普通生物学 转学考试题

选择题：请选出最合适的答案（每题二分，共五十题；
答错超过十题，毎多一题倒扣一分）

1. Energy enters most ecosystems as ________.
   A. light
   B. chemical energy
   C. heat
   D. light and chemical energy

2. Which group includes the simplest of organisms that lack nuclei?
   A. Bacteria
   B. Protista
   C. Fungi
   D. Protozoa

3. What structures are found within bacterial cells?
   A. Nucleus
   B. Ribosomes
   C. Chloroplasts
   D. Mitochondria

4. Two organelles which are believed to have once been free-living bacterial cells are ________ and ________.
   A. ribosomes; nucleolus
   B. Golgi complex; endoplasmic reticulum
   C. chloroplasts; mitochondria
   D. peroxisomes; lysosomes

5. When a cytoplasmic vesicle fuses with the plasma membrane, expelling its contents outside the cell, the process is known as:
   A. exocytosis
   B. phagocytosis
   C. endocytosis
   D. active transport

6. Most CO₂ from catabolism is released during ________.
   A. glycolysis
   B. the Krebs cycle
   C. electron transport
   D. oxidative phosphorylation

7. The overall purpose of the Calvin cycle in photosynthesis is to:
   A. generate molecules of ATP
   B. generate NADP
   C. give off oxygen for animal use
   D. build organic (carbon) molecules

8. Bacterial cells divide by ________.
   A. cleavage
   B. cytokinesis
   C. binary fission
   D. mitosis

9. During which phase of the cell cycle is DNA synthesized?
   A. G₁
   B. G₂
   C. S
   D. M

10. The proper sequence, beginning to end, for the stages of mitosis is:
    A. prophase-metaphase-anaphase-telophase
    B. metaphase-anaphase-telophase-prophase
    C. anaphase-prophase-metaphase-telophase
    D. prophase-anaphase-telophase-metaphase

11. When does separation of homologous chromosomes occur?
    A. prophase I
    B. anaphase I
    C. prophase II
    D. metaphase II

12. Gene flow is a concept best used to describe an exchange between ________.
    A. chromosomes
    B. individuals
    C. populations
    D. species

13. Natural selection is most closely related to ________.
    A. diploidy
    B. gene flow
    C. genetic drift
    D. differential reproductive success

14. Pedomorphosis is the result of ________.
    A. gradualism
    B. autopolyplody
    C. heterochrony
    D. paleontology

15. The process of bringing in the appropriate amino acid into position along the mRNA in the cytoplasm is:
    A. Promotion
    B. Transduction
    C. Transcription
    D. Translation

16. The site where RNA polymerase attaches to the DNA molecule to start the formation of mRNA is called (n):
    A. operon
    B. exon
    C. promoter
    D. operator

17. Trimming certain genes out of molecules of DNA requires the use of special:
    A. digestive enzymes
    B. restriction enzymes
    C. enzymes from peroxisomes
    D. microscopic scalpels

18. All of the genes and other DNA of an organism
constitute its:
A. chromosomes
B. genome
C. proteome
D. transcriptome

19. How many genes constitute the human genome?
A. more than 140,000
B. about 100,000
C. about 35,000
D. less than 14,000

20. _______ consist of a nucleic acid core surrounded by a protein coat.
A. Viruses
B. Protists
C. Eubacteria
D. Archaea bacteria

21. Which obsolete kingdom includes prokaryotic organisms?
A. Plantae
B. Animalia
C. Protista
D. Monera

22. Which eukaryotic kingdom is polyphyletic and, therefore, obsolete?
A. Plantae
B. Animalia
C. Protista
D. Monera

23. What is the largest organelle in most mature living plant cells?
A. Chloroplast
B. Nucleus
C. Central vacuole
D. Dictyosome (Golgi apparatus)

24. Land plants are composed of all the following tissue types except _______ tissue.
A. epidermal
B. mesoderm
C. vascular
D. ground

