

2006  
National FFA Environmental & Natural Resources  
Career Development Event



ENR Exam  
ENR Exam Key  
GPS Sample Work Sheets  
Global Interview  
Team Activity

*\*Refer to Career Development Event Rules for accurate description of environmental and natural resources rules and descriptions. Rules and Format can be found at*

*<http://www.ffa.org/programs/cde/index.html#events>*

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2006

National FFA Organization

Environmental and Natural Resources

Career Development Event

Exam

## Environmental Questions

1. Exhaust from cars is considered what kind of pollution?
  - a. point
  - b. non-point
  - c. non-renewable
  - d. biospheric
  
2. Which of the following classes of land is most suitable for row crop production?
  - a. Class II land
  - b. Class V land
  - c. Class VII land
  - d. Class VIII land
  
3. What is the purpose of using impermeable clay in construction landfills?
  - a. impermeable clays do not settle as much as other clays
  - b. to prevent leaching household chemicals into groundwater
  - c. impermeable clays are more conducive to plant growth
  - d. impermeable clays are easier to find than other types of clays
  
4. What is a living organism in an ecosystem called?
  - a. abiotic factor
  - b. biotic factor
  - c. carbon factor
  - d. niche
  
5. An area that at least, periodically has water covering the ground. The plants and animals found in this area need an aquatic environment to survive.
  - a. Bog
  - b. Marsh
  - c. Swamp
  - d. Wetlands
  
6. The fungi which produces aflatoxin thrives in what kind of environmental conditions?
  - a. hot, dry, humid
  - b. cold, humid, moist
  - c. hot, humid, wet
  - d. cold, wet, humid
  
7. Pollutants that are not broken down by natural processes are...
  - a. biodegradable
  - b. non degradable
  - c. nonrenewable

- d. both (a) and (c)
8. Resources that can theoretically last forever are called \_\_\_\_\_ resources.
- biodegradable
  - non renewable
  - pollutant
  - renewable
9. Liquid water turns into gaseous water vapor in a process called...
- condensation
  - convection
  - evaporation
  - precipitation
10. Seventy-eight percent of Earth's atmosphere is made up of...
- carbon dioxide
  - hydrogen
  - nitrogen
  - oxygen
11. The layer at Earth's surface where life exists is called the...
- atmosphere
  - biosphere
  - geo sphere
  - hydrosphere
12. Excessive use of fertilizer that contains nitrogen and phosphorus...
- affects the carbon cycle
  - causes soil erosion
  - contributes to primary succession
  - may cause algal blooms in waterways
13. Which of the following is correctly arranged from the lowest trophic level to the highest trophic level?
- algae, deer, wolf, hawk
  - bacteria, frog, eagle, mushroom
  - grass, bass, minnow, snake
  - grass, mouse, snake, eagle
14. Wetlands are important to fisheries in the United States because
- many of the fish caught each year use wetlands for feeding and spawning.
  - wetlands are the easiest place to catch fish
  - wetlands are the breeding grounds for insects that are eaten by fish
  - wetlands provide the most desirable species of fishes

15. Any form of moisture that falls to the earth
- condensation
  - hydro escalation
  - precipitation
  - water
16. The term biodiversity refers to
- the variety of species on Earth
  - the extinction of dinosaurs
  - habitat destruction, invasive exotic species, and poaching
  - the fact that 40% of prescription drugs come from living things
17. A mass extinction is
- a rapid increase in biodiversity
  - the introduction of exotic species
  - the extinction of many species in a short period of time
  - a benefit to the environment
18. Which of the following processes is not a part of the water cycle?
- biomagnifications
  - condensation
  - evaporation
  - precipitation
19. Which of the following is not an example of point-source pollution?
- oil that is escaping from a damaged tanker
  - heavy metals that are leaching out of an underground mine
  - water runoff from residential lawns
  - untreated sewage that is accidentally released from a wastewater treatment plant
20. Thermal pollution has a harmful effect on aquatic environments because
- water has been circulated around power plant generators
  - it increases the number of disease-causing organisms in aquatic environment
  - it reduces the amount of dissolved oxygen in aquatic environments
  - it decreases the nutrient levels in aquatic environments
21. Which of the following pollutants causes artificial eutrophication?
- heavy metals from unlined landfills
  - inorganic plant nutrients from waste waters and fertilizer runoff
  - toxic chemicals from factories

