

八十四學年度 生命科學 所 甲 組碩士班研究生入學考試

科目 動物生理學 科號 0906 共 2 頁第 1 頁 *請在試卷【答案卷】內作答

Part I

- A. List the hormonal product released by each of the following human endocrine tissues: pituitary gland, thyroid gland, parathyroid glands, adrenal glands, pancreas and gonads. (6%)
- B. How the animals transport oxygen and nutrients to their internal tissues?
hint: You should compare differences among animal systems. (5%)
- C. Compare the process of metamorphosis in a frog to that in a butterfly. Discuss how the hormone(s) redirect development in either one of the two animal groups. (8%)
- D. Depict the structure and function of a chemical synapse. (8%)
- E. Briefly depict the function(s) of following cells. (10%)
1. basal cell of epidermis
 2. goblet cell of digestive tracts
 3. acinar cell of pancreas
 4. hepatocyte
 5. fibroblast
 6. chondrocyte
 7. osteoblast
 8. Schwann cell
 9. spermatogonium
 10. follicle cell

八十四學年度 生命科學 所 甲 組碩士班研究生入學考試

科目 動物生理學 科號 0906 共 2 頁第 2 頁 *請在試卷【答案卷】內作答

Part II

Explain following terms in detail (3 points each)

1. Apoptosis
2. Macrophage
3. Homing factors of cells
4. Natriuretic peptide
5. Endothelin
6. NO
7. Blood pressure
8. Potential sensitive dye
9. Columns structure of cortex
10. Brain death or heart death?
11. 與其他現代生物學各領域比較(動物)生理學研究之特殊性。

Part III

1. Define first and second messengers, and explain how they function. (10%)
2. Name three neurotransmitters, and state the function and regulation of each. (10%)
3. Explain the connection between ADH, kidney function, and negative feedback. (10%)