The University of Texas at Austin
UT High School
102915

Environmental Systems B Study Guide
Credit by Exam for Credit Recovery or Acceleration

The exam you are interested in taking is designed to test your proficiency in the relevant subject matter. You should be thoroughly familiar with the subject matter before you attempt to take the exam. This EA/CBE Study Guide can help you prepare for the exam by giving you an idea of what you need to review. You can check your familiarity level by reviewing the Texas Essential Knowledge and Skills (TEKS) for this course. (See below.) To refine your skills, you can refer to any of the state-adopted textbooks.

Texas Essential Knowledge and Skills (TEKS)

Every question that appears on this exam is derived from the knowledge and skills statements and student expectations within the Texas-mandated standards, the Texas Essential Knowledge and Skills (TEKS). You can view the TEKS for this exam online via the following link: http://ritter.tea.state.tx.us/rules/tac/chapter112/ch112c.html#112.37. Refer to section (c), Knowledge and skills, 1A–9L. Throughout this guide, you'll see TEKS references. These refer to the numbers listed under (c) Knowledge and skills; for example, 1A or 3B.

Materials Needed

You will need to bring a #2 pencil and a scientific calculator to complete the exam. You will receive a computer-graded answer sheet when you arrive at the testing center.

Exam Structure

You will be allowed **3 hours** to complete this exam. The Environmental Systems B exam consists of 50 multiple-choice questions worth 2 points each for a total of 100 points. The exam covers a wide variety of topics. To help you study, we have isolated 9 key topics and provided study tips and sample questions for each. You can expect about 4-6 multiple-choice questions on each of the following topics:

Topic 1: Food and Agriculture
Topic 2: Land Use and Management
Topic 3: Nonrenewable Energy Resources
Topic 4: Renewable Energy Resources
Topic 5: Air, Water, and Soil Pollution
Topic 6: The Tragedy of the Oceans
Topic 7: Global Change
Topic 8: Global Solutions
Topic 9: Waste Management and Upcycling

Scholastic Honesty

When you arrive at the testing center you will be asked to carefully read the exam rules and sign a statement agreeing to take the exam in accordance with the rules. This is called the Examinee's Certification. The following is a copy of these rules:

Examinee's Certification

This certification must be signed *before* the exam is administered and then returned with the completed examination attached, or credit for the exam will not be given.
Scholastic dishonesty is a serious academic violation that will not be tolerated. Scholastic dishonesty encompasses, but is not limited to:

- copying from another student's work;
- using an unauthorized testing proctor or taking the exam at an unauthorized testing location;
- using materials not authorized by a testing proctor;
- possessing materials that are not authorized by a testing proctor, such as lessons, books, or notes;
- knowingly using or soliciting, in whole or Topic, the contents of an unadministered test;
- collaborating with or seeking aid from another student without authorization during the test;
- substituting for another person, or permitting another person to substitute for oneself, in taking a course test or completing any course-related assignment;
- using, buying, stealing, or transporting some or all of the contents of an unadministered test, test rubric, homework answer, or computer program.

Evidence of scholastic dishonesty will result in a grade of *F* on the examination and an *F* in the course (if applicable).

At the testing center, you will be asked to sign a statement that says
you have read the above and agree to complete the examination with scholastic honesty.

General Study Tips

The bulleted lists and sample questions in this study guide can assist you in preparing for the exam. It is a fairly complete guide for studying, but does not cover every item on the test. Ultimately, you should use the TEKS to guide your exam preparation.

Additional Study Tips

The following information provides direction for your studies. For each part, you will find study tips and sample questions to give you a general idea of the types of questions you can expect to see on the exam.

Topic 1: Food and Agriculture

Large-scale farming techniques and technology provide abundant food for a growing global population, but they can have a negative impact on human health and the environment. Industrialized agriculture is, at least in part, responsible for global problems such as deforestation, air and water pollution, and the depletion of soil fertility. Luckily there is a growing movement to increase the environmental sustainability of agricultural systems.