- d. radioactive waste from nuclear power plants
22. The three components of the food chain are...
- a. earth, wind and fire
  - b. producers, consumers and decomposers
  - c. soil, plants and animals
  - d. dogs, cats and horses
23. A food chain...
- a. consists of animals feeding on each other
  - b. consists of only producers
  - c. is the sequence of organisms through which food (energy) passes
  - d. consists only of nonliving organisms by which living organisms feed.
24. Where is the majority of the earth's water?
- a. water vapor in the atmosphere
  - b. in plants and animals
  - c. precipitating at this moment
  - d. in the oceans and polar ice caps
25. Which is not an adaptation of animals?
- a. running habit
  - b. burrowing habit
  - c. solitary habit
  - d. social habits
26. Which are not good crop and management techniques?
- a. reducing use of chemical fertilizers if profitable
  - b. no-till
  - c. propagation of the same crop year to year
  - d. integrated pest management
27. Which item is not classified as a hazardous waste?
- a. water soluble
  - b. reactive
  - c. ignitable
  - d. corrosive
28. Air pollutants which adhere to precipitation and falls to the earth is called
- 
- a. leachate
  - b. acid drainage

- c. leaching
- d. acid rain

29. Which method of disposal is the proper way to dispose of hazardous household chemicals?
- a. flush chemicals down the toilet
  - b. pour chemicals down the drain
  - c. put chemicals in landfills
  - d. dispose of chemicals at community hazardous waste retrieval events
30. Acid rain is most harmful to which sphere of the hydrologic cycle?
- a. atmosphere
  - b. hydrosphere
  - c. biosphere
  - d. lithosphere
31. Which of the following items provides a direct pathway for contaminants to reach the water table?
- a. old wells
  - b. sanitary landfills
  - c. transportation corridors
  - d. underground storage tanks
32. It is recommended not to apply animal waste on land which possesses slopes of \_\_\_\_\_% percent or greater.
- a. 1
  - b. 5
  - c. 10
  - d. 15
33. Plants that undergo the process of nitrogen-fixing by absorbing nitrogen gas and converting it to nitrates are called \_\_\_\_\_.
- a. legumes
  - b. cool season grasses
  - c. warm season grasses
  - d. nitrators
34. Certain chemical substances are used and reused as they cycle between living and nonliving organisms in the environment. The three most important of these are?
- a. water, carbon and nitrogen
  - b. treflan, roundup and sencore
  - c. magnesium, iron and zinc
  - d. hydrogen, oxygen and helium
35. Which is not an abiotic factor influencing where prairies are found?

- a. abundance of grass and grass-like plants
  - b. precipitation
  - c. wind
  - d. rates of evaporation
36. What hazardous pollutant is most toxic to human lungs?
- a. asbestos
  - b. mercury
  - c. arsenic
  - d. benzene
37. Of these air pollutants, which is the most hazardous?
- a. blowing dust from wind erosion
  - b. odors from animal waste
  - c. pesticide aerosol from crop spraying
  - d. diesel fumes from a tractor in an open field
38. Which pollutant reduces the rate of growth of plants?
- a. ozone
  - b. carbon monoxide
  - c. sulfur dioxide
  - d. nitrogen dioxide
39. A food web is different from a food chain because...
- a. animals eat plants in a food web and they do not in a food chain
  - b. a food web is a combination of several food chains
  - c. decomposers eat animals in a food chain but not in a food web
  - d. a food web and a food chain are the same thing
40. An ecosystem is...
- a. the total dry weight of all plant and animal organisms in an ecosystem.
  - b. an organism which feeds primarily on plant matter
  - c. a community of living and nonliving organisms interacting with one another and the environment
  - d. anything which is living or nonliving
41. Omnivores are
- a. flesh eating animal' organisms that fee in non-herbivore trophic guilds
  - b. organisms which feed primarily on plant matter
  - c. consumers of both plants and animals; an organism that feeds in both carnivore and herbivore trophic guilds
  - d. animals that feed primarily on bananas and coconuts
42. Humans are a part of ecosystems because they...
- a. work in the environment
  - b. are associated with all parts and functions of the environment



