1: Why do pig farmers have to feed their pigs “junk-food”?

 the cost to buy crops have gone so high that it's cheaper to feed pigs junk food.

2: Explain how agro ecosystems halt ecological succession.

 by having crops grow in early-successional states meaning they grow fast and spread widely and rapidly.

3: What is the problem with growing “monocultures”?
it makes crops vulnerable to attack by a single disease or change in environmental conditions.

4: Why does growing plants in neat rows and fields make it easier for pests?
because make it easier for pests because crop plants have no place to hide if they are placed in neat rows and fields.

5: How does plowing fields over and over damage the soils? Explain.
 Erosion damages physical structure, leading to a decline in organic matter and loss of chemical
elements.

6: What are the other 2 ways that agrocultures are harmful to ecosystems?
It contains gmo, Soils can be made unsustainable from plowing.

7: How much of the top soil in the U.S. has been lost since European settlement?
One third of the top soil in the U.S

8: What percentage of the world’s land area is used for agriculture?
38% of world's land is used for agriculture

9: What is the difference between undernourishment and malnourishment?
Undernourishment is when there aren’t insufficient calories in food so the person has no energy to work. Malnourishment is lack of a specific chemical such as proteins or vitamins.

10: Why does providing food aid to countries in need actually work against increased
availability of locally grown food?
The free food undercuts local farmers and they cannot go on with it.

11: Most of the world’s food is produced by only *\_\_\_*14 \_ species. List them below in order of importance:
Wheat, rice, maize, potatoes, sweet potatoes, manioc, sugarcane, sugar beet, common beans, soybeans, barley, sorghum, coconuts and bananas.

12: What is a forage crop?
is a food that is grown for domestic animals.

 13: Define the following:

Rangeland: provides food for grazing and browsing animals without plowing and planting

 Pasture: plowed, planted, and harvested to provide forage for animals

14: What impact does the number of livestock around the world have on rangeland and pasturelands? If there are too many livestock, they can greatly negatively impact the vegetation.

15: Why are feedlots considered to be a big source of local pollution?

They hold all the waste that is washed down on a rainy day.

 16: What is a benefit of farming animals rather than crops? Farming animals on not highly valuable soil can create money for the farmer rather than planting crops. Soils

17: How does rainwater affect the soil horizon? Explain. Rainwater deposits different nutrients from the horizons, creating better ecosystem units.

 18: What is soil fertility? How it is determined? It is the capacity of a soil to supply nutrients necessary for plant growth.

19: Why are soils in humid and tropical areas considered to be poor? What happens to them after deforestation? Their nutrients are washed away from the rain fall. It most likely they will not be reforested as the nutrients dry out.

20: What is the problem with soils in semi-arid regions? The soil shrinks and dries out in the regions, creating cracks and swells.

 21: Why are coarse-grained soils more susceptible to erosion that soils that contain more clay? The larger grains allow water to move more easily allowing erosion.

 22: Soil Horizons: Define each of the soil horizons

Horizon O: organic materials, usually brown/black

 Horizon A: Zone of leaching, composed of mineral and organic material, light black to brown.

 Horizon E: Zone of leaching, composed of light-colored materials from leachting of clay, calcium, magnesium, and iron to lower horizons.

Horizon B: enriched in clay, iron oxides, silica, carbonate, or other material leached from above horizons.

Horizon C: Zone of accumulation, partially altered parent material; rock is shown; material could be alluvial in nature. Horizon maybe stained with red with iron oxides

Horizon R: Unweather parent material

23: What is the difference between organic and inorganic (artificial) fertilizers?
Organic’s are made naturally while artificial are made in industry.

24: Define the following:
Macronutrient: Chemical element required by all living things in large amounts
Micronutrient: chemical element required in small amounts by all life forms or in moderate to small amounts for some forms of life.
Limiting Factor: A factor that is limiting and if that factor isn't improved, nothing else will make a difference.

25: In the U.S, how much of the potential harvest is lost to pests?
1/3 of potential harvest is lost to pests.

26: What is the definition of a weed?
A plant that is not wanted

27: What are the differences between inorganic and organic pesticides?
Inorganic pesticides are pesticides in forms of inorganic chemicals. Organic pesticides are made from organic
compounds.

28: What are some of the reasons why pesticides are considered to be ineffective?
Pests produce resistance to them.

29: Define Integrated Pest Management (IPM) AND explain HOW it works:
IPM is the idea that the goal can be control rather than complete elimination of a pest. It uses a combination of methods, including biological control, certain chemical pesticides and some methods of planting crops.