Study Tips for Topic 1:

This topic relates to TEKS 3B, 3C, 5D, 5F, 9A, 9B, 9F, 9J, and 9G. Familiarize yourself with those TEKS, and then be prepared to:

- identify renewable and non-renewable resources that must come from outside an ecosystem
- evaluate the impact of waste management methods, such as composting, on resource availability
- evaluate cost-benefit trade-offs of industrialized farming
- identify causes of air, soil, and water pollution
- analyze how ethical beliefs can be used to influence scientific practices such as methods for increasing food production
- research the advantages and disadvantages of "going green," such as organic gardening and farming, and natural methods of pest control
- investigate types of air, soil, and water pollution such as greenhouse gas emissions and pesticide runoff
- communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials
- draw inferences based on data related to promotional materials for products and services.

Sample Questions for Topic 1:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

1. All of the following statements about eutrophication are true, except _____.

   A. fertilizer runoff from farms causes algal blooms in local waterways
   B. algal blooms are a result of increased availability of at least one limiting factor
   C. algal blooms release excessive amounts of greenhouse gases into the atmosphere
   D. decomposition of algae and other organisms depletes dissolved oxygen in the water

2. You are purchasing hamburger meat at the grocery store. In front of you are two different products. Product A has a USDA Organic seal on its label. Product B is labeled "all natural," "fed a vegetarian diet," and "raised humanely." What is the most significant difference between the beef contained in these two products?

   A. The beef in product B was raised naturally and humanely. We cannot infer anything about how the beef in product A was raised.
   B. The beef in both products was raised humanely, on pasture not treated with pesticides. Neither product contains antibiotics or growth hormones.
   C. The beef in product A was raised without the use of antibiotics and growth hormones. From the information available, we cannot infer if antibiotics or growth hormones were administered to the beef in product B.
   D. The beef in product B was raised without the use of antibiotics and growth hormones. From the information available, we cannot infer if antibiotics or growth hormones were administered to the beef in product A.

3. A major disadvantage of large-scale, commercial farming is _____.

   A. the ability to produce large quantities of food on small amounts of land
   B. the water pollution caused by synthetic fertilizer runoff and manure lagoons
   C. the enhanced genetic engineering technology used to reduce pesticide inputs
   D. the a reduction in nonrenewable resource inputs due to composting and crop rotation

Topic 2: Land Use and Management

There are a variety of different types of land use and management, including residential, commercial, recreational, agricultural, and wilderness. Each one has a unique impact on soil fertility and the environment. Regardless of their intent, human activities often cause soil, water, and air pollution. One specific example of this is the global production of palm oil, which provides economic growth and stability to farmers in developing nations at the expense of biodiversity and soil fertility. In response to the environmental challenges posed by unregulated or poor management of our land, there has been an increase in recent years in legislation designed to regulate and protect our natural environment.

Study Tips for Topic 2:

This topic relates to TEKS 3D, 5A, 5E, 9E, 9K. Familiarize yourself with those TEKS, and then be prepared to:

- summarize methods of land use and management, and describe their effects on land fertility
- analyze and evaluate the economic significance and interdependence of resources within environmental systems
- evaluate the effect of human activities on the environment
- analyze present local, state, and national legislation related to land use and management
- analyze and evaluate the use of palm oil and its impact on scientific thought, society, and the environment

Sample Questions for Topic 2:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

4. Read the following passage, then use the information to answer the question below.

   Realizing the attraction of ecotourism, the residents of low-income countries may come to see that preserving wildlife habitats is more lucrative than, say, cutting down forests or grazing livestock to survive. In South Africa, Namibia, and Zimbabwe, for example, a substantial expansion of both rhinoceros and elephant populations is broadly credited to ecotourism, which has given local communities an economic interest in protecting them.

   According to the passage, which of the following is true of ecotourism?

   A. Ecotourism gives poorer regions an economic incentive to clear their forests and wild habitat areas.
   B. Ecotourism involves clearing forests to provide space for natural wildlife that tourists can come see.
   C. Ecotourism gives poorer areas an economic reason to preserve their wildlife and natural habitats.
   D. Ecotourism involves selling natural wildlife products, and thus creates economic opportunity for poorer regions.

5. Palm oil is found in more than 50% of supermarket products. It is produced in regions that are within 10 degrees of the equator, which often happens to be home tropical rainforests. Which of the following is NOT a negative environmental impact of palm oil production?

   A. deforestation
   B. ozone layer depletion
   C. reduction in soil fertility
   D. reduction in biodiversity

Topic 3: Nonrenewable Energy Resources

Electricity and fuel have become fundamental resources in an industrial age, and it is hard to imagine life without them. The majority of our energy in the United States comes from non-renewable energy resources, including the fossil fuels - coal, oil, and natural gas - and nuclear power. While these resources have a variety of benefits, ranging from cost to abundance to energy density, their availability on Earth is finite. Both nuclear power and fossil fuels pose threats to human health and ecosystems, and the combustion of fossil fuels in particular is having a concerning impact on our atmosphere and environment.