- c. consume plants and animals, and can damage or improve an ecosystem
  - d. feel it is a citizen's duty
43. How are ecosystems and biotic communities different?
- a. Ecosystems and communities are the same thing.
  - b. a community is a system of only living organisms, but an ecosystem is a system of living and nonliving factors
  - c. they are both subject to alterations by humans
  - d. a community is a system of living and nonliving factors, but an ecosystem is a system of only living organisms.
44. Which of the following is usually the most limiting factor to life in an ecosystem?
- a. clean air
  - b. water
  - c. soil
  - d. solar energy
45. What is ecology?
- a. a complex network of living and nonliving organisms
  - b. the branch of science dealing with the complex relationships of nonliving organisms
  - c. the branch of science dealing with the complex relationships among living things and their environment
  - d. the branch of science dealing with only natural resources
46. Which one of the following is not a natural disaster?
- a. stock market crashes
  - b. seismic sea waves (tidal waves)
  - c. earthquakes
  - d. droughts
47. Renewable resources are...
- a. any material that provides energy
  - b. irreplaceable
  - c. replaceable
  - d. not natural resources.
48. Which of the following is a renewable natural resource?
- a. mineral
  - b. fossil fuel
  - c. copper
  - d. fish and wildlife
49. \_\_\_\_\_ gases and depletion of the \_\_\_\_\_ are what support the theory of global warming.

- a. vehicle; ozone
- b. neon; lithosphere
- c. greenhouse; ozone
- d. animal; infrared

50. The process of bacteria changing dead organisms into ammonia, then to nitrites, finally to nitrates useful to plants is called \_\_\_\_\_.

- a. photosynthesis
- b. electrolysis
- c. nitrification
- d. ammonification

# 2006 Environmental and Natural Resources Exam Key

- |     |   |     |   |
|-----|---|-----|---|
| 1.  | B | 26. | C |
| 2.  | A | 27. | A |
| 3.  | B | 28. | D |
| 4.  | B | 29. | D |
| 5.  | D | 30. | C |
| 6.  | C | 31. | A |
| 7.  | B | 32. | C |
| 8.  | D | 33. | A |
| 9.  | C | 34. | A |
| 10. | C | 35. | A |
| 11. | B | 36. | A |
| 12. | D | 37. | C |
| 13. | D | 38. | A |
| 14. | A | 39. | B |
| 15. | C | 40. | C |
| 16. | A | 41. | C |
| 17. | C | 42. | C |
| 18. | A | 43. | B |
| 19. | C | 44. | B |
| 20. | C | 45. | C |
| 21. | B | 46. | A |
| 22. | B | 47. | C |
| 23. | C | 48. | D |
| 24. | D | 49. | C |
| 25. | D | 50. | C |

Complete sets for judging

Student sets: Find 3 IDs and 2 sets of coordinates

Set 1

Tree ID	Northing	Easting
<b>1007</b>	4475679	496990
<b>1018</b>	4475680	497033
<b>1024</b>	4475671	497048
1001	<b>4475676</b>	<b>496980</b>
1010	<b>4475673</b>	<b>497009</b>

Set 1

Tree ID	Northing	Easting
	4475679	496990
	4475680	497033
	4475671	497048
1001		
1010		

