

國立中山大學 106 學年度碩士暨碩士專班招生考試試題

科目名稱：普通生物學【海科系碩士班甲組】

題號：

458005

※本科目依簡章規定「不可以」使用計算機(選擇題)

共 3 頁

第 1 頁

海洋科學系 106 年 碩士班 入學考試 普通生物學

單選題

(1 - 32 題每題三分)

1. Which in the following is not a common property of life?

(a) reproduction (b) vision (c) energy processing (d) response to the environment

2. Which term in the following can be defined as "all of the individuals of a particular species living in an area" ?

(a) ecosystem (b) community (c) population (d) organism

3. Which group in the following is not one of the three domains of life?

(a) bacteria (b) archaea (c) eukarya (d) fungi

4. Which element in the following occupies the highest percentage of human body weight (including water)?

(a) carbon (b) hydrogen (c) oxygen (d) nitrogen

5. Starch is a polymer of

(a) glucose (b) fructose (c) amino acids (d) lipids

6. A shortage of phosphorus in the soil would make it especially difficult for a plant to synthesize

(a) protein (b) DNA (c) starch (d) cellulose

7. Which is the following can form the most hydrogen bonds with water?

(a) chlorophyll (b) cholesterol (c) fatty acids (d) glucose

8. What kind of molecules in the following is the major component in cell membrane?

(a) phospholipids (b) protein (c) triacylglycerol (d) cholesterol

9. The major function of mitochondria is to synthesize

(a) RNA (b) DNA (c) ATP (d) ADP

10. The primary function of chloroplasts is to synthesize ATP and

(a) NADPH (b) amino acids (c) triacylglycerol (d) ribosome

11. In eukaryotic cells, chromatin is located in

(a) lysosome (b) nucleus (c) ribosome (d) Golgi body

12. The major difference between plant cells and animal cells is

(a) plasmamembrane (b) microtubule (c) cell wall (d) endoplasmic reticulum

背面有題

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第 2 頁

13. The process to engulf particles into cells is called
(a) endosymbiosis (b) endocytosis (c) exocytosis (d) endomembrane
14. Transport a molecule across a membrane against its concentration gradient is classified as
(a) active transport (b) passive transport (c) simple diffusion (d) facilitated diffusion
15. In chloroplasts, the pigments for light energy absorption is located in the
(a) outer membrane (b) inner membrane (c) thylakoid membrane (d) stroma
16. The first product in photosynthesis is
(a) sugar (b) amino acids (c) lipids (d) calcium
17. The source of the electron in the photosynthetic electron transport is
(a) sugar (b) lipids (c) amino acids (d) water
18. Gametes are produced by a process called
(a) respiration (b) meiosis (c) mitosis (d) diffusion
19. DNA contains four kinds of nitrogenous bases, but not including
(a) cytosine (b) uracil (c) adenine (d) thymine
20. It takes many factors to carry out polypeptide synthesis in mRNA translation, but not including
(a) transcription factor (b) tRNA (c) ribosome (d) amino acids
21. In the evolution of plants from early to lately in time series, what sequence below is correct?
(a) Ferns → Mosses → Gymnosperms → Angiosperms
(b) Angiosperms → Gymnosperms → Mosses → Ferns
(c) Mosses → Ferns → Gymnosperms → Angiosperms
(d) Gymnosperms → Angiosperms → Ferns → Mosses
22. Which lineages in the following is the ancestor of land plants?
(a) diatoms (b) dinoflagelates (c) green algae (d) kelps
23. Which group in the following is not a lineage in the Bilaterians?
(a) Chordates (b) Cnidarians (c) Molluscs (d) Nematodes
24. Which group in the following is the closest living nonvertebrate relatives of vertebrates?
(a) molluscs (b) flatworms (c) sponges (d) lancelets
25. Which of the following animals is not a member of the anthropoids?
(a) tarsier (b) chimpanzee (c) New World monkey (d) human

背面有題

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共 3 頁

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26. In the evolution of animal structures from early to lately in time series, what sequence below is correct?

- (a) head → brain → vertebral column → jaws
- (b) brain → head → vertebral column → jaws
- (c) vertebral column → head → brain → jaws
- (d) jaws → head → brain → vertebral column

27. Which group in the following is thought to be the earliest branch of the animal kingdom?

- (a) sponges (b) cnidarians (c) flatworms (d) nematodes

28. Which group in the following has a body form of radial symmetry?

- (a) arthropods (b) chordates (c) echinoderms (d) cnidarians

29. Which structure in the following produces pollen in flowering plants?

- (a) stigma (b) sepal (c) petal (d) anther

30. Which group in the following produces spores in their life cycle?

- (a) angiosperms (b) monocots (c) gymnosperms (d) ferns

31. Fungi have many applications, but which in the following is not included?

- (a) They can be used as food.
- (b) They can be used to produce soy sauce.
- (c) They can be used to produce medicine.
- (d) They can be used in milk production.

32. Algae have many applications, but which in the following is not included?

- (a) They can be used as feed.
- (b) They can clean wastewater.
- (c) They can produce oxygen.
- (d) They can produce precious flowers.

(下題四分)

33. Lichens are symbiotic associations of a few forms of lives, but not including

- (a) Fungi (b) algae (c) mosses (d) cyanobacteria