30: What is the use of biological control and give an example:
using a specie that is the enemy of the other for instance BT kills Caterpillars
31: What was the “green revolution”?
Are crops with better resistance to diseases and have the ability to grow in poor conditions.

32: What are the 3 practices of genetic engineering?
1. Faster and more efficient ways to develop new hybrids.
 2. Introduction of the terminator gene.
 3. Transfer of genetic properties from widely divergent kinds of life.

33: What are the PROS and CONS of developing hybrid crops?
PRO- really hybrid, requires less fertilizer
CON- super hybrid

 34: What is the terminator gene and what does it do?
A terminator gene is a gene that terminates. It makes seeds from a crop sterile. It prevents GMOs
from spreading.

35: What are the political and social concern with companies using seeds with terminator genes?
Terminator gene will allow U.S and corporations to control the world food supply.

36: How are GMO (Genetically Modified Organisms) helpful?
GMOs can give food new nutrients and can give a high crop yield than normal.

37: How can GMO’s be harmful?
they give animals and insects diseases

38: What is aquaculture and how can it be helpful?.

It is a farming of marine organisms It can provide food of high nutritional quality.

39: What is mariculture?
Mari culture is farming of ocean fish

40: How can aquaculture and mariculture harmful to the environment?
Fishponds and marine fish release wastes
polluting local environments. It can damage biodiversity.

1: How might dietary changes in developed countries affect water availability?

If a countries diet is mostly crops, then they consume a lot of water because it requires a lot to grow crops.

2: How might global warming affect estimates of the amount of water needed to grow crops in the 21st
century?
most of the water needed will end up evaporating or it will be modified for the plant not use.
3: Withdrawing water from aquifers faster than the
replacement rate is sometimes referred to as “mining water”. Why do you
think this term is used?
The machines that are used to withdraw the water
are used in mining for valuable minerals.

4: Many countries in warm areas of the world are unable to raise enough food,
such as wheat, to supply their populations. Consequently, they import wheat
and other grains. How is this equivalent to importing water?
The wheat and other grains had to grow with the help of sunlight, air and water They're all important.

5: Malthusians are those who believe that sooner or later,
unless population growth is checked, there will not be enough food for the
world’s people. Anti-Malthusians believe that technology will save the
human race from a Malthusian fate. Analyze the issue of water supply
for agriculture from both points of view.
\*Malthusian-As populations grow, there is a higher demand for food. This food
requires water to grow. The more food needed, the more water needed to feed the
population.
\*Anti- more people require mean more food and water

Interactive Soil Pyramid- Understand How to Calculate the Soil Composition Type go to: http://courses.soil.ncsu.edu/resources/physics/texture/soiltexture.swf Understand and Using Soil Pyramids go to: http://soils.usda.gov/technical/aids/investigations/texture/ Directions: Using the Soil Pyramid Program- Identify the Type of Soil with the Following

Sand: 30
Clay: 30
Silt: 40
Answer: Clay Loam

Sand: 45
Clay: 10
Silt: 45
Answer: Loam

**Directions: Determine the Type of Soils that are Characteristics of Each Specific of These
Terrestrial Biomes and List Why?**
Tundra: No true soils, cold layer
Taiga (Boreal Forest): acid solution produced under soil

Temperate Broadleaf Deciduous: Brown forest soil, Hummus content of A and Horizon gives it a brown color.
Mediterranean Scrub: Eroded soils because they are maintained by fires and goats.
Temperate Grassland: Dark brown, mild leaching, high organic content, and concentration of calcium carbonate in the B horizon .
\*Scrubland: Light gray soil
\*Tropical Rainforest: , Severely leached, Rapid bacterial decay prevents hummus from building up.
Tropical Savannah: laterization is the dominant soil-forming process and low fertility oxisols can be expected.

**Directions: Define and describe each of the alternative methods to traditional soil tillage**
Windbreaks: Farmers plant trees along borders to cut down on wind erosion.
Cover Crops: Planting crops that grow during the most erosive fall and spring months. Winter crops act as a cover to protect from eroding soil.
Grassed Waterways: Farmers plant grassy strips to keep soil from running away with water.
Contour Cultivation: Farmers plant and cultivate their crops to follow contour of a field. It produces furrows that are at an angle to the field. Irregular surface makes it more difficult for water to erode soil.
Strip Cropping: Alternate a field with strips of different crops. A type of contour farming
Forages: Forage crops included in a rotation to cut down on erosion.
Conservation Tillage: Leaving stalks and leaves of harvested crops on their fields to protect soil from wind
and rain.
No-Till:  Farmers leave all of the last crop's residue while planting a new crop
Ridge Tillage: Forming soil into ridges and planting on ridges. Less likely to erode because the plant and soil material is not broken loose by machinery,