Set 2

Tree ID	Northing	Easting
<b>1010</b>	4475673	497009
<b>1031</b>	4475681	497067
<b>1036</b>	4475681	497077
1020	<b>4475670</b>	<b>497038</b>
1026	<b>4475680</b>	<b>497049</b>

Set 2

Tree ID	Northing	Easting
	4475673	497009
	4475681	497067
	4475681	497077
1020		
1026		

Set 3

Tree ID	Northing	Easting
<b>1003</b>	4475685	496980
<b>1013</b>	4475678	497019
<b>1026</b>	4475680	497049
1008	<b>4475684</b>	<b>497008</b>
1020	<b>4475670</b>	<b>497038</b>

Set 3

Tree ID	Northing	Easting
	4475685	496980
	4475678	497019
	4475680	497049
1008		
1020		

Set 4

Tree ID	Northing	Easting
<b>1024</b>	4475671	497048
<b>1029</b>	4475675	497058
<b>1038</b>	4475671	497082
1018	<b>4475680</b>	<b>497033</b>
1033	<b>4475672</b>	<b>497068</b>

Set 4

Tree ID	Northing	Easting
	4475671	497048
	4475675	497058
	4475671	497082
1018		
1033		

Set 5

Tree ID	Northing	Easting
<b>1001</b>	4475676	496980
<b>1018</b>	4475680	497033
<b>1033</b>	4475672	497068
1008	<b>4475684</b>	<b>497008</b>
1026	<b>4475680</b>	<b>497049</b>

Set 5

Tree ID	Northing	Easting
	4475676	496980
	4475680	497033
	4475672	497068
1008		
1026		

Set 6

Tree ID	Northing	Easting
<b>1013</b>	4475678	497019
<b>1024</b>	4475671	497048

Set 6

Tree ID	Northing	Easting
	4475678	497019
	4475671	497048

1031 4475681 497067  
1007 4475679 496990  
1038 4475671 497082

4475681 497067  
1007  
1038

Set 7  
Tree ID Northing Easting  
1010 4475673 497009  
1020 4475670 497038  
1036 4475681 497077  
1003 4475685 496980  
1029 4475675 497058

Set 7  
Tree ID Northing Easting  
4475673 497009  
4475670 497038  
4475681 497077  
1003  
1029

Set 8  
Tree ID Northing Easting  
1003 4475685 496980  
1008 4475684 497008  
1018 4475680 497033  
1024 4475671 497048  
1031 4475681 497067

Set 8  
Tree ID Northing Easting  
4475685 496980  
4475684 497008  
4475680 497033  
1024  
1031

Set 9  
Tree ID Northing Easting  
1008 4475684 497008  
1024 4475671 497048  
1031 4475681 497067  
1013 4475678 497019  
1036 4475681 497077

Set 9  
Tree ID Northing Easting  
4475684 497008  
4475671 497048  
4475681 497067  
1013  
1036

Set 10  
Tree ID Northing Easting  
1013 4475678 497019  
1026 4475680 497049  
1038 4475671 497082  
1001 4475676 496980  
1033 4475672 497068

Set 10  
Tree ID Northing Easting  
4475678 497019  
4475680 497049  
4475671 497082  
1001  
1033

Complete sets for judging

Student sets: Find 2 IDs and 3 sets of coordinates

Set 1

Tree ID	Northing	Easting
<b>1001</b>	4475676	496980
<b>1010</b>	4475673	497009
1007	<b>4475679</b>	<b>496990</b>
1018	<b>4475680</b>	<b>497033</b>
1024	<b>4475671</b>	<b>497048</b>

Set 1

Tree ID	Northing	Easting
	4475676	496980
	4475673	497009
1007		
1018		
1024		

Set 2

Tree ID	Northing	Easting
<b>1020</b>	4475670	497038
<b>1026</b>	4475680	497049
1010	<b>4475673</b>	<b>497009</b>
1031	<b>4475681</b>	<b>497067</b>
1036	<b>4475681</b>	<b>497077</b>

