

Biology Pre-Test

Introduction

Introduction

The pre-test that follows is designed to identify areas where you, the student, can improve your skills before or after taking the Alabama High School Graduation Exam (AHSGE) in Science.

Directions

Read each question carefully and darken the circle corresponding to your answer choice. Once you have completed this pre-test, circle the questions you answered incorrectly on the pre-test evaluation chart on page 26. For each question that you missed on the pre-test, review the corresponding sections in the book as given in the evaluation chart. Read the instructional material, do the practice exercises, and take the section review test at the end of each section.

Purpose of the Pre-Test

The following pre-test can be used as practice for the AHSGE in Science, but it is primarily a diagnostic tool to help you identify which skills you can improve in order to prepare better for the actual test. Any pre-test question answered incorrectly may identify a skill needing improvement or mastery. Review the corresponding skill(s) indicated in the Pre-Test Evaluation Chart by reading the instructional material on the given pages and completing the practice exercises and reviews. By reviewing each skill, you will improve mastery of the material to be tested on the Science portion of the AHSGE and potentially increase the score you receive on that exam. (The practice tests, which are given in separate booklets, are provided to give you additional practice taking tests similar to the actual AHSGE in Science.)

General Information About the AHSGE in Science

The AHSGE in Science will consist of 100 multiple-choice questions. You must obtain a score of 491 or higher on the exam to pass.

Biology Pre-Test

9. A cell moves glucose across its cell membrane from an area of lower concentration to an area of higher concentration by expending energy to do so. This movement is an example of

- A osmosis.
- B active transport.
- C diffusion.
- D passive transport.

(A) (B) (C) (D)

10. The cell membrane is made primarily of

- A phospholipids.
- B nucleic acids.
- C carbohydrates.
- D water.

(A) (B) (C) (D)

11. Which of the following is the main function of nucleic acids in cells?

- A to create ATP
- B to store genetic information
- C to store long-term energy
- D to form structural components of the body

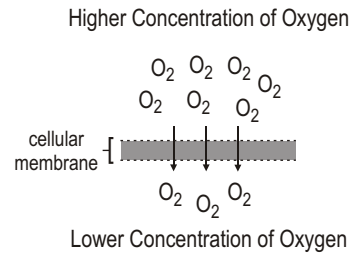
(A) (B) (C) (D)

12. The concentration of CO_2 (carbon dioxide) must be maintained within a narrow range in the blood of most mammals. Maintaining the correct concentration of CO_2 in the blood is an example of

- A excretion.
- B glycolysis.
- C homeostasis.
- D transpiration.

(A) (B) (C) (D)

13. Study the diagram below.



The movement of oxygen as diagramed above is an example of

- A osmosis.
- B active transport.
- C diffusion.
- D photosynthesis.

(A) (B) (C) (D)

14. Which of the following is NOT a function of protein?

- A forming the main component of muscle
- B forming enzymes
- C storing and transporting substances
- D storing and passing on genetic information

(A) (B) (C) (D)

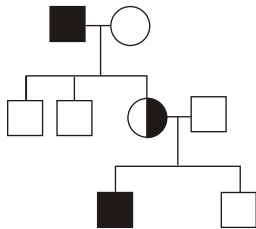
15. A plant that normally grows near a freshwater pond is transplanted near a saltwater marsh. What will MOST likely happen to the plant?

- A Its cells will gain turgor pressure.
- B The plant will wilt and possibly die.
- C Its cells will burst.
- D The plant will experience no change.

(A) (B) (C) (D)

Biology Pre-Test

39. Look at the pedigree graphic below.



This pedigree shows that only males are affected by a certain disorder. What type of inheritance is indicated by the pedigree?

- A recessive
- B dominant
- C incomplete
- D sex-linked

(A) (B) (C) (D)

40. Certain breeds of cattle have a gene for red hair and a gene for white hair. If a white bull is crossed with a red cow, the offspring will have roan hair. Roan is a combination of some red and some white. The genes that cause roan hair color are an example of

- A incomplete dominance.
- B codominance.
- C recessive.
- D homozygous dominance.

