

系所組別：細胞生物與解剖學研究所

考試科目：動物學

考試日期：0220，節次：2

※ 考生請注意：本試題 可 不可 使用計算機

Please answer the following questions in either Chinese or English. Draw pictures to illustrate your points if necessary. (請用中文或英文作答)

1. Define the following terms and give examples.
 - A. Biodiversity (5%)
 - B. Polymorphism (5%)
 - C. Ecological niche (5%)
 - D. Cell cycle (5%)
2. Describe the anatomical features of vertebrates. (10%)
3. Describe (A) the structure of the mitochondrion and (B) how ATPs are produced by the electron transport chain. (10%)
4. Describe the respiratory systems of the fishes and the human. Compare the differences between the gill and the lung. (10%)
5. Describe how the adrenal gland responds to body stress or emergency by releasing different hormones in the human. Your answers must include regulatory mechanisms for the (A) cortex, and (B) medulla of the adrenal gland. (10%)
6. Describe the cardiovascular system of the human. Your answers must include (A) the anatomical features of the heart, (B) impulse-conducting system, and (C) vascular network. (10%)
7. Describe (A) spermatogenesis (development of sperm), and (B) the hormonal regulation of male reproductive function of the human. (10%)
8. Describe the anatomical organization of the human nervous system. Your answers must include the (A) development, (B) central nervous system, (C) peripheral nervous system, and (D) autonomic nervous system. (20%)