Set 2

Tree ID	Northing	Easting
	4475670	497038
	4475680	497049
1010		
1031		
1036		

Set 3

Tree ID	Northing	Easting
<b>1008</b>	4475684	497008
<b>1020</b>	4475670	497038
1003	<b>4475685</b>	<b>496980</b>
1013	<b>4475678</b>	<b>497019</b>
1026	<b>4475680</b>	<b>497049</b>

Set 3

Tree ID	Northing	Easting
	4475684	497008
	4475670	497038
1003		
1013		
1026		

Set 4

Tree ID	Northing	Easting
<b>1018</b>	4475680	497033
<b>1033</b>	4475672	497068
1024	<b>4475671</b>	<b>497048</b>
1029	<b>4475675</b>	<b>497058</b>
1038	<b>4475671</b>	<b>497082</b>

Set 4

Tree ID	Northing	Easting
	4475680	497033
	4475672	497068
1024		
1029		
1038		

Set 5

Tree ID	Northing	Easting
<b>1008</b>	4475684	497008
<b>1026</b>	4475680	497049
1001	<b>4475676</b>	<b>496980</b>
1018	<b>4475680</b>	<b>497033</b>
1033	<b>4475672</b>	<b>497068</b>

Set 5

Tree ID	Northing	Easting
	4475684	497008
	4475680	497049
1001		
1018		
1033		

Set 6

Tree ID	Northing	Easting
<b>1007</b>	4475679	496990
<b>1038</b>	4475671	497082

Set 6

Tree ID	Northing	Easting
	4475679	496990
	4475671	497082

1013 **4475678 497019**  
1024 **4475671 497048**  
1031 **4475681 497067**

1013  
1024  
1031

Set 7  
Tree ID Northing Easting  
1003 4475685 496980  
1029 4475675 497058  
1010 **4475673 497009**  
1020 **4475670 497038**  
1036 **4475681 497077**

Set 7  
Tree ID Northing Easting  
4475685 496980  
4475675 497058  
1010  
1020  
1036

Set 8  
Tree ID Northing Easting  
1024 4475671 497048  
1031 4475681 497067  
1003 **4475685 496980**  
1008 **4475684 497008**  
1018 **4475680 497033**

Set 8  
Tree ID Northing Easting  
4475671 497048  
4475681 497067  
1003  
1008  
1018

Set 9  
Tree ID Northing Easting  
1013 4475678 497019  
1036 4475681 497077  
1008 **4475684 497008**  
1024 **4475671 497048**  
1031 **4475681 497067**

Set 9  
Tree ID Northing Easting  
4475678 497019  
4475681 497077  
1008  
1024  
1031

Set 10  
Tree ID Northing Easting  
1001 4475676 496980  
1033 4475672 497068  
1013 **4475678 497019**  
1026 **4475680 497049**  
1038 **4475671 497082**

Set 10  
Tree ID Northing Easting  
4475676 496980  
4475672 497068  
1013  
1026  
1038

## 2006 National FFA Environmental and Natural Resources Event

### Global Issues

Read the following and prepare your presentation to address the issues outlined in the statement below.

The weather plays an important role impacting our daily lives and environment. Many times the global climate produces extreme weather patterns that may spawn tornadoes, floods, droughts, hurricanes and ....

How should we prepare of such unforeseen events?



## 2006 National FFA Environmental and Natural Resources Event

### Team Activity

Read the following and prepare your presentation to address the issues outlined in the statement below.

The world economy is dependent on fossil fuels. With this non-renewable resource, unsettled events in countries that have high oil reserves and more demand for fuel sources by consumers has created a strain on global supply of crude oil. We as a global society have to ensure a continued supply of fuel and energy while maintaining environmentally sound and safe practices.

You as a team need to prepare an eight minute presentation to the Alternative Energy Committee for the United States, on the possibilities of alternative fuels.