(A) (B) (C) (D)

41. The trait for brown eyes (B) in humans is dominant to blue eyes (b). Two parents with brown eyes have a child with blue eyes. What can you conclude about the genotypes of the parents?

- A Both parents are heterozygous for eye color.
- B One parent is homozygous for brown eyes, and the other parent is heterozygous.
- C Both parents are homozygous for brown eyes.
- D One parent is homozygous for brown eyes, and the other parent is homozygous for blue eyes.

(A) (B) (C) (D)

42. If a certain trait is present even if only one allele for that trait is present, that trait is said to be

- A a sex-linked trait.
- B a pedigree trait.
- C a dominant trait.
- D a recessive trait.

(A) (B) (C) (D)

43. Which of the following would be the LEAST likely to cause birth defects in offspring?

- A repeated exposure to x-rays
- B prolonged skin contact with pesticides
- C losing a limb in an industrial accident
- D breathing second-hand tobacco smoke

(A) (B) (C) (D)

44. What is the function of messenger RNA?

- A to transfer the code from the DNA in the nucleus to the cytoplasm
- B to store and pass on genetic information
- C to assist in building proteins by adding amino acids in the ribosome
- D to create the energy needed for cellular processes

(A) (B) (C) (D)

45. A chemical company that produces a weed killing chemical also produces a genetically modified corn plant that is not harmed by the weed killer. The company created the new corn plant by adding an herbicide resistant gene. These new corn plants are examples of

- A plasmids.
- B transgenic organisms.
- C transformations.
- D recombinants.

(A) (B) (C) (D)

Biology Pre-Test

Evaluation Chart

If you missed question #:	Go to section(s):	If you missed question #:	Go to section(s):	If you missed question #:	Go to section(s):
1	1.1, 1.3, 2.2	35	9.2, 9.3	69	17.3
2	3.1	36	10.1, 10.2	70	17.5
3	3.1	37	10.1, 10.2	71	17.1, 17.3, 17.5, 18.2, 18.3
4	1.1, 1.3	38	10.1, 10.2	72	18.3
5	2.3, 2.4	39	10.3, 11.4	73	17.2
6	3.1, 3.2	40	11.2	74	18.4
7	3.1, 3.2	41	10.1, 10.2	75	20.1, 20.2
8	2.1, 2.3, 2.4, 5.2	42	10.1	76	18.4
9	7.1, 7.2, 7.3, 7.4	43	12.4	77	17.4, 18.4
10	6.3, 7.1	44	12.3	78	18.3
11	6.5	45	12.5	79	20.2
12	7.1, 7.5	46	12.1, 12.2	80	22.3, 22.4
13	7.1, 7.2	47	12.5	81	22.1, 22.5
14	6.4, 6.6	48	12.3, 12.4	82	22.3
15	7.3	49	12.1	83	13.3, 15.1
16	7.3	50	9.2	84	5.5, 13.3
17	7.6	51	20.2	85	22.4
18	6.6	52	10.1, 10.2, 10.3	86	22.3
19	7.5	53	10.1, 10.2, 11.3	87	22.1, 22.5
20	8.3, 8.5	54	8.3, 13.3, 14.1, 14.2, 15.1	88	23.4
21	8.1, 8.2	55	14.1, 14.3	89	21.4
22	5.4, 5.5	56	13.4	90	21.2
23	5.4	57	13.3	91	22.2, 22.5
24	5.3, 5.4	58	13.2	92	23.3
25	5.1	59	13.1	93	23.4
26	5.3, 13.3, 14.1	60	13.1	94	21.1
27	5.2	61	13.1	95	23.1
28	5.6	62	15.1, 15.2, 15.3	96	23.1
29	22.1	63	15.1, 15.4, 15.5	97	22.2
30	5.6	64	15.3	98	22.2
31	9.1	65	16.2	99	23.2
32	9.2	66	15.6	100	22.6
33	9.4	67	15.5		
34	9.2	68	16.2, 16.4		