

Pre-Nursing Final Exam

Multiple Choice

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.

- _____ 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.
 - b. electromagnetic energy.
 - c. chemical energy.
 - d. potential energy.
- _____ 2. What structure serves as a passageway for both air and food?
- a. pharynx
 - b. mitral valve
 - c. larynx
 - d. bronchus
- _____ 3. Unlike passive immunity, in active immunity antibodies are produced by
- a. the mother of an infant.
 - b. your own body.
 - c. other animals.
 - d. an autoimmune disease.
- _____ 4. Gametes are produced by the process of
- a. mitosis.
 - b. meiosis.
 - c. crossing-over.
 - d. replication.
- _____ 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.
- _____ 6. The force that one surface exerts on another when the two rub against each other is called
- a. friction.
 - b. acceleration.
 - c. inertia.
 - d. gravity.
- _____ 7. Which of the following is released during cellular respiration?
- a. oxygen
 - b. air
 - c. energy
 - d. lactic acid
- _____ 8. During DNA replication, a DNA strand that has the bases CTAGGT produces a complementary strand with the bases
- a. TCGAAC.
 - b. GATCCA.
 - c. AGCTTG.
 - d. GAUCCA.
- _____ 9. If an organism’s diploid number is 12, its haploid number is
- a. 12.
 - b. 6.
 - c. 24.
 - d. 3.
- _____ 10. Water is extracted from digested food in the body primarily by the
- a. bladder.
 - b. gallbladder.
 - c. large intestine.
 - d. pancreas.
- _____ 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.

Name: _____

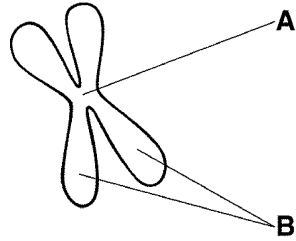


Figure 1

- _____ 12. The structure labeled A in Figure 1 is called the
- a. centromere.
 - b. centriole.
 - c. sister chromatid.
 - d. spindle.
- _____ 13. Prokaryotes lack
- a. cytoplasm.
 - b. a cell membrane.
 - c. a nucleus.
 - d. genetic material.
- _____ 14. The distance between two troughs or two crests of a wave is the wave's
- a. amplitude.
 - b. wavelength.
 - c. frequency.
 - d. speed.
- _____ 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.
- _____ 16. An immune response is triggered by a(an)
- a. antibiotic.
 - b. antibody.
 - c. antigen.
 - d. perforin.

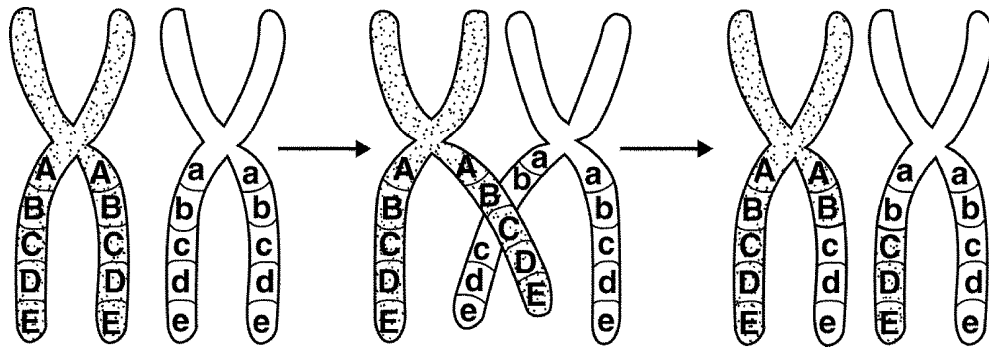


Figure 2

- _____ 17. What is shown in Figure 2?
- a. independent assortment
 - b. anaphase I of meiosis
 - c. crossing-over
 - d. replication
- _____ 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%

