The Washington Professional
Educator Standards Board

Sample Test Questions

Agriculture Education

WA-SG-FLD037-01

SAMPLE TEST QUESTIONS

The sample test questions in this document are designed to give you an introduction to the nature of the questions included in the Washington Educator Skills Tests—Endorsements™ (WEST–E™). They represent the various types of questions you may expect to see on an actual test in this test field; however, they are *not* designed to provide diagnostic information to help you identify specific areas of individual strength or weakness or to predict your performance on the test as a whole.

Work through the sample questions carefully before referring to the answer key that follows. The answer key provides the correct response for each question and lists the objective within the test framework to which each question is linked. When you are finished with the sample questions, you may wish to review the test objectives and descriptive statements provided in the test framework for this test field.

In addition to reading and answering the sample questions, you should also utilize the following preparation materials available on the WEST Web site:

- Read **WEST–E Test-Taking Strategies** to understand how test questions are designed to measure specific test objectives and to learn important test-taking strategies for the day of the test.

- Review the **Test Summary and Framework** for your test field to familiarize yourself with the structure and content of the test. This document contains general testing information as well as the percentage of the total test score derived from each content domain described in the test framework.

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SAMPLE MULTIPLE-CHOICE QUESTIONS

1. Students in an agricultural education class are participating in a semester-long exercise to investigate the effect of soil pH on the growth of tomato plants. Tomato plants will be grown in the school's greenhouse in soil with different pH levels. The height of the plants will be measured each week, and each plant assessed for signs of nutrient deficiencies. At the end of the semester, yields of each group of tomato plants will be compared. Which of the following aspects of this exercise most requires students to apply principles of the scientific method?

   A. identifying the manipulated variables that must be controlled in the exercise

   B. using proper materials and methods to accurately measure soil pH

   C. recognizing and distinguishing between symptoms of different nutrient deficiencies

   D. applying horticultural techniques for growing plants in a greenhouse

2. Participating in FFA career development events (CDEs) benefits students in agricultural education primarily by:

   A. helping teachers assess their knowledge of course material and identify gaps to be addressed.

   B. assisting them in meeting and setting up job interviews with potential employers in agriculture.

   C. introducing them to the job requirements and opportunities in a variety of agriculture careers.

   D. helping them develop and showcase their technical knowledge and communication skills.

3. Which of the following strategies on the part of the teacher would be most appropriate and effective for maintaining a safe working environment in a high school agricultural science laboratory?

   A. limiting access to lab equipment to students who have demonstrated responsibility in the past

   B. monitoring student behavior to keep order and ensure that students remain focused on tasks

   C. testing all equipment before each laboratory session to ensure that it is working properly

   D. limiting lab exercises to those that have been demonstrated to pose no risk to participants

4. Which of the following is one reason why a maker of fine cheeses might use milk from Jersey dairy cows rather than from Holstein-Friesian cows?

   A. Milk from Jersey cows contains larger quantities of natural rennet than milk from Holsteins.

   B. Milk from Jersey cows is cheaper because the cows produce larger quantities of milk per year than Holsteins.

   C. Milk from Jersey cows has a higher butterfat content than milk from Holsteins.

   D. Milk from Jersey cows contains fewer bacteria and leukocytes because the cows are more resistant to mastitis than Holsteins.

5. In general, the most serious economic effect of attacks by mosquitoes and ticks on horses and cattle in Washington State is caused by:

   A. extensive blood loss in affected animals.

   B. irritation of animals that leads them to go off their feed.

   C. transmission of a variety of diseases to animals.

   D. death of animals when larvae burrow into vital organs.

6. In genetic engineering, the ability of scientists to identify the genes that influence the expression of specific traits has been most enhanced by technological advances in:

   A. DNA sequencing.

   B. cloning.

   C. DNA splicing.

   D. cell enucleation.

7. A confinement facility for swine in Washington State uses an anaerobic lagoon to manage wastes. To minimize the possibility of polluting neighboring streams with runoff from the lagoon, it would be most important to include which of the following elements in its design?

   A. a device for continuously agitating the liquid in the lagoon

   B. an impervious layer of concrete or clay at the bottom of the lagoon

   C. a system for diverting rainwater and snowmelt away from the lagoon

   D. a method for excluding all solid wastes from entering the lagoon

8. The number and kind of microorganisms present in a soil most directly affects which of the following characteristics of the soil?

   A. texture

   B. humus content

   C. structure

   D. pH

9. Which of the following organelles within the plant cell provides energy to the cell by converting the metabolic products of photosynthesis into ATP?

   A. ribosome

   B. Golgi apparatus

   C. lysosome

   D. mitochondrion

10. Which of the following best explains why the flowers of grasses are small and inconspicuous compared with the flowers of most other flowering plants?

    A. Grasses generally put more energy into vegetative growth rather than seed production.

    B. Grasses are generally pollinated by small beetles that find the flowers by smell rather than sight.

    C. Grasses generally reproduce by the spread of underground stolons rather than by seeds.

    D. Grasses are generally pollinated by the wind rather than by insects or other animals.

11. Which of the following best explains why fresh apples are often placed after harvest in an environment with increased carbon dioxide and reduced oxygen in the atmosphere?

