

Kabacademy, a school online

www.kabacademy.net

Kab-tests

Test Topic:

A preplacement test
for a course in biology for standardized tests

Test code:

Kt03020001

Biology Preplacement Evaluation Test

1. Which structure is considered the basic unit of life?

- A) Nucleus
- B) Organelle
- C) Cell
- D) Atom
- E) Molecule

2. Which of the following is a primary function of DNA?

- A) Providing energy for cells
- B) Coding for proteins
- C) Digesting food particles
- D) Moving materials across cell membranes
- E) Facilitating gas exchange

3. In which part of the cell does photosynthesis occur?

- A) Mitochondria
- B) Ribosomes
- C) Chloroplasts
- D) Golgi apparatus
- E) Nucleus

4. What is the term for a change in an organism's DNA?

- A) Transcription
- B) Translation
- C) Mutation
- D) Replication
- E) Inversion

5. Which taxonomic rank is broader than family but narrower than kingdom?

- A) Class
- B) Phylum
- C) Order
- D) Genus
- E) Species

6. What is the primary role of ribosomes in cells?

- A) Photosynthesis
- B) Protein synthesis
- C) DNA replication
- D) Transporting molecules
- E) Storage of genetic information

7. In Mendelian genetics, a dominant allele is:

- A) Always expressed in the phenotype
- B) Only expressed in homozygous form
- C) Inherited only from the mother
- D) Less common than a recessive allele
- E) Not expressed when paired with a recessive allele

8. The main source of energy for all life on Earth is:

- A) Wind
- B) Water
- C) The Sun
- D) Organic molecules
- E) Minerals

9. Which process occurs in the mitochondria of cells?

- A) Photosynthesis
- B) Cellular respiration
- C) Transcription
- D) Translation
- E) Fermentation

10. Which type of organism is most closely related to humans?

- A) Fungi
- B) Plants
- C) Bacteria
- D) Protists
- E) Arthropods

11. Which of the following is NOT a function of the cell membrane?

- A) Regulating the movement of substances in and out of the cell
- B) Providing a rigid structure to the cell
- C) Communicating with other cells
- D) Identifying the cell to other cells
- E) Enclosing cell contents

12. Which of these biomolecules primarily serves as a source of energy for the body?

- A) Nucleic acids
- B) Proteins
- C) Carbohydrates
- D) Lipids
- E) Enzymes

13. Which organelle is responsible for packaging and modifying proteins?

- A) Endoplasmic reticulum
- B) Mitochondria
- C) Ribosome
- D) Golgi apparatus
- E) Lysosome

14. In ecology, a group of the same species living in the same area is known as:

- A) A community
- B) A population
- C) An ecosystem
- D) A biome
- E) A niche

15. What process is used by plants to convert sunlight into chemical energy?

- A) Cellular respiration
- B) Photosynthesis
- C) Transpiration
- D) Fermentation
- E) Evaporation

16. In which phase of mitosis do chromosomes line up at the center of the cell?

- A) Prophase
- B) Metaphase
- C) Anaphase
- D) Telophase
- E) Cytokinesis

17. Which of the following is an example of a decomposer in an ecosystem?

- A) Grass
- B) Rabbit
- C) Fungus
- D) Wolf
- E) Eagle

18. Which blood component is primarily responsible for transporting oxygen?

- A) Platelets
- B) Plasma
- C) Red blood cells
- D) White blood cells
- E) Hemoglobin

19. The theory of natural selection was proposed by:

- A) Gregor Mendel
- B) Jean-Baptiste Lamarck
- C) Charles Darwin
- D) Louis Pasteur
- E) Carl Linnaeus

20. The genetic material in prokaryotic cells is located in:

- A) The nucleus
- B) The nucleoid region
- C) Ribosomes
- D) The Golgi apparatus
- E) Lysosomes

21. In genetics, the physical appearance resulting from an organism's genotype is its:

- A) Genotype
- B) Chromosome
- C) Phenotype
- D) Allele
- E) Karyotype

22. Which of the following is a characteristic of all living organisms?

- A) Photosynthesis
- B) Cell walls
- C) DNA
- D) Multicellularity
- E) Ability to fly

23. Which type of molecule speeds up chemical reactions in biological systems?

- A) Carbohydrate
- B) Protein
- C) Lipid
- D) Enzyme
- E) Nucleic acid

24. What type of cell division results in two identical daughter cells?

- A) Meiosis
- B) Binary fission
- C) Mitosis
- D) Fertilization
- E) Budding

25. An organism that makes its own food through photosynthesis is called a:

- A) Heterotroph
 - B) Carnivore
 - C) Herbivore
 - D) Autotroph
 - E) Decomposer
-

26. Which of the following best describes the main purpose of the human respiratory system?

- A) Transporting blood throughout the body
- B) Exchanging gases between the body and the environment
- C) Breaking down food into usable nutrients
- D) Defending the body against pathogens
- E) Regulating water balance

