

Part I : 50%

(一) 解釋名詞: (20%)

- (A) Nernst equation
- (B) Refractory period
- (C) Postsynaptic potential
- (D) Gap junction

(二) 請詳細列舉血管平滑肌(Vascular smooth muscle), 心肌(Cardiac muscle) 及骨骼肌(Skeletal muscle)三種肌肉收縮(Contraction)分子機制的相似及相異點各為何? (10%)

(三) 試說明 Sleep-wakefulness stages 如何區分(請就 behavior 及 electroencephalogram 特徵)。何謂 Paradoxical sleep, 其生理意義為何? (10%)

(四) 何謂 Hypothalamic-pituitary-adrenal axis (下丘腦-垂體-腎上腺軸)? 其如何被調控? 及其執行何種生理或病理功能? (10%)

Part II : 50%

1. Please discuss the reabsorption and secretion along different parts of the nephron. (10%)
2. Please discuss the basic principles of osmosis and osmotic pressure. (10%)
3. Please discuss the mechanisms of blood coagulation. (10%)
4. Please discuss the physiologic anatomy of the pulmonary circulatory system. (10%)
5. Please discuss the regulation and function of monthly ovarian cycle. (10%)