

科目：營養學

系所組：營養科學系

## 一、單選題 (60%) 每題兩分

1. Insufficient intakes of \_\_\_ by adults may contribute to loss of taste sensations and delayed wound healing. (A) magnesium; (B) zinc; (C) folate; (D) vitamin B-12.
2. Inadequate intake of \_\_\_ in adults may contribute to loss of bone strength and mental confusion. (A) magnesium; (B) zinc; (C) folate; (D) vitamin B-12.
3. To prevent constipation, older adults should: (A) limit highly sweetened foods; (B) increase dietary fiber; (C) take laxatives; (D) all of these answers are correct.
4. Scientists believe that the trace mineral \_\_\_\_\_ is involved in the regulation of glucose uptake. (A) chromium; (B) zinc; (C) iron; (D) selenium.
5. Neural tube defects may occur when women consume too little \_\_\_ before becoming pregnant. (A) iron; (B) calcium; (C) folate; (D) zinc.
6. The richest sources of iron in the diet are: (A) fruits and vegetables; (B) nuts and seeds; (C) meats and seafood; (D) breads and pastries.
7. Which nutrient increases the absorption of non-heme by reducing ferric iron ( $Fe^{3+}$ ) to ferrous iron ( $Fe^{2+}$ )? (A) vitamin A; (B) vitamin C; (C) vitamin D; (D) vitamin B-12.
8. Ceruloplasmin is: (A) an iron-containing enzyme in the intestinal wall. (B) a copper-containing enzyme that oxidizes  $Fe^{2+}$  to  $Fe^{3+}$ . (C) the storage form of iron in the liver. (D) a component of the electron transport system.
9. Which group of foods would provide the most bioavailable zinc? (A) refined breads and cereals. (B) black-eyed peas. (C) spinach and leafy greens. (D) oysters and other seafood.
10. Goitrogenic foods that can inhibit iodide metabolism include: (A) beef, poultry, and fish. (B) yogurt, buttermilk, and cheese. (C) chips, olives, and dill pickles. (D) cabbage, broccoli, and cauliflower.
11. In an adult of normal body composition weighing 165 lb, approximately \_\_\_\_\_ lb is water. (A) 91. (B) 55. (C) 37. (D) 116.
12. The major cation in the intracellular fluid is \_\_\_\_\_, whereas the major anion in the extracellular fluid is \_\_\_\_\_. (A) sodium, chloride. (B) potassium, chloride. (C) sodium, chloride. (D) potassium, phosphate.
13. Renin, released from the kidney as a result of a decrease in blood pressure, acts on \_\_\_\_\_ produced in the liver. This triggers a series of reactions that culminate in the production of \_\_\_\_\_ in the adrenal glands. (A) angiotensin II, rennin. (B) aldosterone, angiotensin. (C) angiotensinogen, aldosterone. (D) antidiuretic hormone, osmosis.

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14. Urea is a major body waste from: (A) the catabolism of amino acids. (B) the action of the sodium-potassium pump. (C) intracellular fluid. (D) the excretion of minerals by the kidney.
15. An ample intake of potassium-rich foods may help protect against: (A) hypertension. (B) osteoporosis. (C) gastric ulcers. (D) diabetes.
16. Which of the following blood pressures is considered prehypertension? (A) 118 mm Hg over 82 mm Hg. (B) 130 mm Hg over 85 mm Hg. (C) 142 mm Hg over 95 mm Hg. (D) 145 mm Hg over 105 mm Hg.
17. The nutrients added to enriched grains typically include: (A) all of the B vitamins. (B) vitamin C, pantothenic acid, folic acid and zinc. (C) thiamin, riboflavin, niacin, folic acid and iron. (D) vitamin B-6, folic acid, vitamin B-12 and iron.
18. The best sources of thiamin in the average diet are: (A) ham and vegetables of the cabbage family. (B) root vegetables, cheddar-type cheese. (C) whole grains and fresh fruit. (D) pork products, whole grains or enriched cereals, legumes.
19. Which of the following foods represents the most nutrient-dense source of riboflavin? (A) Low-fat milk. (B) Applesauce. (C) Whole wheat bread. (D) Green leafy vegetables.
20. The fact that the amino acid tryptophan can be converted to niacin by the body explains why: (A) diets high in protein could prevent or cure pellagra. (B) corn-based diets prevent pellagra. (C) gelatin cures pellagra. (D) protein malnutrition causes pellagra.
21. Irreversible nerve damage may be caused by excessive intake of \_\_\_\_\_ supplements. (A) vitamin B-12. (B) vitamin B-6. (C) tryptophan. (D) vitamin C.
22. Biochemical reactions that add CO<sub>2</sub> to compounds often require the B-vitamin: (A) folic acid. (B) thiamin. (C) biotin. (D) vitamin B-12.
23. Thiamin, niacin, and riboflavin work together in important biochemical pathways that: (A) synthesize collagen. (B) control visual process. (C) promote absorption of calcium. (D) release energy from carbohydrate, fat, and protein.
24. A biochemical function of THFA (tetrahydrofolate) is the: (A) transfer of NH<sub>2</sub> groups from amino acids to CO<sub>2</sub> to form urea. (B) transfer of hydrogens and electrons through the various energy-yielding pathways. (C) removal of CO<sub>2</sub> from various intermediates in the citric acid cycle. (D) accepting or donating single-carbon molecules in various metabolic pathways.
25. Vitamin B-12 is absorbed in the: (A) stomach. (B) duodenum. (C) jejunum. (D) ileum.

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26. The amino acids \_\_\_\_\_ and \_\_\_\_\_ are hydroxylated with the aid of vitamin C to form strong connective tissue. (A) proline, lysine. (B) glutamic acid, alanine. (C) threonine, methionine. (D) methionine, homocysteine.
27. The compound carnitine is required for: (A) fatty acid synthesis. (B) glycogen breakdown. (C) active transport of compounds into cells. (D) transport of fatty acids into mitochondria.
28. Nutrients likely to cause toxicity if consumed in excessive amounts: (A) vitamin B-12 and vitamin K. (B) vitamin D and riboflavin. (C) vitamin A and vitamin D. (D) vitamin A and vitamin E.
29. Which of the following does not describe fat-soluble vitamins? (A) They can be stored in the body. (B) Excesses are excreted in the urine. (C) They are absorbed via the lymphatic system. (D) They often exist in several biologically active forms.
30. Vitamin D deficiency can result in poorly mineralized bone. The resulting disease is called: (A) osteoporosis. (B) osteomalacia. (C) osteoarthritis. (D) brittle bone disease.

二、簡答題 (40%):

1. 何謂升糖指數?

- (A)請說明其定義。 (5%)  
(B)請說明其生理意義。 5%  
(C)請說明其臨床應用。 5%

2. Kwashiorkor 及 marasmus 均為蛋白質營養不足所致:

- (A)何者有明顯的 edema 及 fatty liver 的現象? 5%  
(B)請說明其理由。 5%

3. 試解釋下列名詞:

- (A)Trans fatty acids。 5%  
(B)Medium fatty acids。 5%  
(C) $\omega$ -3 fatty acids。 5%

※ 注意：1.考生須在「彌封答案卷」上作答。

2.本試題紙空白部份可當稿紙使用。

3.考生於作答時可否使用計算機、法典、字典或其他資料或工具，以簡章之規定為準。