Study Tips for Topic 3:

This topic relates to TEKS 2I, 2J, 5D, 6B, and 7C. Familiarize yourself with those TEKS, and then be prepared to:

- identify non-renewable energy resources that must come from outside an ecosystem
- describe and compare non-renewable energy sources derived from natural resources such as oil, natural gas, coal, and nuclear
- analyze and predict the effects of non-renewable resource depletion
- organize, analyze, evaluate, build models, make inferences, and predict trends from data
- perform calculations using dimensional analysis, significant digits, and scientific notation

Sample Questions for Topic 3:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

6. Oil, coal, and natural gas are considered to be nonrenewable energy resources because _____.

   A. they do not exist naturally and must be synthesized in industrial settings
   B. they release significant amounts of greenhouse gases into the atmosphere
   C. the industrial settings where they are processed must be frequently rebuilt
   D. they were formed over hundreds of millions of years and exist in finite amounts

7. All of the following statements are true of nuclear power except _____.

   A. nuclear power is produced from the fission of uranium atoms
   B. nuclear power emits significant amounts of greenhouse gases
   C. large amounts of energy can be produced from small amounts of uranium
   D. nuclear waste poses significant threats to human health and the environment

8. Central air conditioning systems run on electricity, usually produced by the combustion of coal in a power plant. On average, central AC systems consume 3500 watts per hour. If your family runs the AC for 12 hours per day, approximately how many kWh do you consume per week to cool your home?

   A. 3.5×10^5 kWh
   B. 2.9×10^2 kWh
   C. 2.9×10^5 kWh
   D. 3.5×10^2 kWh

Topic 4: Renewable Energy Resources

As world energy consumption rises, and reserves of nonrenewable energy resources dwindle, renewable or alternative energy sources play an increasingly important role in energy production. These sources include solar, wind, biomass, geothermal, and hydropower. Each one has its unique economic and environmental advantages and disadvantages; but in general, renewable energy resources can be easily replenished, and are cleaner but less efficient than fossil fuels.

Study Tips for Topic 4:
This topic relates to TEKS 2I, 6B and 6D. Familiarize yourself with those TEKS, and then be prepared to:

- compare and contrast nonrenewable and renewable energy resources
- make inferences and predict trends from data on world energy consumption

Sample Questions for Topic 4:
The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

9. Which of the statements below accurately describes advantages of wind power over coal power?

I.	Wind is a renewable energy resource
II.	Wind power can only be produced at specific times and locations
III.	Wind power does not emit greenhouse gases
IV.	Wind power has an efficiency rate between 30 and 45%
V.	The cost of manufacturing and installing wind turbines can be prohibitive

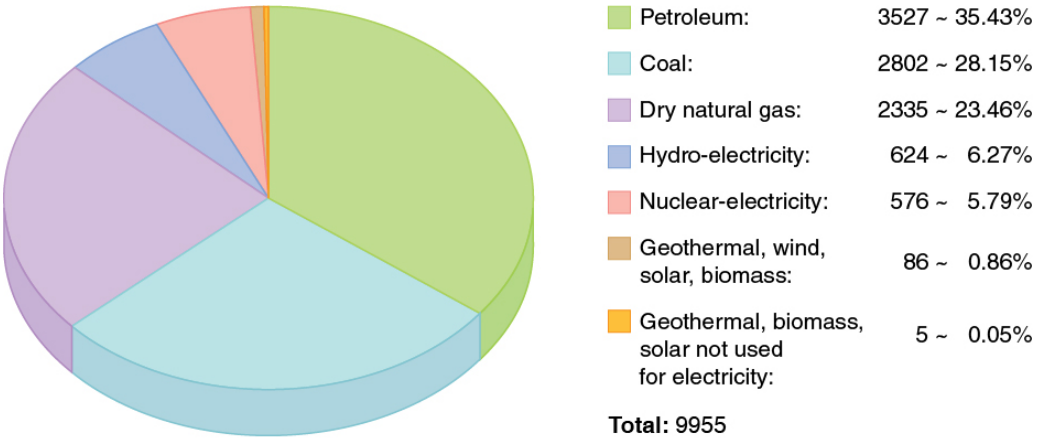
   A. I and III, only
   B. I, III, and IV, only
   C. I, II, III, IV, and V
   D. II, IV, and V only

10. Energy resources are divided into two categories based on whether or not they can be easily replenished. Which of the following statements most accurately describes a renewable energy source?

