

Name:

ANSWER KEY

Date:

Pre-Nursing Final Exam

Multiple Choice

Not many D's

Identify the choice that best completes the statement or answers the question. Remember to read all choices before making a decision. Answers that cannot be read will be counted as incorrect.

- B 1. Radio waves, visible light from the sun, infrared "rays" from heat lamps, the waves that heat food in a microwave oven, ultraviolet rays, and X-rays are all considered types of
- a. electrical energy. c. chemical energy.
b. electromagnetic energy. d. potential energy.
- A 2. What structure serves as a passageway for both air and food?
- a. pharynx c. larynx
b. mitral valve d. bronchus
- B 3. Unlike passive immunity, in active immunity antibodies are produced by
- a. the mother of an infant. c. other animals.
b. your own body. d. an autoimmune disease.
- B 4. Gametes are produced by the process of
- a. mitosis. c. crossing-over.
b. meiosis. d. replication.
- A 5. Darwin's theory of evolution is based on the idea(s) of
- a. heritable variation and natural selection.
b. use and disuse.
c. a tendency toward perfect, unchanging species.
d. the transmission of acquired characteristics.
- A 6. The force that one surface exerts on another when the two rub against each other is called
- a. friction. c. inertia.
b. acceleration. d. gravity.
- C 7. Which of the following is released during cellular respiration?
- a. oxygen c. energy
b. air d. lactic acid
- B 8. During DNA replication, a DNA strand that has the bases CTAGGT produces a complementary strand with the bases
- a. TCGAAC. c. AGCTTG.
b. GATCCA. d. GAUCCA.
- B 9. If an organism's diploid number is 12, its haploid number is
- a. 12. c. 24.
b. 6. d. 3.
- C 10. Water is extracted from digested food in the body primarily by the
- a. bladder. c. large intestine.
b. gallbladder. d. pancreas.
- C 11. A blood pressure reading of 120/80
- a. indicates a diastolic blood pressure of 120.
b. is an indication of hypertension in a resting adult.
c. indicates a systolic blood pressure of 120.
d. is determined by using a stethoscope to measure blood pressure in the alveoli.
- Change wording - Regina

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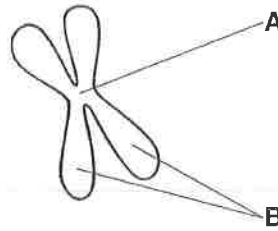


Figure 1

- A 12. The structure labeled A in Figure 1 is called the
- a. centromere.
 - b. centriole.
 - c. sister chromatid.
 - d. spindle.
- C 13. Prokaryotes lack
- a. cytoplasm.
 - b. a cell membrane.
 - c. a nucleus.
 - d. genetic material.
- B 14. The distance between two troughs or two crests of a wave is the wave's
- a. amplitude.
 - b. wavelength.
 - c. frequency.
 - d. speed.
- D 15. Based on their names, you know that the baboons *Papio annubis* and *Papio cynocephalus* do NOT belong to the same
- a. class.
 - b. family.
 - c. genus.
 - d. species.
- C 16. An immune response is triggered by a(an)
- a. antibiotic.
 - b. antibody.
 - c. antigen.
 - d. perforin.

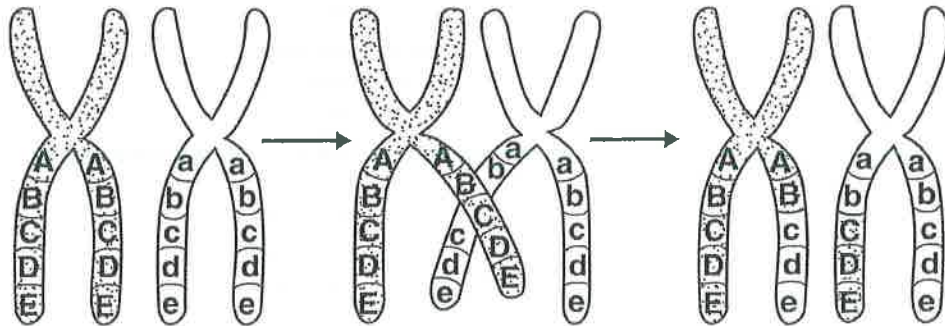


Figure 2

- C 17. What is shown in Figure 2?
- a. independent assortment
 - b. anaphase I of meiosis
 - c. crossing-over
 - d. replication
- C 18. Tall is dominant to short. In the P generation a homozygous tall plant is crossed with a short plant. One of the F1 generation plants is allowed to self-fertilize. What percentage of the F2 generation plants will be tall?
- a. 25%
 - b. 50%
 - c. 75%
 - d. 100%

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- A 19. Which of the following blood cells contain hemoglobin?
a. red blood cells
b. white blood cells
c. platelets
d. all of the above
- A 20. When an impulse reaches the end of a neuron, it triggers the release of
a. neurotransmitters.
b. sodium ions.
c. dendrites.
d. receptors.
- C 21. Compared to the pH of saliva, the pH of stomach juices is
a. the same.
b. higher.
c. lower.
d. unpredictable.
- B 22. Compared with the walls of arteries, the walls of veins
a. are thicker.
b. are thinner.
c. lack valves.
d. have more resistance.
- A 23. Organisms, such as plants, that make their own food are called
a. autotrophs.
b. heterotrophs.
c. thylakoids.
d. pigments.

