

銘傳大學 96 學年度轉學生招生考試

生物科技學系

7 月 26 日 第三節

普通生物學試題

(第 1 頁共 3 頁)

(限用答案本作答)

可使用計算機

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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，每多錯一題，倒扣一分）

- A polysaccharide that is a primary component of plant cell wall is _____.
A. Starch
B. Glycogen
C. Cellulose
D. Phospholipids
- Plants store energy as starches; animals store energy as _____.
A. Glucose
B. Dextran
C. Cellulose
D. Glycogen
- Which organelle is common to both animal and plant cells?
A. A large central vacuole
B. Ribosomes
C. Chloroplasts
D. Mitochondria
- What structures are found within bacterial cells?
A. Nucleus
B. Ribosomes
C. Endoplasmic reticulum
D. Mitochondria
- 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. pinocytosis
- 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
- Ecologists study life at all of the following hierarchical levels except _____.
A. cellular
B. populations
C. biosphere
D. ecosystems
- 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. anaphase-metaphase-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
- The enzyme used to create cDNA from mRNA is called _____.
A. restriction enzymes.
B. RNA polymerase.
C. reverse transcriptase.
D. Taq DNA polymerase.
- The process by which an atom or molecule loses an electron is:
A. Reduction.
B. Oxidation.
C. Catalysis.
D. Photosynthesis.
- In _____, one species benefits, but the other is harmed.
A. commensalism
B. mutualism
C. parasitism
D. symbiosis
- A group of DNA nucleotides that contains the information to produce a single protein is a:
A. Promoter.
B. Gene.
C. Codon.
D. Base.
- The site where ribosome attaches to the bacterial mRNA to start the formation of protein is called:
A. RBS.
B. Exon.
C. Promoter.
D. UTR.
- Primary growth of plants is responsible for
A. elongation of roots and stems.
B. transpiration.
C. increase in thickness of a root or stem.
D. opening and closing of stomata.
- All of the genes and other DNA of a cell constitute

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- its:
- A. chromosomes
B. genome
C. proteome
D. chromatins
19. How many genes constitute the human genome?
A. More than 55,000
B. about 45,000
C. about 35,000
D. about 25,000
20. The ruptured follicular cells that surrounded the oocyte secrete _____.
A. estrogens
B. progesteron
C. prostaglandins
D. estrogens and progesteron
21. The nervous system is produced by _____.
A. the ectoderm
B. the endoderm
C. the mesoderm
D. all of the germ layers
22. CO₂ produced by a muscle cell during cellular respiration first diffuses into _____ before it enters the muscle capillaries.
A. alveoli
B. blood plasma
C. interstitial fluid
D. lymph vessels
23. Which of the following is not considered as a tissue?
A. Cartilage
B. Mucus
C. Tendons
D. Blood
24. In plant life cycle, multicellular haploid plants called gametophytes produce gametes by _____.
A. mitosis
B. meiosis
C. binary fission
D. fertilization
25. The principle component of the biological species concept is
A. reproductive isolation.
B. genetic drift.
C. anatomical similarities.
D. evolutionary fitness.
26. Most crop plants acquire their nitrogen mainly in the form of _____.
A. NH₃
B. N₂
C. NO₃⁻
D. amino acids absorbed from the soil
27. Synapsis and crossing over occur during _____.
A. anaphase I
B. prophase I
C. prophase II
D. metaphase I
28. Sporophytes produce haploid spores by _____.
A. mitosis
B. meiosis
C. binary fission
D. fertilization
29. Transformation is a process whereby
A. bacteria utilize restriction enzymes to cleave DNA.
B. bacteria take up DNA from their environment.
C. bacteria duplicate their DNA.
D. bacteria produce plasmids.
30. Which part of the theory of inheritance did Mendel establish?
A. DNA is the genetic material
B. blending inheritance
C. genes are located on chromosomes
D. independent assortment of alleles
31. Which of the following conducts water and dissolved sugars throughout the plant?
A. Xylem.
B. Phloem.
C. Root.
D. Meristem.
32. Which of the followings are good barriers to invasion by microbes?
A. Gut bacteria.
B. Intact skin
C. Urination.
D. All of these.
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. Hormones are used for all of the following except:.
A. Stress management.
B. Stimulation of growth.
C. Thermoregulation.
D. Regulation of metabolism.
35. All of the following statements about hormones are correct except:
A. They are produced by endocrine gland.
B. They are used to communicate between different organisms.

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- C. They elicit specific biological responses from target cells.
D. They are carried in the circulatory system.
36. Which cell can secrete HCl into the gastric juice of stomach?
A. Mucus cell
B. Parietal cell
C. Chief cell
D. Goblet cell
37. The human integumentary system functions in _____.
A. thermoregulation
B. posture
C. storage of minerals
D. production of blood cells
38. The brain stem is composed of the medulla, midbrain, and _____.
A. cerebellum
B. pons
C. cerebrum
D. thalamus
39. How are ligaments different from tendons?
A. Ligaments are usually shorter than tendons.
B. Ligaments attach muscle to skin; tendons attach bone to muscle.
C. Ligaments attach bone to bone; tendons attach bone to muscle.
D. Ligaments attach bone to muscle; tendons attach bone to bone
40. Animals that consume plant material are called:
A. Herbivores
B. Carnivores
C. Omnivores
D. Detritivores
41. Adult insects exchange respiratory gases by _____.
A. gills
B. trachea
C. lungs
D. air sacs
42. Which of the following animals has a gastrovascular cavity?
A. birds
B. insects
C. hydra
D. mammals
43. Which immunoglobulin can be secreted into the human gut?
A. IgG
B. IgM
C. IgA
D. IgE
44. Allergic reactions are triggered by the release of _____ from certain cells.
A. epinephrine
B. histamine
C. interferon
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. within the nuclear membrane
D. in the endoplasmic reticulum of the cell
47. Cells that insulate and speed impulse conduction down neurons in the CNS 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. oocyte
49. The antigen binding sites on an antibody molecule are also called _____.
A. epitope
B. paratope
C. mimotope
D. phagotope
50. Which of the following organs in mammals could be considered responsible for excretion?
A. Kidney
B. Skin
C. Lung
D. All of the above

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