    A. natural gas, because this gas is naturally, and quickly replenished in different regions of the Earth
    B. natural gas, because only finite amounts exist, and it cannot be replenished in a reasonable amount of time
    C. solar, because new, efficient solar panels are constantly being built and improved
    D. solar, because radiant energy is infinite, and is not used up by photovoltaic panels

11. Based on the information provided in the graph below, what can you infer about world energy consumption?

World energy consumption by source, in billions of kilowatt-hours: 2006



(Image source: http://cnx.org/contents/a4b7e0ec-bded-45de-8016-416aaaa8286b@5/World-Energy-Use)

    A. World energy consumption is increasing exponentially over time.
    B. Petroleum, or crude oil, is the primary source of electricity worldwide.
    C. More energy is consumed from nuclear power than from all renewable energy sources combined.
    D. More energy is consumed from coal power than from all renewable energy sources combined.

Topic 5: Air, water, and soil pollution

The atmosphere, hydrosphere, and geosphere are polluted on a daily basis. Depending upon where you live, the type of pollutants and concentration of pollutants varies. Heavily populated cities tend to have a greater amount of air pollution. Areas with large amounts of farm land might have more soil pollution. Water sources that are close to agricultural lands or offshore drilling sites have a greater chance of being heavily polluted. Pollutants of all kinds have an adverse impact on biodiversity, climate, and the availability of natural resources.

Study Tips for Topic 5:

This topic relates to TEKS 4E and 9A–9D. Familiarize yourself with those TEKS, and then be prepared to:

- identify the causes of air, soil, and water pollution, including point and nonpoint sources
- investigate the types of air, soil, and water pollution
- examine the concentrations of air, soil, and water pollutants using the correct units
- measure the concentration of dissolved substances and describe their impact on an ecosystem
- describe the effect of pollution on global warming, glacial ice cap melting, the greenhouse effect, the ozone layer, and aquatic viability

Sample Questions for Topic 5:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

12. Which of the following is an example of pollution from a point source?

    A. an industrial waste pipe discharges water into a lake
    B. storm water from road surfaces runs into a river
    C. animal manure washed from a farm enters a stream
    D. deforestation leads to sediment run-off, which empties into a pond

13. The table below contains data on concentrations of atmospheric chlorofluorocarbons since 1820. In which year was stratospheric ozone depletion likely at its worst?

Year	Chlorofluorocarbons (ppt)
1820	280
1950	277
1990	275
2015	260

A. 1820
B. 1950
C. 1990
D. 2015

14. At sea level and 30 degrees C, fully saturated fresh water holds between 7.56 and 14.62 ppm dissolved oxygen. You are conducting a water quality test of a local stream and you determine that the dissolved oxygen concentration is 5.02 ppm. Which of the following are likely causes of low dissolved oxygen levels in the stream?

A. fertilizer runoff from farmland, and cooler than normal water temperatures
B. fertilizer runoff from farmland, and warmer than normal water temperatures
C. low biodiversity from overharvesting, and warmer than normal water temperatures
D. high levels of dissolved carbon dioxide, and cooler than normal water temperatures

Topic 6: The Tragedy of the Oceans

How do humans behave when forced to share and take responsibility for common resources? According to Garrett Hardin's Tragedy of the Commons, humans will act in their own best interest without regard for the common good. One example of this phenomenon is the depletion of global fisheries, where for decades humans have overfished ecosystems in search of economic profit and without regard for the environmental effects of their actions. Driven by new technologies, fishing vessels are able to locate and harvest fish at unprecedented rates, endangering hundreds of marine species and disrupting aquatic ecosystems. A variety of local and global initiatives that have been implemented to protect ocean biodiversity, with varying levels of success.

