

※ 注意：請於試卷上「非選擇題作答區」標明題號並依序作答。

說明：題號 1 至題號 5 為單選題，題號 6 至題號 12 為問答題。

1. Which of the following statements is true for both pinocytosis and phagocytosis? (3 分)
  - A) The recruitment of actin filaments are involved in.
  - B) Occurs spontaneously and non-selectively
  - C) Endocytotic vesicles fuse with ribosomes that release hydrolases into the vesicles
  - D) Is only observed in macrophages and neutrophils
  - E) Does not require ATP
2. What is the calculated osmolarity of a solution containing 12 mM NaCl, 4 mM KCl, and 2 mM CaCl<sub>2</sub> (in mOsm/L)? (3 分)
  - A) 16; B) 18; C) 22; D) 38; E) 42
3. The force produced by a single skeletal muscle fiber can be increased by which of the following? (3 分)
  - A) Decreasing extracellular K<sup>+</sup> concentration
  - B) Increasing the amplitude of the depolarizing stimulus
  - C) Increasing the frequency of stimulation of the fiber
  - D) Increasing the permeability of the sarcolemma to K<sup>+</sup>
4. Which of the following statements about cardiac muscle is most accurate? (3 分)
  - A) The strength and contraction of cardiac muscle depends on the amount of calcium surrounding cardiac myocytes
  - B) In cardiac muscle the initiation of the action potential causes an immediate opening of slow calcium channels
  - C) The T-tubules of cardiac muscle can store much less calcium than T-tubules in skeletal muscle
  - D) Cardiac muscle repolarization is caused by opening of sodium channels
5. Under normal physiological conditions, blood flow to the skeletal muscles is determined mainly by which of the following? (3 分)
  - A) Sympathetic nerves
  - B) Angiotensin II
  - C) Vasopressin
  - D) Metabolic needs
  - E) Capillary osmotic pressure
6. Please describe the physiological function of renin-angiotensin-aldosterone system. (8 分)
7. Please describe the mechanism of thyroid hormone action. (7 分)
8. Name the 12 pairs of cranial nerves; indicate the body region, type, and functions by each. (10 分)
9. 敘述腦波之產生機制。(18 分)
10. 請以狗為例，敘述喉軟骨的結構，並且解釋這些解剖構造如何能產生高頻和低頻的聲音。(17 分)
11. 請繪圖說明雌性動物生殖週期中的不同階段時，動物體內濾泡刺激素(Follicle stimulating hormone)、黃體刺激素(Luteinizing hormone)、雌性素(Estrogen)、黃體素(Progesterone)及濾泡(Follicle)的變化。(15 分)
12. 請敘述單胃動物在食入脂肪後的消化及吸收過程(10 分)。

試題隨卷繳回