

普通生物學 轉學考試題

選擇題：請選出最合適的答案（每題二分，共五十題；
答錯超過十題，每多一題倒扣一分）

- Energy enters most ecosystems as _____.
A. light
B. chemical energy
C. heat
D. light and chemical energy
- Which group includes the simplest of organisms that lack nuclei?
A. Bacteria
B. Protista
C. Fungi
D. Protozoa
- What structures are found within bacterial cells?
A. Nucleus
B. Ribosomes
C. Chloroplasts
D. Mitochondria
- 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
- 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
- Most CO₂ from catabolism is released during _____.
A. glycolysis
B. the Krebs cycle
C. electron transport
D. oxidative phosphorylation
- 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
- Bacterial cells divide by _____.
A. cleavage
B. cytokinesis
C. binary fission
D. mitosis
- During which phase of the cell cycle is DNA synthesized?
A. G₁
B. G₂
C. S
D. M
- 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-metaphase-telophase
- When does separation of homologous chromosomes occur?
A. prophase I
B. anaphase I
C. prophase II
D. metaphase II
- Gene flow is a concept best used to describe an exchange between _____.
A. chromosomes
B. individuals
C. populations
D. species
- Natural selection is most closely related to _____.
A. diploidy
B. gene flow
C. genetic drift
D. differential reproductive success
- Paedomorphosis is the result of _____.
A. gradualism
B. autopolyploidy
C. heterochrony
D. paleontology
- 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
- The site where RNA polymerase attaches to the DNA molecule to start the formation of mRNA is called a(n):
A. operon
B. exon
C. promoter
D. operator
- 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
- 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. Archaeobacteria
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. NH_3
B. N_2
C. NO_3^-
D. amino acids absorbed from the soil
27. The enzyme nitrogenase reduces atmospheric nitrogen to form _____.
A. N_2
B. NH_3
C. NO_2
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 anthers
C. Mitosis in male gametophytes
D. Mitosis in the micropyle
33. During muscle contraction, the ion that leaks out of the sarcoplasmic reticulum and induces myofibrils to contract is _____.
A. Na^+
B. K^+
C. Ca^{2+}
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

- D. respiratory
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 flaplike 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 glycocalyx 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

試題完