

南華大學九十六學年度 碩士班 招生考試試題卷

系所別：自然醫學研究所

科目編號：4402-2

科目：生理學

試題紙第 1 頁共 5 頁

Single choice questions (25×4%=100%)

Please fill out your answer for the corresponding question on the answer sheet

- _____ Osmosis is a special case of
 - pinocytosis.
 - Carrier-mediated transport.
 - Active transport
 - Facilitated diffusion
 - Simple diffusion
- _____ The cotransport of glucose derives energy from
 - a Na^+ concentration gradient.
 - The glucose being transported.
 - a Ca^{2+} gradient
 - the membrane voltage
 - body heat.
- _____ Which of these is not an effect of PTH (parathyroid hormone)?
 - rise in blood phosphate level
 - reduction of calcium excretion
 - increased intestinal calcium absorption
 - increased number of osteoclasts
 - increased calcitriol synthesis
- _____ Before a muscle fiber can contract, Ca must bind to
 - calsequestrin
 - the myosin head
 - tropomyosin
 - troponin
 - actin
- _____ An IPSP (inhibitory postsynaptic potential) is _____ of the postsynaptic neuron.
 - a refractory period
 - an action potential
 - a depolarization
 - a repolarization
 - a hyperpolarization
- _____ The buffy coat of a centrifuged sample of blood contains mostly:
 - erythrocytes
 - platelets

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試題紙第 2 頁共 5 頁

- c. blood plasma
 - d. which blood cells
 - e. gamma globulins
7. _____ Epinephrine is secreted by
- a. sympathetic preganglionic fibers
 - b. sympathetic postganglionic fibers
 - c. parasympathetic preganglionic fibers
 - d. parasympathetic postganglionic fibers
 - e. the adrenal medulla
8. _____ The first clotting factor that the intrinsic and extrinsic pathways have in common is
- a. thromboplastin
 - b. Hageman factor
 - c. factor X
 - d. prothrombin activator
 - e. factor VIII
9. _____ Ventricular pressure peaks during
- a. the first heart sound
 - b. the second heart sound
 - c. the QRS complex
 - d. the P-Q segment
 - e. the S-T segment
10. _____ A person with a systolic blood pressure of 130mmHg and a diastolic pressure of 85mmHg would have a mean arterial pressure of about
- a. 85mmHg
 - b. 100 mmHg
 - c. 108 mmHg
 - d. 115 mmHg
 - e. 130 mmHg
11. _____ A helper T cell can bind only to another cell that has
- a. MHC-II proteins
 - b. an epitope
 - c. an antigen-binding site
 - d. a complement-binding site
 - e. a CD4 protein

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試題紙第 3 頁共 5 頁

12. _____ Most of the CO_2 that diffuses from the blood into an alveolus comes from
- dissolved gas
 - carbaminohemoglobin
 - carboxyhemoglobin
 - carbonic acid
 - expired air
13. _____ Increases ADH (antidiuretic hormones) secretion should cause the urine to have
- a higher specific gravity
 - a lighter color
 - a higher pH
 - a lower urea concentration
 - a lower potassium concentration
14. _____ A motor unit is defined as a:
- nerve and a muscle
 - single motor neuron and a muscle fiber
 - motor neuron and all the muscle fibers it stimulates
 - single muscle fiber and the nerves that innervate it
 - muscle and the motor and sensory nerves that innervate it
15. _____ Thrombopoietin is a hormone that stimulates the formation of:
- albumins
 - B lymphocytes
 - platelets
 - fibrinogen
 - erythrocytes
16. _____ Which of the following sequences correctly represents the conduction of an impulse through the heart?
- SA node, AV node, AV bundle, bundle branches
 - SA node, AV bundle, AV node, bundle branches
 - AV node, SA node, AV bundle, bundle branches
 - SA node, bundle branches, AV node, AV bundle
 - AV node, AV bundle, SA node, bundle branches
17. _____ The medullary rhythmicity center in the medulla oblongata controls:
- heart rate
 - the basic rhythm of breathing
 - blood pressure
 - the pattern of hormone secretion throughout the lifespan

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試題紙第 4 頁共 5 頁

e. swinging the arms while walking

18. _____ Increased sympathetic nervous stimulation of the radial muscles of the eye causes:

- a. increased production of tears
- b. the eyeballs to turn toward the midline
- c. the lens to become flatter in shape
- d. improved color vision
- e. dilation of the pupil

19. _____ The cells of the gastric glands that produce secretions directly involved in chemical digestion are:

- a. mucous cells
- b. parietal cells
- c. chief cells
- d. G cells
- e. goblet cells

20. _____ Fluid that filters into the glomerular capsule flows next into the:

- a. glomerulus
- b. efferent arteriole
- c. proximal convoluted tubule
- d. distal convoluted tubule
- e. loop of Henle

21. _____ Which of the hormones causes an increase in the basal metabolic rate?

- a. Prolactin
- b. Thyroxine
- c. Erythropoietin
- d. Renin

22. _____ In the postovulatory phase of the menstrual cycle, LH stimulates the corpus luteum to secrete hormones including:

- a. prolactin
- b. FSH
- c. hCG
- d. progesterone
- e. Both c and d are correct

23. _____ A chemical produced by the hypothalamus that causes the anterior pituitary to secrete a hormone is called a:

- a. gonadotropic hormone

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試題紙第 5 頁共 5 頁

- b. tropic hormone
- c. releasing hormone
- d. target hormone
- e. neurotransmitter

24. _____ The affinity of hemoglobin for oxygen is affected by changes in all of the following EXCEPT

- a. hydrogen ion levels in plasma
- b. carbon dioxide levels in plasma
- c. temperature
- d. calcium ion levels in plasma

25. _____ Inhalation(inspiration) occurs when:

- a. the phrenic nerve stimulates contraction of the diaphragm, which then flattens, thus increasing the volume of the thoracic cavity
- b. the diaphragm relaxes and flattens, thus increasing the volume of the thoracic cavity
- c. the phrenic nerve stimulates contraction of the diaphragm, which then forms a dome, thus decreasing the volume of the thoracic cavity
- d. the vagus(X)nerve stimulates contraction of the diaphragm, which then flattens, thus increasing the volume of the thoracic cavity
- e. the vagus(X)nerve stimulates contraction of the diaphragm, which then forms a dome, thus decreasing the volume of the thoracic cavity