ventricular muscle cells and SA node play important roles in heart function. Please contrast action potentials in ventricular muscle cells with SA node action potential. (15%)
7. Please explain what brain self-stimulation can tell about emotions and rewards and punishments. (10%)
8. How would you distinguish between primary and secondary hypersecretion of a hormone? (10%)
9. Increased venous pressure drives more blood out of the veins into the heart. What four factors influence venous pressure? (10%)
10. Where does the fertilization normally occur? Describe the mechanisms and messengers that contribute to parturition. (10%)