

國立嘉義大學九十三年學年度
應用化學系碩士班招生考試（乙組）試題

科目：普通生物

單選題，每題 4 分，答錯不倒扣。

- All ecosystems taken together make up a
(A) niche. (B) biosphere. (C) community. (D) population. (E) habitate.
- The Greek root word that means "net" and "within" is
(A) prokaryote. (B) eukaryote. (C) cytoplasmic. (D) nucleoid. (E) endoplasmic.
- If a cell is placed in a hypotonic solution, which will occur?
(A) Salts will move into the cell from the surrounding solution.
(B) Water will move into the cell from the surrounding solution.
(C) Salts will move out of the cell into the surrounding solution.
(D) Water will move out of the cell into the surrounding solution.
(E) None of the above will occur.
- An enzyme is generally named by adding _____ to the end of the name of the _____.
(A) "-ose," cell in which it is found. (B) "-ase," cell in which it is found.
(C) "-ose," substrate. (D) "-ase," substrate.
(E) "-ase," coenzyme
- A substance that is NOT a coenzyme is
(A) ATP. (B) NAD. (C) NADPH. (D) FAD.
- The first process in breaking down glucose is
(A) The Krebs cycle. (B) glycolysis.
(C) the electron transport system. (D) fermentation.
(E) the transition reaction.
- Which of the following is NOT true about cancer cells?
(A) They never fully differentiate. (B) They exhibit contact inhibition.
(C) They exhibit uncontrolled growth. (D) They exhibit disorganized growth.
(E) They may undergo metastasis.
- The offspring of a monohybrid testcross would show the genotype(s)
(A) AA and Aa. (B) Aa and aa.
(C) AA, Aa, and aa. (D) AA only.
(E) aa only.
- Which statement is NOT true about Down syndrome?
(A) It is caused by a third copy of chromosome 21.
(B) Greatly increased incidence occurs with father over age 35.
(C) It is associated with chromosomal nondisjunction in meiosis.
(D) Characteristics included mental retardation and extra eyelid folds.
(E) Affected individuals have a considerably shortened life expectancy.
- If a species contains 23% A in its DNA, what is the percentage of guanine it would contain?
(A) 23%. (B) 46%. (C) 25%. (D) 44%. (E) 27%.
- Which is the process that synthesized mRNA, tRNA, or rRNA?
(A) translation. (B) transcription. (C) transposition. (D) transformation.
- The _____ stimulate(s) apoptosis.
(A) p53 gene. (B) BRCA1 and BRCA2 genes.
(C) ras oncogene. (D) bc1-2 protein.
(E) RB tumor-repressor gene.
- Homologous structures such as the bones in wings, flippers, and arms are most closely concerned with
(A) comparative anatomy. (B) biogeography.
(C) the fossil record. (D) comparative embryology.
(E) comparative biochemistry.

背面尚有試題

14. Altruism is
(A) displaced aggressive behavior.
(B) a means of ranking animals in a dominance hierarchy.
(C) actions of an animal that immediately benefit others rather than itself.
(D) belligerent behavior that helps an animal compete in its society.
15. An intimate relationship between two species in which co-evolution and adaptation occur is
(A) competition. (B) a community.
(C) an ecosystem. (D) predation.
(E) symbiosis.
16. Energy flow in an ecosystem begins with
(A) omnivores. (B) herbivores. (C) detritivores. (D) autotrophs. (E) carnivores.
17. Which belongs to the algae?
(A) sporozoa. (B) zooflagellates. (C) slime molds. (D) diatoms. (E) ciliates.
18. The oldest terrestrial arthropods are thought to be the
(A) millipedes. (B) horseshoe crab. (C) trilobites. (D) centipedes. (E) spiders.
19. Mammals are different from birds in all these characteristics EXCEPT
(A) hair. (B) mammary glands.
(C) constant body temperature. (D) young born alive.
20. Indoleacetic acid (IAA) is the most commonly occurring form of which plant hormone?
(A) abscisic acid. (B) auxin. (C) cytokinin. (D) ethylene. (E) gibberellin.
21. Which kind of T cells regulate the immune response by producing stimulatory lymphokines?
(A) helper T cells (T_H). (B) suppressor T cell (T_S).
(C) cytotoxic T cells (T_C). (D) memory T cells (T_M).
22. By what route does CO_2 leave the body?
(A) pulmonary artery → alveolus → bronchus → bronchiole → trachea → pharynx → larynx
(B) pulmonary vein → bronchiole → alveolus → bronchus → trachea → pharynx → larynx
(C) pulmonary artery → alveolus → bronchiole → bronchus → trachea → larynx → pharynx
(D) pulmonary artery → alveolus → bronchus → bronchiole → trachea → larynx → pharynx
(E) pulmonary artery → alveolus → bronchiole → bronchus → trachea → pharynx → larynx.
23. Nephridia are the paired structure used in excretions in
(A) earthworm. (B) insects. (C) humans. (D) planarians.
24. Generally, nerve impulses do not move “backward” along a series of neurons. Which is NOT a correct reason?
(A) There is a short refractory period during which sodium gates cannot open and an action potential cannot move backwards.
(B) Sensory organs are at the dendrite end of neurons.
(C) At the synapse, the pre-synaptic membrane releases transmitter and the post-synaptic membrane has receptors.
(D) Sodium and potassium gates are one-directional and cannot open in the direction toward the dendrites.
25. Which of the following will increase during strenuous muscular activity?
(A) oxygen. (B) carbon monoxide. (C) lactic acid. (D) liver glycogen. (E) myosin.