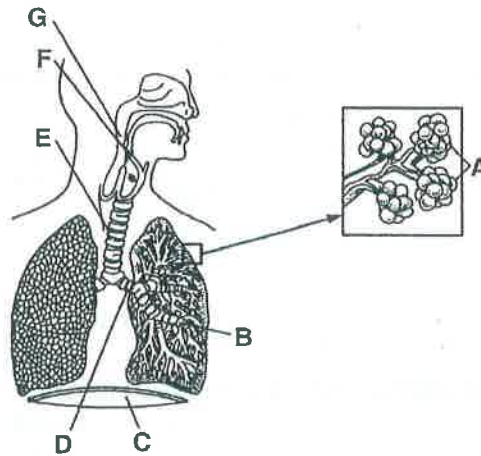


Figure 3

- A 24. According to Figure 3, in which structure does gas exchange occur?
a. A
b. C
c. E
d. F
- A 25. Electrons involved in bonding between atoms are
a. electrons in the outermost ring.
b. inside the nucleus.
c. closest to the nucleus.
d. positively charged.
- A 26. Autoimmune diseases result when the immune system
a. fails to distinguish self from nonself.
b. overreacts to certain antigens.
c. is weakened by asthma.
d. is at its strongest.
- D 27. The substances listed on the left side of a chemical equation are the
a. products.
b. coefficients.
c. precipitates.
d. reactants.

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DKPCDFGS

- B 28. Several different classes make up a
- a. kingdom.
 - b. phylum.
 - c. family.
 - d. genus.

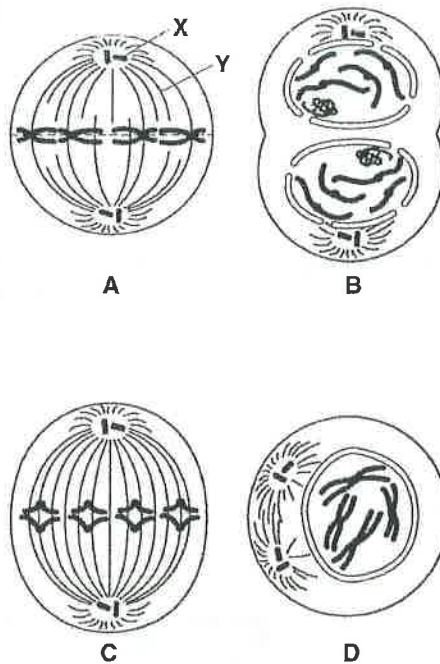


Figure 4

- C 29. According to Figure 4, which of the below pairs is incorrect?
- a. A, metaphase
 - b. B, telophase
 - c. C, interphase
 - d. D, prophase
- A 30. In eukaryotes, DNA
- a. is located in the nucleus.
 - b. floats freely in the cytoplasm.
 - c. is located in the ribosomes.
 - d. is circular.
- C 31. Cellular respiration is called an aerobic process because it requires
- a. light.
 - b. exercise.
 - c. oxygen.
 - d. glucose.
- B 32. Which of the following is a balanced chemical equation?
- a. $H_2O_2 \rightarrow H_2O + O_2$
 - b. $2 Fe_2O_3 + 3 C \rightarrow 4 Fe + 3 CO_2$
 - c. $SO_2 + O_2 + 2 H_2O \rightarrow 4 H_2SO_4$
 - d. $2 Mg + HCl \rightarrow MgCl_2 + H_2$
- A 33. A monosaccharide is a
- a. carbohydrate.
 - b. lipid.
 - c. nucleic acid.
 - d. protein.
- C 34. The function of valves in the human circulatory system is to
- a. stimulate the heartbeat.
 - b. accelerate the flow of blood.
 - c. prevent the backward flow of blood.
 - d. serve as a cushion to prevent friction.

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A

35. Darwin's theory of evolution suggests that
- species change over time.
 - extinct species are not related to living species.
 - different species can interbreed.
 - animals that look alike are the most closely related.

A

36. Which is a characteristic property of acids?
- They turn blue litmus paper red.
 - They turn red litmus paper blue.
 - They taste sweet.
 - They do not react with metals.

