STAAR Practice Test 2024 Biology
Answer Key

Item Position	Item Type	TEKS Assessed	Maximum Number of Points	Correct Answer(s)	Reporting Category	Readiness or Supporting
1	Multiple Choice	1.B.5.B	1	B	1	Supporting
2	Multiple Choice	3.B.9.B	1	C	3	Supporting
3	Multiple Choice	1.B.12.B	1	C	1	Readiness
4	Multiple Choice	4.B.13.D	1	C	4	Readiness
5	Multi-Part	2.B.7.C	2	C, C	2	Readiness
6	Multiple Select	1.B.5.B	2	B, C, E	1	Supporting
7	Inline Choice	4.B.13.D	2	See Appendix 1.1	4	Readiness
8	Multiple Choice	1.B.12.B	1	C	1	Readiness
9	Multiple Choice	2.B.7.C	1	C	2	Readiness
10	Multiple Choice	1.B.5.D	1	D	1	Readiness
11	Multiple Choice	4.B.13.C	1	B	4	Supporting
12	Multiple Choice	3.B.10.D	1	B	3	Supporting
13	Multiple Choice	1.B.6.C	1	A	1	Supporting
14	Multiple Choice	2.B.8.B	1	C	2	Readiness
15	Multiple Choice	3.B.9.B	1	B	3	Supporting
16	Multiple Choice	1.B.11.B	1	C	1	Supporting
17	Multiple Choice	3.B.9.A	1	C	3	Readiness
18	Multiple Choice	3.B.10.A	1	A	3	Supporting
19	Multiple Choice	2.B.7.B	1	A	2	Supporting
20	Multiple Choice	1.B.6.B	1	C	1	Supporting
21	Multiple Choice	4.B.13.D	1	B	4	Readiness
22	Short Constructed Response	1.B.11.A	2	See Appendix 1.2	1	Supporting
23	Multiple Choice	3.B.10.B	1	C	3	Supporting
24	Multiple Choice	1.B.5.B	1	B	1	Supporting
25	Multiple Choice	2.B.7.A	1	C	2	Readiness
26	Multiple Choice	1.B.6.C	1	C	1	Supporting
27	Multiple Choice	4.B.13.D	1	A	4	Readiness
28	Text Entry	2.B.7.C	1	5	2	Readiness
29	Multiple Choice	1.B.12.A	1	B	1	Readiness
30	Multi-Part	3.B.9.A	2	A, B	3	Readiness
31	Multiple Choice	4.B.13.C	1	B	4	Supporting
32	Multiple Choice	3.B.10.A	1	D	3	Supporting
33	Multiple Choice	1.B.5.A	1	D	1	Readiness
34	Multiple Choice	3.B.10.D	1	D	3	Supporting
35	Short Constructed Response	4.B.13.B	2	See Appendix 1.3	4	Readiness
36	Multiple Choice	2.B.8.A	1	C	2	Supporting
37	Multiple Choice	1.B.11.B	1	D	1	Supporting

38	Inline Choice	4.B.13.A	2	See Appendix 1.4	4	Readiness
39	Multiple Select	1.B.5.B	2	C, E	1	Supporting
40	Multiple Choice	3.B.10.B	1	D	3	Supporting
41	Multiple Choice	1.B.11.B	1	D	1	Supporting
42	Multiple Choice	1.B.5.D	1	B	1	Readiness
43	Multiple Choice	2.B.8.B	1	B	2	Readiness
44	Multiple Choice	4.B.13.B	1	D	4	Readiness
45	Multiple Choice	2.B.7.C	1	D	2	Readiness

2025 Practice Test Biology
Appendix

1.1

Based on the information provided, explain how the mutated *R* gene of rockcress plants would **MOST LIKELY** affect an ecosystem that the plants are part of.

Choose the correct answer from each drop-down box to complete the sentences.

The pathogen resistance in rockcress plants with the *R* gene mutation is lower than the resistance in plants without the mutation. Therefore, an increased frequency of the mutation in an ecosystem would likely cause a decrease in available food and shelter for insects. This would negatively affect the ecosystem, and the biodiversity of the ecosystem would likely decrease.

1.2

A model of photosynthesis is shown.

$$\text{Light energy} + 6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$$

Using the model, explain how matter is conserved during photosynthesis, **AND** explain how energy is transferred during photosynthesis.

Think about the information carefully. Then enter your answer in the box provided.

Matter is conserved because the amount of carbon, hydrogen and oxygen is the same in both the reactants and products.
AND
Energy is transferred as light energy and is converted into chemical energy/stored in chemical bonds.

1.3

Wild hogs are an invasive species that disrupt habitats through their rooting, trampling, and feeding behaviors. They can even change their environment by altering water quality and causing shifts in plant composition and distribution. Wild hogs prey on the eggs of ground-nesting birds such as chickens. A partial food chain from a Texas grassland ecosystem is shown.

Bluestem grass → beetles → (young) prairie chickens → bobcats

Explain how the introduction of wild hogs into this food web would **MOST LIKELY** affect the flow of energy to bobcats in the ecosystem, **AND** describe how the introduction of wild hogs **MOST LIKELY** would affect the stability of the ecosystem.

Think about the information carefully. Then enter your answer in the box provided.

Less energy would flow to bobcats because wild hogs consume food sources for bobcats.
AND
Ecosystem stability would most likely decrease.

1.4

Based on the information provided, describe how ecological relationships related to *B. burgdorferi* **MOST LIKELY** affect ecosystem stability.

Choose the correct answer from each drop-down box to complete the sentences.

A commensal relationship exists between [*B. burgdorferi* and ticks], and a parasitic relationship exists between [*B. burgdorferi* and humans]. It can be inferred that these relationships have [a negative] effect on ecosystem stability because ticks produce a substance that [destroys] beneficial bacteria on human skin, resulting in [an increase] in the frequency of Lyme disease in humans.