

亞洲大學

97 學年度碩士在職專班入學招生考試試題紙

學系別	考試科目	考試日期	時 間
生物資訊學系碩士在職專班	普通生物學(B)	97.4.26	10:40-12:20

A. 選擇題 (75%)

- The carbon dioxide exhaled by animals is produced in
 - glycolysis
 - lactate fermentation
 - Kreb's cycle
 - electron transport chain
- A DNA analysis shows that an organism has 21 % cytosine. The amount of thymine this organism would have is
 - 21 %
 - 29 %
 - 50 %
 - 23 %
- The final result of ATP production after anaerobic respiration is
 - the same as the amount of ATP made in aerobic respiration
 - equal to the amount of ATP made in glycolysis
 - lower than ATP made in aerobic respiratory
 - higher than ATP made in aerobic respiratory
- Which of the following is a type of enzyme that cuts double-stranded DNA at a specific site within a specific base sequence?
 - reverse transcriptase
 - restriction enzyme
 - DNA polymerase
 - ligase
- A small amount of DNA can be made into large amount by
 - electrophoresis
 - DNA hybridization
 - ligation
 - PCR
- Protein X is 40 amino acids long. The number of nucleotide that were present in the mRNA used to make this protein was
 - 120
 - 60
 - 40
 - 20
- A particular genetic disease is caused a recessive allele. If two parents have the dominant phenotype but a heterozygous genotype, what are the chances of their child having the disease?
 - 0 %
 - 25 %
 - 50 %
 - 100 %

亞洲大學

97 學年度碩士在職專班入學招生考試試題紙

學系別	考試科目	考試日期	時 間
生物資訊學系碩士在職專班	普通生物學(B)	97.4.26	10:40-12:20
<p>8. If a daughter cell contains 14 chromosomes at the end of meiosis I, how many chromosomes does each daughter cell contain at the ends of meiosis II? a. 7 b. 14 c. 28 d. 32</p> <p>9. Darwin's theory of natural selection is often referred to as "survival of the fittest." The "fittest" organism in a population are those that a. are the strongest b. mutate the fastest c. live the longest d. reproduce the most</p> <p>10. Host <u>cells</u> are often <u>killed</u> by a <u>virus</u> as the <u>direct</u> result of a. intergrating into the host cell membrane b. lysis of the host to release new viruses c. replication of the viral genetic material within the host d. toxic enzymes that damage the host cells</p> <p>11. A patient with swelling in his hands and feet is most likely abnormal in a. blood b adipose c. lymph d. bone</p> <p>12. The hormones secreted from the ovaries and testes are produced from a. cholesterol b. carbohydrate c. a long protein d. a single amino acid</p> <p>13. Patients having problems in maintaining a constant level of blood glucose are most defective in a. pancreas b. thyroid c. adrenal d. pituitary</p> <p>14. Which of the following substance is not present in the plasma? a. antibody b. water c. red blood cells d. sodium</p> <p>15. The highest blood pressure in the body should be found in a. veins b. pulmonary capillaries c. systemic capillaries d. arteries</p>			

亞洲大學

97 學年度碩士在職專班入學招生考試試題紙

學系別	考試科目	考試日期	時 間
生物資訊學系碩士在職專班	普通生物學(B)	97.4.26	10:40-12:20
<p>16. When the pH of the stomach is increased, which of the following may not be completely digested? a. proteins b. carbohydrates c. fats d. nucleic acids</p> <p>17. Most nutrients are absorbed in the a. oral cavity b. small intestine c. stomach d. large intestine</p> <p>18. A person suffering from influenza is unlikely to get another viral infection at the same time. This is because of the secretion of _____ by the immune system. a. histamine b. interferon c. interleukins d. antibodies</p> <p>19. What is the process by which the sun's energy is trapped as the source of energy used by virtually all living organisms? a. evolution b. metabolism c. adaptation d. photosynthesis</p> <p>20. Four groups of mice consume different amounts of sweetener in their food. The control group is the one that receives a. 10 mg/day of sweetener b. 50 mg/day of sweetener c. no sweetener d. extra food</p> <p>21. Which of the following is NOT one of the four most common elements found in living organisms? a. hydrogen b. oxygen c. carbon d. sulfur</p> <p>22. Which carbohydrate is used in the liver for energy storage? a. starch b. chitin c. cellulose d. glycogen</p> <p>23. A peptide bond is found in which type of biological molecule? a. carbohydrate b. lipid c. nucleic acid d. protein</p> <p>24. Which carbohydrate is found in the cell walls of plants? a. starch b. chitin c. cellulose d. glycogen</p>			

亞洲大學

97 學年度碩士在職專班入學招生考試試題紙

學系別	考試科目	考試日期	時 間
生物資訊學系碩士在職專班	普通生物學(B)	97.4.26	10:40-12:20

25. Which of the following lipids forms a bilayer between two watery regions, such as in the plasma membrane of a cell?

- a. steroids
- b. neutral fats
- c. waxes
- d. phospholipids

B. 簡答題

1. Please write down the differences between DNA and RNA (10%)
2. Antibiotics are medicines that target bacterial infections in vertebrates. How can an antibiotic kill all the bacterial cells and not harm vertebrate cells? (10%)
3. After the dihybrid individuals self-fertilized, how many different genotype will be generated in the F₂ population, and what is the ratio of the phenotypes if the two traits are controlled by the two genes (5%)