Study Tips for Topic 6:

This topic relates to TEKS 9D–9G and 9K. Familiarize yourself with those TEKS, and then be prepared to:

- evaluate the effect of human activities—including species preservation efforts, nature and conservancy groups, and fishing—on the environment
- identify renewable and non-renewable resources, such as food, that must come from outside an ecosystem
- evaluate cost-benefit trade-offs of commercial activities such as overharvesting.
- describe the effect of pollution on aquatic viability
- analyze past and present local, state and national legislation that regulates the use of natural resources

Sample Questions for Topic 6:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

15. All commercial activities have cost-benefit trade-offs. Enhanced fishing technology—including GPS and sonar systems, bottom trawling nets, and long lines—allow commercial fishing vessels to maximize profits by quickly locating and harvesting massive amounts of fish in a short period of time. This adversely impacts aquatic ecosystems by _____.

    A. improving bycatch methods to further maximize vessel profits
    B. destroying seafloor habitats and depleting aquatic biodiversity
    C. improving aquatic biodiversity which depletes dissolved oxygen
    D. introducing both native and invasive species into aquatic ecosystems

16. One way to prevent individuals from maximizing economic profits at the expense of our natural environment is to _____.

    A. ban federal, state, and local legislation that regulates the use of natural resources
    B. prohibit federal, state, and local legislation that regulates greenhouse gas emissions
    C. fast-track federal, state, and local legislation that encourages the use of natural resources
    D. implement federal, state, and local legislation that regulates the use of natural resources

Topic 7: Global Change

For 4.5 billion years, earth's systems—the atmosphere, biosphere, geosphere, and hydrosphere—have experienced natural fluctuations. However, humans have also intentionally and accidentally altered the environment in many ways. Human activities—including energy production, agriculture, transportation, and industry—are having dramatic and long-lasting effects on the atmosphere, which in turn impact biodiversity, climate, and our hydrosphere. Some of these effects include rising sea levels, changing weather patterns, a reduction in biodiversity, and stratospheric ozone depletion.

Study Tips for Topic 7:
This topic relates to TEKS 4H, 9D, and 9H. Familiarize yourself with those TEKS, and then be prepared to:

- describe the effect of pollution on global warming, glacial melt, the greenhouse effect, the ozone layer, and aquatic viability
- analyze and evaluate different views on the existence of global warming
- research and explain the cause of species diversity

Sample Questions for Topic 7:
The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

17. Which of the following is least likely to occur if the concentration of greenhouse gases in our atmosphere continues to increase?

    A. an increase in ocean acidification
    B. an increase in melting rates of glaciers
    C. an increase in average global temperatures
    D. an increase in the thickness of the ozone layer

18. Data collected from satellite measurements, tide gauge readings, and core samples indicate that the annual rate of sea level rise over the past 20 years has been 3.2 mm per year, about twice the average rate during the previous 80 years. Which of the following are likely causes of increasing rates in sea level rise?

    A. increases in glacial melting and ocean temperatures
    B. increases in stratospheric ozone depletion and smog
    C. natural fluctuations in the atmosphere and hydrosphere
    D. reductions in greenhouse gas emissions and eutrophication

19. Read the passage about global warming below, then answer the question that follows.

> By 2050, rising temperatures exacerbated by human-induced belches of carbon dioxide and other greenhouse gases could send more than a million of Earth's land-dwelling plants and animals down the road to extinction, according to a recent study. "Climate change now represents at least as great a threat to the number of species surviving on Earth as habitat-destruction and modification," said Chris Thomas, a conservation biologist at the University of Leeds in the United Kingdom.
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    According to the passage, which of the following statements best describes Thomas' view on climate change?

    A. Global warming is a natural process and is not a threat to biodiversity.
    B. Global warming is as great a threat to biodiversity as habitat destruction.
    C. Global warming is a natural process that cannot be linked to human activities.
    D. Global warming will have a negative effect on biodiversity, but not as great as habitat destruction.

Topic 8: Global Environmental Solutions

The environmental problems that currently exist on earth are diverse, complex, and inextricably linked. Politicians, scientists, advocates, and consumers are working tirelessly to promote environmental sustainability at the local, state, national, and global level. However, the environmental landscape is constantly changing, as new technologies are developed, research is published, and social awareness of environmental issues changes.