    A. The apples will suffer less damage after harvest because the high-CO_2/low-O_2 environment prevents insect eggs from hatching.

    B. The apples will keep longer without softening because their respiration rate will be lower in a high-CO_2/low-O_2 environment.

    C. The apples will taste sweeter because the high-CO_2/low-O_2 environment speeds the conversion of starches into sugars.

    D. The apples will ripen faster because the high-CO_2/low-O_2 environment prevents the breakdown of ethylene gas into its inert components.

12. A bedding-plant grower plants tomato seeds in rows in a large tray. After the seedlings have emerged and the first true leaves have developed, the grower notices that seedlings in parts of several rows have toppled over. When the plants are examined, it is found that the stem is constricted at the soil level and the root is shriveled. Over the course of the next week, most of the seedlings in the tray have died. Which of the following measures should the grower have taken to prevent the appearance of this condition?

    A. planting the seeds in a sterile growing medium

    B. germinating the seeds in complete darkness

    C. fertilizing the seedlings immediately after they emerged

    D. watering the seedlings more frequently

13. The ability of hydraulic systems to lift and support large loads in agriculture applications depends primarily on which of the following principles?

    A. Fluids in a hydraulic system cannot be compressed when force is applied to the fluid.

    B. The viscosity of fluids used in hydraulic systems is inversely proportional to the temperature of the fluid.

    C. The application of force to a fluid in a hydraulic system leads to an increase in temperature of the fluid.

    D. The types of fluids used in hydraulic systems have lower coefficients of friction than most other types of fluids.

14. Which of the following best describes the process of soldering when joining metal?

    A. Soldering employs high pressures and temperatures to join metal surfaces without using filler metal and without melting the base metal.

    B. Soldering uses high temperatures to melt and fuse together the adjacent base metal surfaces that are to be joined.

    C. Soldering uses a low-melting-point filler metal to join metal surfaces together without melting the base metal.

    D. Soldering uses low temperatures to melt an alloy that will coat the base metal surfaces and prevent oxidation during high-temperature welding.

15. Which of the following best explains why long-lived pesticides such as DDT affect populations of raptors, such as eagles and ospreys, to a greater extent than populations of finches and warblers?

A. Raptors and other large birds have slower metabolisms than smaller birds and are unable to break down pesticides as effectively.

B. Toxic chemicals are unevenly distributed in the environment, and raptors live, feed, and nest in areas where concentrations are highest.

C. Raptors are long-lived birds and are likely to be exposed to these pesticides for a longer time during the course of their lives.

D. Toxic chemicals become more concentrated as they move up the food chain, and raptors are top predators in most ecosystems.

16. Which of the following crop production practices is most likely to increase soil erosion in an agricultural field?

A. using sprinkler systems to irrigate a growing crop

B. harvesting more than one crop from a field in a single year

C. using plastic or natural mulches to control weeds

D. leaving fallow fields uncovered by vegetation or crop residues

17. Which of the following forest management practices is most likely to improve wildlife habitat and increase the diversity of plant and animal species that inhabit an area?

A. controlling insect pests by spraying infested sections of the forest

B. opening the forest canopy by harvesting small patches of trees

C. preventing wildfires by removing dead standing and fallen trees

D. planting non-native vegetation that is well adapted to the area

18. Which of the following is the best example of an agricultural cooperative?

A. A group of independent dairy farmers buys feed in bulk, distributes its products under the same label, and shares the profits.

B. An entrepreneur sets up a roadside stand to market his own vegetables and those he has purchased from neighboring farmers.

C. Several investors purchase a swine production facility and share in the profits according to the amount each has invested in the business.

D. A supermarket chain contracts with local growers to supply one of its stores with fresh produce throughout the growing season.

19. A farmer decides to convert some marginal agricultural land to wildlife habitat. Which of the following represents the opportunity cost to the farmer of the decision to take the marginal land out of production?

A. the profit that would have been made if the land had been planted

B. the direct costs of converting the land to wildlife habitat

C. the average profit that is made per acre of land on the farm

D. the costs of planting the land to a crop in the previous year

20. A price-skimming strategy is one in which high prices are charged for a product in order to ensure high profits or recover high production costs. This type of pricing strategy is likely to be most effective for an agriculture product when:

A. a product is sold to a wholesaler or processor before being sold to the public.

B. a new product has little or no competition from similar products already on the market.

C. a product is marketed through the Internet or a catalog rather than through a retail store.

D. a new product is introduced to help prop up a line of related products that are experiencing lagging sales.

ANSWER KEY

Question Number	Correct Response	Test Objective
1	A	0002
2	D	0003
3	B	0004
4	C	0005
5	C	0006
6	A	0007
7	C	0008
8	B	0009
9	D	0010
10	D	0011
11	B	0012
12	A	0013
13	A	0014
14	C	0015
15	D	0016
16	D	0017
17	B	0018
18	A	0019
19	A	0020
20	B	0021