25. What soil is the most fertile?
A. Loam
B. Clay
C. Silt
D. Sand

26. Most crop plants acquire their nitrogen mainly in the form of _______.
A. N₂
B. NH₃
C. NO₂
D. amino acids absorbed from the soil

27. The enzyme nitrogenase reduces atmospheric nitrogen to form _______.
A. N₂
B. NH₃
C. NO₂
D. NO

28. What should be added to soil to prevent minerals from leaching away?
A. Silt
B. Sand
C. Humus
D. Nitrogen

29. What is the main cause of guttation in plants?
A. Root pressure
B. Transpiration
C. Pressure flow in phloem
D. Condensation of atmospheric water

30. Both red and blue light are involved with _______.
A. Stem elongation
B. Photoperiodism
C. Positive phototropism
D. Tracking seasons

31. In flowering plants, pollen is released from _______.
A. anther
B. stigma
C. carpel
D. sepal

32. Where and by which process are sperm produced in plants?
A. Meiosis in pollen grains
B. Meiosis in stamens
C. Mitosis in male gametophytes
D. Mitosis in the microspore

33. During muscle contraction, the ion that leaks out of the sarcoplasmic reticulum and induces myofibrils to contract is _______.
A. Na⁺
B. K⁺
C. Ca²⁺
D. Cl⁻

34. The _______ system of human body is responsible for secreting the hormones that help integrate the body's activities.
A. integumentary
B. nervous
C. circulatory
D. endocrine

35. The organ system of the human body that removes metabolic wastes from the bloodstream is the _______ system.
A. digestive
B. urinary
C. lymphatic
36. Where does the digestion of fats occur?
A. Mouth and stomach
B. Stomach only
C. Small intestine only
D. Stomach and small intestine

37. Which of the following digestive processes requires enzymes?
A. Ingestion
B. Peristalsis
C. Absorption
D. Hydrolysis

38. Where is the velocity of blood flow the lowest?
A. The aorta
B. Arterioles
C. Capillaries
D. Veins

39. How do veins prevent the backflow of blood within them?
A. By having thick, muscular walls
B. Because of the tiny lumen inside them
C. They are capable of contracting
D. They possess flap-like valves

40. Animals that consume both plant material and other animals are called:
A. Herbivores
B. Carnivores
C. Omnivores
D. Detritivores

41. All of the following are functions of the mammalian kidney except ________.
A. Filtration of blood
B. Production of urea as a waste product of protein catabolism
C. Excretion of nitrogenous waste
D. Regulation of salt balance in the blood

42. Which of these animals has a gastrovascular cavity?
A. Bird
B. Insect
C. Hydra
D. Mammal

43. ________ secrete antibodies.
A. Plasma cells
B. Cytotoxic T cells
C. Helper T cells
D. Natural killer cells

44. Allergic reactions are triggered by the release of ________ from certain cells.
A. Epinephrine
B. Histamine
C. Serotonin
D. Acetylcholine

45. Prostaglandins are derived from ________.
A. Amino acids
B. Sugars
C. Fatty acids
D. Nucleotides

46. The receptor for steroid hormones lies:
A. In the cytoplasm
B. Within the cell membrane
C. In the glycosylx of the cell membrane
D. In the endoplasmic reticulum of the cell

47. Cells that insulate and speed impulse conduction down neurons in the PNS are:
A. Nodes of Ranvier
B. Astrocytes
C. Schwann cells
D. Oligodendrocytes

48. At the time of implantation, the human embryo is called a(n) ________.
A. Blastocyst
B. Embryo
C. Fetus
D. Zygote

49. Choose the best definition of the term "ecology".
A. Ecology is the study of animals in their habitat.
B. Ecology is the study of plants and animals in their ecosystems.
C. Ecology is the study of communities of organisms.
D. Ecology is the study of interactions of organisms with each other and with their habitat.

50. There are approximately ________ identified and named species.
A. 150,000
B. 1,500,000
C. 15,000,000
D. 150,000,000