

※ 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。

**Multiple Choices, 20 questions, each question has one correct answer. Total 80 points, 4 分/題.**

1. Which of the following statement about the central nervous system (CNS) is **not correct**?
  - A. Neurons account for the most common cells in CNS
  - B. Glia are supporting cells in CNS
  - C. Most neurons in CNS are multipolar
  - D. Oligodendrocytes myelinate axons in CNS
  
2. During muscle contraction which of the sarcomere component will not change its length?
  - A. I band
  - B. A band
  - C. H zone
  - D. Z lines
  
3. Which of the following is agranular leukocyte?
  - A. Neutrophils
  - B. Eosinophils
  - C. Lymphocyte
  - D. Basophils
  
4. Which of the following statement about edema is **not correct**?
  - A. may be caused by increased blood pressure
  - B. may be caused by blockage of lymphatic vessels
  - C. may be caused by increased plasma protein concentration
  - D. leakage of plasma protein into the interstitial tissue
  
5. The greatest resistance to blood flow occurs in
  - A. aorta
  - B. arterioles
  - C. capillaries
  - D. venules
  
6. Which of the following statement about electrocardiogram (ECG) is **not correct**?
  - A. is a measurement of action potential of heart
  - B. QRS wave corresponds to contraction of ventricles
  - C. QRS wave corresponds to the opening of AV valves
  - D. repolarization of ventricle produces the T wave

7. Which of the following statement about electroencephalogram (EEG) in sleep is **not correct**?
- A. dream occurs in rapid eye movement (REM) sleep
  - B. slow-wave sleep occurs in non-REM sleep
  - C. people first fall asleep in non-REM sleep
  - D. REM sleep helps people resting
8. Which of the following statement about neuron is **correct**?
- A. Neuron often has more than one axon
  - B. Axon hillock contains many mitochondria
  - C. Node of Ranvier have voltage-gated sodium channels
  - D. Presence of myelin slowing down the nerve conducting velocity
9. Which of the following statement about autonomic nervous system function is **correct**?
- A. Sympathetic nerve enhances mucous gland secretion
  - B. Parasympathetic nerve induces constrict of sphincter in gastrointestinal tract
  - C. Sympathetic nerve induces bronchioles contraction
  - D. Sympathetic nerve stimulation causes penis ejaculation
10. Which of the following is a water-insoluble vitamin
- A. Vitamin C
  - B. Thiamine
  - C. Vitamin D
  - D. Vitamin B
11. During the first 6 weeks of pregnancy, corpus luteum is mainly maintained by
- A. hCG
  - B. LH
  - C. Estrogen
  - D. Progesterone
12. Which of the following statement about placenta is **correct**?
- A. The placenta is formed from fetal chorion frondosum and maternal decidua basalis
  - B. Chorionic gonadotropin has FSH-like functions
  - C. Amniocentesis can provide fetal genetic information as 10 weeks of gestation
  - D. Placenta contains mixed fetal and maternal blood to exchange gas and metabolic materials
13. Which of the following statement about long-term potentiation is **not correct**?

- A. is important in learn and memory
  - B. enhances synaptic transmission
  - C. is important in short-term memory
  - D. causes enlarged action potential amplitude
14. Which of the following is not characteristic for apoptosis?
- A. programmed cell death
  - B. tissue necrosis
  - C. DNA fragmentation
  - D. chromatin condensation
15. The superior colliculi within corpora quadrigemina of the midbrain are involved in
- A. auditory reflexes
  - B. visual reflexes
  - C. release of pituitary hormones
  - D. speech comprehension
16. Which of the following statement about gastric secretion is **not correct**?
- A. cephalic phase mainly due to stimulation of vagus nuclei in the brain
  - B. pH of gastric juice below 2.5 inhibits gastric phase
  - C. fat in chyme, duodenum secretes a hormone to inhibit gastric secretion
  - D. gastrin secretion plays a major role in cephalic phase secretion
17. Ketoacidosis in untreated diabetes mellitus is due to
- A. excessive fluid loss
  - B. hypoventilation
  - C. excessive eating and obesity
  - D. excessive fat catabolism
18. Strength of muscle contraction is mainly determined by
- A. amplitude of action potential
  - B. frequency of action potential
  - C. speed of depolarization
  - D. threshold of action potential
19. All of the following can bound with hemoglobin, **except**
- A. O<sub>2</sub>
  - B. CO<sub>2</sub>
  - C. NO
  - D. HCO<sub>3</sub><sup>-</sup>

20. Which of the following statement about Alzheimer's disease (AD) is **not correct**?

- A. AD patients may show senile plaques in the brain
- B. AD patients often show progressively declined cognitive function
- C. AD only occurs in aged humans
- D. Most AD are sporadic

**II. Briefly describe the source and function of the following CELL OR HORMONES (5 questions, 20 points, 4 分/題)**

- 1. microglia
- 2. osteoclast cell
- 3. leptin
- 4. somatostatin
- 5. melatonin