

一、選擇題：(45%)

1. ( ) Which organ system is primarily involved in protection and thermoregulation?  
a) The nervous b) The digestive c) The integumentary d) The immune system
2. ( ) The majority of water within the body is found in the  
a) extracellular compartment. b) intracellular compartment. c) blood plasma. d) interstitial fluid.
3. ( ) Most cells have a resting membrane potential between  
a)  $-65\text{mV} \sim -85\text{mV}$ . b)  $+65\text{mV} \sim +85\text{mV}$ . c)  $-90\text{mV} \sim -110\text{mV}$ . d)  $+90\text{mV} \sim +110\text{mV}$ .
4. ( ) Renal blood flow is best estimated by  
a) clearance of urea. b) clearance of glucose. c) clearance of inulin. d) clearance of PAH.
5. ( ) A deficiency of dietary cholesterol would decrease the production of  
a) glucagon. b) atrial natriuretic hormone. c) melatonin. d) estradiol- $17\beta$ .
6. ( ) Many growth factors use  
a) tyrosine kinase b) cyclic AMP c) calmodulin d) cyclic GMP as a second messenger.
7. ( ) Increased concentrations of 2,3-DPG  
a) shift the oxyhemoglobin dissociation curve to the right. b) increase the affinity of hemoglobin for oxygen.  
c) occur due to decreased erythrocyte metabolism of glucose. d) result when oxyhemoglobin is increased.
8. ( ) In regards to the relationship between resting muscle fiber length and tension generated,  
maximal tension is generated when the thick and thin filaments  
a) do not overlap. b) slightly overlap. c) greatly overlap. d) the amount of overlap is unimportant in  
determining maximal tension.
9. ( ) Oxidation of low-density lipoproteins causes  
a) fatty streak appearance. b) increased hepatic uptake of fats.  
c) increased LDL receptor synthesis. d) monocyte conversion.
10. ( ) Which of the following is **not** true concerning blood vessels?  
a) Arteries contain more muscle than veins. b) Valves are found in veins but not arteries.  
c) Smooth muscle surrounds capillaries. d) Discontinuous capillaries create sinusoids.
11. ( ) Steroid hormone receptors may be found  
a) in the cytoplasm. b) in the nucleus. c) on the cell surface. d) both a and b.
12. ( ) Granular leukocytes are derived from  
a) erythroblasts. b) lymphoblasts. c) myeloblasts. d) monoblasts.
13. ( ) Nonspecific immunity would be mediated by all of the following **except**  
a) mucus. b) lymphocytes. c) neutrophils. d) macrophages.
14. ( ) Lipid absorption and transport would be inhibited by  
a) increased chylomicron production. b) blockages in the lymphatic system.  
c) damage to the capillaries in the villus. d) increased activity of lipoprotein lipase.
15. ( ) The majority of hydrolysis of disaccharides occurs by the actions of enzymes found  
a) in the brush border of the small intestine. b) in the pancreatic juice.  
c) in the gastric mucosa. d) in saliva.

二、非選擇題：(55%)

1. 試解釋下列各名詞：20%

A. Apocrine vs Merocrine:

B. Tetanus vs. Rigor motis:

C. Hybridoma vs Monoclonal antibody: D. Non-insulin- vs Insulin-dependent diabetes mellitus:

2. 請翻譯以下摘自數種期刊主題的英文意涵：35%

Title1 Bovine blood components: fractionation, composition, and nutritive value

J. Agric. Food Chem., Vol. 47(1), 1999.

Title2 Sheep and goat's milk allergy – a case study

Allergy, Vol. 60 (1), 2004.

Title3 Study of high density *Escherichia coli* fermentation for production of porcine somatotropin protein

Annals of the New York Academy of Sciences, Vol. 646, Recombinant DNA Technology, 1991.

Title4 Neuroendocrine control of reproductive function in ruminants

Animal Science Journal, Vol. 78(2), 2007.

Title5 Incorporation of  $^{32}\text{P}$  into the phospholipids of neuronal and glial cell enriched fractions isolated from rabbit cerebral cortex: effect of norepinephrine

Journal of Neurochemistry, Vol. 23(5), 1974.