27. Which molecule is the main energy currency of cells?

- A) DNA
- B) RNA
- C) ATP
- D) Glucose
- E) Starch

28. In a food web, which organisms are typically at the base?

- A) Herbivores
- B) Carnivores
- C) Producers
- D) Omnivores
- E) Decomposers

29. Which of the following kingdoms includes only multicellular autotrophs?

- A) Animalia
- B) Fungi
- C) Protista
- D) Plantae
- E) Archaea

30. Which structure regulates the passage of materials into and out of an animal cell?

- A) Cell wall
- B) Ribosome
- C) Mitochondrion
- D) Cell membrane
- E) Lysosome

31. What is the role of chlorophyll in photosynthesis?

- A) Breaking down glucose
- B) Absorbing sunlight
- C) Transporting water
- D) Fixing nitrogen
- E) Releasing oxygen

32. Genetic information is stored in which part of the cell?

- A) Cell membrane
- B) Cytoplasm
- C) Nucleus
- D) Ribosome
- E) Mitochondria

33. The term “biodiversity” refers to:

- A) The number of genes in a population
- B) The variety of species within an ecosystem
- C) The similarity of organisms within a species
- D) The health of an ecosystem
- E) The number of organisms in a trophic level

34. Which of the following is a primary function of the human skeletal system?

- A) Producing red blood cells
- B) Digesting nutrients
- C) Transporting gases
- D) Regulating temperature
- E) Controlling sensory responses

35. In an energy pyramid, which level contains the least amount of energy?

- A) Producers
- B) Primary consumers
- C) Secondary consumers
- D) Tertiary consumers
- E) Decomposers

36. A hereditary trait that improves an organism's chance of survival is called:

- A) Mutation
- B) Adaptation
- C) Evolution
- D) Gene flow
- E) Variation

37. Which type of cell lacks a true nucleus?

- A) Eukaryotic
- B) Somatic
- C) Plant cell
- D) Animal cell
- E) Prokaryotic

38. What is the main purpose of white blood cells?

- A) Transporting oxygen
- B) Breaking down food particles
- C) Defending the body against infections
- D) Producing energy for cells
- E) Sending signals between cells

39. Which process describes the movement of water across a semi-permeable membrane?

- A) Active transport
- B) Diffusion
- C) Osmosis
- D) Endocytosis
- E) Exocytosis

40. Darwin's theory of evolution by natural selection suggests that:

- A) All species are unchanging
- B) Organisms best adapted to their environment are more likely to survive and reproduce
- C) Individuals can acquire traits that they pass on to offspring
- D) Evolution only occurs in large populations
- E) Species are created independently without relation to each other

41. In humans, which organ is primarily responsible for filtering blood?

- A) Heart
- B) Stomach
- C) Liver
- D) Lungs
- E) Kidneys

42. Which term describes a symbiotic relationship where both organisms benefit?

- A) Parasitism
- B) Competition
- C) Mutualism
- D) Commensalism
- E) Predation

43. Which molecule is the building block of proteins?

- A) Glucose
- B) Fatty acid
- C) Amino acid
- D) Nucleotide
- E) Monosaccharide

44. Which stage of the cell cycle involves the division of the nucleus?

- A) Interphase
- B) Cytokinesis
- C) Metaphase
- D) Prophase
- E) Mitosis

45. What is the primary function of the endocrine system?

- A) Sending electrical signals
- B) Maintaining posture and movement
- C) Breaking down food
- D) Producing hormones
- E) Protecting against pathogens

46. Which process describes the breakdown of glucose in the absence of oxygen?

- A) Photosynthesis
- B) Glycolysis
- C) Aerobic respiration
- D) Fermentation
- E) Transcription

47. Which biome is characterized by permafrost, low temperatures, and limited plant life?

- A) Tropical rainforest
- B) Desert
- C) Grassland
- D) Tundra
- E) Deciduous forest

48. The functional unit of the kidney responsible for filtration is the:

- A) Alveolus
- B) Glomerulus
- C) Nephron
- D) Ureter
- E) Loop of Henle

49. In genetics, what is the probability of an offspring inheriting a dominant trait from a heterozygous parent?

- A) 0%
- B) 25%
- C) 50%
- D) 75%
- E) 100%

50. Which of the following is an example of a vestigial structure?

- A) Human appendix
- B) Whale flippers
- C) Bird wings
- D) Human liver
- E) Fish gills

51. The enzyme amylase, found in saliva, helps digest:

- A) Proteins
- B) Fats
- C) Carbohydrates
- D) Nucleic acids
- E) Minerals

52. Which hormone regulates blood sugar levels?

- A) Insulin
- B) Adrenaline
- C) Estrogen
- D) Thyroxine
- E) Melatonin

53. The “lock and key” model is commonly used to describe:

- A) Hormone function
- B) Enzyme specificity
- C) Muscle contraction
- D) DNA replication
- E) Blood clotting