Study Tips for Topic 8:

This topic relates to TEKS 9I, 9J, 9K, and 9LFamiliarize yourself with those TEKS, and then be prepared to:

- discuss the impact of research and technology on social ethics and legal practices in various environmental solutions, such as the design of new buildings, recycling, and emission standards
- research the advantages and disadvantages of sustainable practices such organic farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars
- analyze past and present environmental legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act
- analyze past and present international environmental treaties and protocols, including the Antarctic Treaty System, the Montreal Protocol, and the Kyoto Protocol

Sample Questions for Topic 8:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

20. If all nations on earth ratified the Kyoto Protocol, which of the following would most likely occur?

    A. Global water quality would improve.
    B. Nuclear waste management would improve.
    C. Global greenhouse gas emissions would decrease.
    D. Global chlorofluorocarbon emissions would decrease.

21. The Clean Water Act was enacted by the United States Congress in 1972. This historic piece of environmental legislation effectively _____.

    A. regulated and reduced water pollution from point sources
    B. removed all water pollutants from 80% of U.S. waterways
    C. regulated and reduced water pollution from nonpoint sources
    D. reversed eutrophication occurring along the Mississippi River

22. Natural methods of pest control—such as companion planting, the introduction of beneficial insects, and crop rotation—are commonly used by organic farmers. One major advantage of these farming practices is that they _____.

    A. increase biodiversity and decrease pollution
    B. reduce off-farm inputs from renewable resources
    C. decrease biodiversity and greenhouse gas emissions
    D. increase the application of cheap synthetic fertilizers

Topic 9: Waste Management

The conservation of both renewable and nonrenewable resources contributes to environmental sustainability. Methods for the proper disposal and recycling of products depends on the product material, quality, and location. There are many forms of waste management that individuals, corporations, and governments can implement to improve the availability and sustainability of renewable and nonrenewable resources. Some of these methods include reducing and conserving the resources that one consumes, as well as recycling, reusing, composting, and upcycling waste products. Local and national governments play a particularly important role in waste management, as evidenced by the wide range of practices that are found throughout the United States and the world.

Study Tips for Topic 9:

This topic relates to TEKS 1B, 5C, and 5F. Familiarize yourself with those TEKS, and then be prepared to:

- demonstrate an understanding of the use and conservation of resources and the proper disposal of recycling materials
- document the use of and conservation of both renewable and nonrenewable resources and how they pertain to sustainability
- evaluate the impact of waste management methods such as reduction, reuse, recycling, and composting on resource availability

Sample Questions for Topic 9:

The following are sample questions. You can find the correct answers listed after the questions, but try answering the questions without looking at the answers first to check your comprehension.

DIRECTIONS: Select the BEST responses to the following questions.

23. The conservation of renewable and nonrenewable resources is important for environmental sustainability. Which of the following are examples of conservation of a renewable resource?

I. Carpooling
II. Installing low flow toilets
III. Using less paper
IV. Turning of the lights

A. I, III
B. I, IV
C. II, III
D. II, IV

24. Coal and nuclear power provide the majority of global electricity production. How does conserving electricity pertain to the sustainability of nonrenewable resources?

A. By conserving electricity, more renewable resources are used which makes nonrenewable resources less sustainable over time.
B. By conserving electricity, fewer nonrenewable resources are used which makes renewable resources sustainable for a longer period of time.
C. By conserving electricity, fewer renewable resources are used which makes renewable resources sustainable for a longer period of time.
D. By conserving electricity, fewer nonrenewable resources are used which makes nonrenewable resources sustainable for a longer period of time.

25. Agricultural ecosystems require a variety of inputs from both renewable and nonrenewable resources. One way to improve the sustainability of an agricultural system is to recycle organic material and reduce reliance on inputs that are composed of nonrenewable resources. Which of the following is an example of a sustainable farming practice that relies on renewable resources?

A. applying pesticides to improve crop health
B. spreading compost to improve soil fertility
C. increasing irrigation to improve crop health
D. spreading synthetic fertilizer to improve soil fertility

Answer Key

Item Number	Correct Answer	TEKS expectation
1	C	9A, 9B, 9F
2	C	9J, 3B, 3C
3	B	9A, 9F
4	C	5A, 9E
5	B	5A, 5E, 9E
6	D	5D, 6B
7	B	6B
8	B	2J
9	A	6B
10	D	6B
11	D	2I, 6B
12	A	9A
13	A	9B, 9C, 9D
14	B	9B, 9C, 9D
15	B	9E, 9F
16	D	9K
17	D	9D
18	A	9D
19	B	4H, 9H
20	C	9L
21	A	9A, 9K
22	A	9J
23	C	5C, 5F
24	D	5C, 5F
25	B	5C, 5F