C

37. Because the partial pressure of oxygen is higher in an alveolus than in the blood around it, oxygen diffuses
- from capillaries into the veins.
 - from arteries into the capillaries.
 - from alveoli into the blood.
 - from blood into the alveolus.

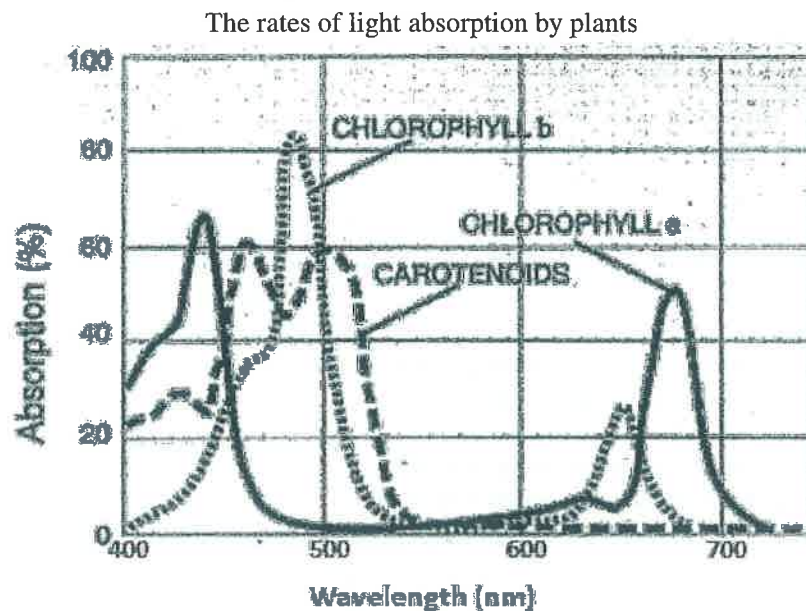


Figure 5

A

38. Figure 5 details which pigments in chloroplasts absorb which wavelengths of visible light. Which of the following statements is correct?
- Chlorophyll *b* absorbs the greatest percentage of light at wavelengths between 480 and 495 nm.
 - Carotenoids absorb the greatest percentage of light at wavelengths above 700 nm.
 - Chlorophyll *a* absorbs the greatest percentage of light at wavelengths under 400 nm.
 - Chlorophyll *b* absorbs more light than chlorophyll *a* at 675 nm.

A

39. The body's most important nonspecific defense is
- the skin.
 - cell-mediated immunity.
 - the inflammatory response.
 - permanent immunity.

C

40. If immigration and emigration numbers remain equal, which is the most important contributing factor to a slowed growth rate?
- increased birthrate
 - constant death rate
 - decreased birthrate
 - constant birthrate

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- B 41. Which pair is correct?
a. G₁ phase, DNA replication
b. G₂ phase, preparation for mitosis
c. S phase, cell division
d. M phase, cell growth
- A 42. The main function of the cell wall is to
a. support and protect the cell.
b. store DNA.
c. direct the activities of the cell.
d. help the cell move.
- D 43. Where does the process of chemical digestion begin?
a. stomach
b. esophagus
c. small intestine
d. mouth
- A 44. Chromosomes form tetrads during
a. prophase I of meiosis.
b. metaphase I of meiosis.
c. interphase.
d. anaphase II of meiosis.
- B 45. Unlike mitosis, meiosis results in the formation of
a. two genetically identical cells.
b. four genetically different cells.
c. four genetically identical cells.
d. two genetically different cells.
- A 46. The distance from the middle of a wave to the crest is the
a. amplitude of the wave.
b. wavelength of the wave.
c. frequency of the wave.
d. speed of the wave.
- C 47. A group of similar cells that perform a single function is called a(an)
a. nerve.
b. organ.
c. tissue.
d. organ system.
- D 48. Which of the following is a nucleotide found in DNA?
a. ribose + phosphate group + thymine
b. ribose + phosphate group + uracil
c. deoxyribose + phosphate group + uracil
d. deoxyribose + phosphate group + cytosine
- C 49. A protein used to increase the rate of a chemical reaction in a living thing is a(n)
a. inhibitor.
b. punnett square.
c. enzyme.
d. fuel.
- B 50. Unlike kinetic energy, potential energy is
a. energy of motion.
b. stored.
c. conserved.
d. not measurable.
- D 51. The ability to do work or cause change describes
a. temperature.
b. density.
c. matter.
d. energy.
- B 52. If an atom contains 11 protons and 12 neutrons, its atomic number is
a. 1.
b. 11.
c. 12.
d. 23.
- D 53. What is the function of the central nervous system?
a. to relay messages
b. to process information
c. to analyze information
d. all of the above
- A 54. The cell body of a neuron collects information from which structure?
a. dendrites
b. Nodes of Ranvier
c. synapse
d. myelin sheath