54. Which of the following factors does NOT affect enzyme activity?

- A) Temperature
- B) pH level
- C) Enzyme concentration
- D) Light exposure
- E) Substrate concentration

55. In which kingdom would you classify mushrooms?

- A) Plantae
- B) Animalia
- C) Protista
- D) Fungi
- E) Archaea

56. The basic building block of lipids is:

- A) Glucose
- B) Amino acid
- C) Fatty acid
- D) Nucleotide
- E) Starch

57. Which of the following processes is an example of passive transport?

- A) Osmosis
- B) Endocytosis
- C) Exocytosis
- D) Active transport
- E) Cellular respiration

58. In humans, the left side of the heart pumps blood to the:

- A) Lungs
- B) Brain
- C) Liver
- D) Rest of the body
- E) Kidneys

59. Which of the following is NOT an abiotic factor in an ecosystem?

- A) Water
- B) Temperature
- C) Sunlight
- D) Soil
- E) Bacteria

60. A hypothesis is:

- A) A proven fact
- B) A well-substantiated explanation
- C) A testable statement
- D) A theory
- E) An untestable opinion

61. Which structure is unique to plant cells?

- A) Cell membrane
- B) Nucleus
- C) Chloroplast
- D) Ribosome
- E) Cytoplasm

62. During which phase of the cell cycle does DNA replication occur?

- A) G1 phase
- B) S phase
- C) G2 phase
- D) Mitosis
- E) Cytokinesis

63. Which process do producers use to make their own food?

- A) Fermentation
- B) Decomposition
- C) Respiration
- D) Photosynthesis
- E) Excretion

64. Which blood vessel carries oxygenated blood from the lungs to the heart?

- A) Aorta
- B) Pulmonary vein
- C) Pulmonary artery
- D) Superior vena cava
- E) Capillary

65. Which of the following is a function of the large intestine?

- A) Absorbing nutrients
- B) Producing enzymes
- C) Storing bile
- D) Absorbing water
- E) Filtering blood

66. Which is a renewable resource?

- A) Fossil fuels
- B) Minerals
- C) Solar energy
- D) Oil
- E) Coal

67. A consumer that only eats plants is called a:

- A) Carnivore
- B) Herbivore
- C) Omnivore
- D) Detritivore
- E) Producer

68. In biology, the term "homeostasis" refers to:

- A) Reproduction of cells
- B) Regulation of internal conditions
- C) Production of energy
- D) Decomposition of organic material
- E) Evolution of species

69. Which of the following best defines "ecosystem"?

- A) A group of similar organisms
- B) A community of organisms interacting with their environment
- C) The variety of species in a biome
- D) The non-living components of an environment
- E) An area dominated by a single species

70. Which part of the brain is responsible for coordinating muscle movements?

- A) Cerebrum
- B) Cerebellum
- C) Medulla
- D) Hippocampus
- E) Brainstem

71. Which gas is produced as a waste product during photosynthesis?

- A) Oxygen
- B) Carbon dioxide
- C) Nitrogen
- D) Hydrogen
- E) Methane

72. DNA is composed of repeating units called:

- A) Amino acids
- B) Monosaccharides
- C) Nucleotides
- D) Polysaccharides
- E) Peptides

73. Which of the following best describes a population?

- A) All organisms in a habitat
- B) A group of the same species in an area
- C) Different species interacting in a community
- D) All living organisms on Earth
- E) A collection of ecosystems

74. Which vitamin is produced by the body when exposed to sunlight?

- A) Vitamin A
- B) Vitamin B
- C) Vitamin C
- D) Vitamin D
- E) Vitamin E

75. What term is used for a trait that is not expressed in the presence of a dominant allele?

- A) Dominant
- B) Heterozygous
- C) Homozygous
- D) Recessive
- E) Polygenic

76. In an experiment, the group that does not receive the treatment is called the:

- A) Control group
- B) Variable group
- C) Experimental group
- D) Independent group
- E) Dependent group

77. Which of the following is a function of the small intestine?

- A) Producing red blood cells
- B) Absorbing nutrients
- C) Filtering waste
- D) Breaking down proteins only
- E) Storing bile

78. Which biome has the highest biodiversity?

- A) Desert
- B) Grassland
- C) Tropical rainforest
- D) Tundra
- E) Taiga

79. What type of cell division produces gametes?

- A) Mitosis
- B) Meiosis
- C) Cytokinesis
- D) Fertilization
- E) Binary fission

80. Which type of RNA carries the genetic code from DNA to the ribosomes?

- A) rRNA
- B) tRNA
- C) mRNA
- D) snRNA
- E) miRNA

=====