Name: _____

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

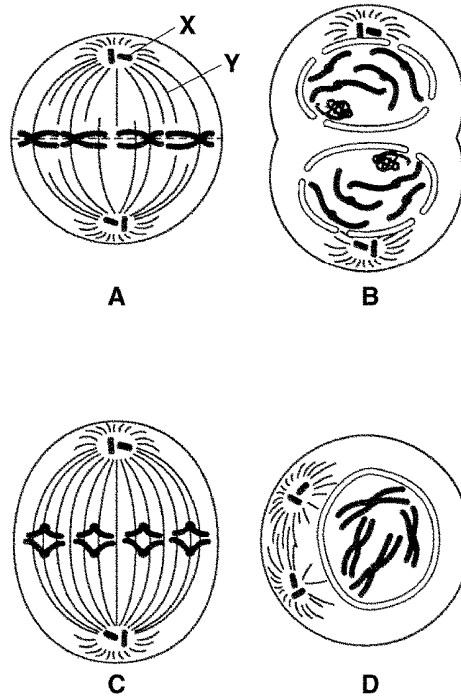


Figure 4

- _____ 29. According to Figure 4, which of the below pairs is incorrect?
- a. A, metaphase
 - b. B, telophase
 - c. C, interphase
 - d. D, prophase
- _____ 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.
- _____ 31. Cellular respiration is called an aerobic process because it requires
- a. light.
 - b. exercise.
 - c. oxygen.
 - d. glucose.
- _____ 32. Which of the following is a balanced chemical equation?
- a. $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$
 - b. $2 \text{Fe}_2\text{O}_3 + 3 \text{C} \rightarrow 4 \text{Fe} + 3 \text{CO}_2$
 - c. $\text{SO}_2 + \text{O}_2 + 2 \text{H}_2\text{O} \rightarrow 4 \text{H}_2\text{SO}_4$
 - d. $2 \text{Mg} + \text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
- _____ 33. A monosaccharide is a
- a. carbohydrate.
 - b. lipid.
 - c. nucleic acid.
 - d. protein.
- _____ 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.

Name: _____

- ___ 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.
- ___ 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.
- ___ 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.

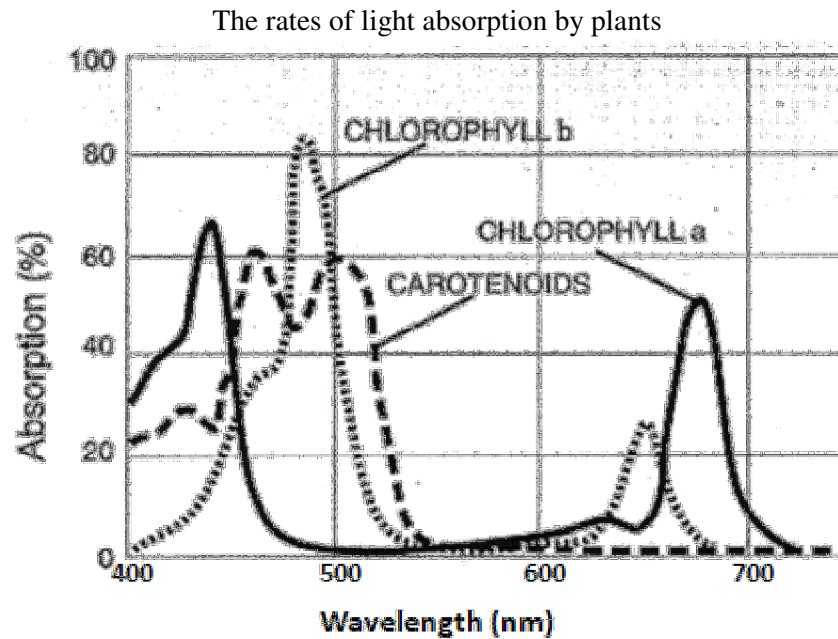


Figure 5

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

Name: _____

- _____ 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
- _____ 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.
- _____ 43. Where does the process of chemical digestion begin?
a. stomach
b. esophagus
c. small intestine
d. mouth
- _____ 44. Chromosomes form tetrads during
a. prophase I of meiosis.
b. metaphase I of meiosis.
c. interphase.
d. anaphase II of meiosis.
- _____ 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.
- _____ 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.
- _____ 47. A group of similar cells that perform a single function is called a(an)
a. nerve.
b. organ.
c. tissue.
d. organ system.
- _____ 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
- _____ 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.
- _____ 50. Unlike kinetic energy, potential energy is
a. energy of motion.
b. stored.
c. conserved.
d. not measurable.
- _____ 51. The ability to do work or cause change describes
a. temperature.
b. density.
c. matter.
d. energy.
- _____ 52. If an atom contains 11 protons and 12 neutrons, its atomic number is
a. 1.
b. 11.
c. 12.
d. 23.
- _____ 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
- _____ 54. The cell body of a neuron collects information from which structure?
a. dendrites
b. Nodes of Ranvier
c. synapse
d. myelin sheath