Plant Agriculture

1. What type of ecosystem was present in the western Great Plains?
2. Why did 19th century farmers have so much difficulty farming here?
3. What was the “Rain Follows the Plow” theory?
4. What are the three main **staple crops** for humans today?
5. Explain why the world’s food staples are plants, using the 10% rule.
6. How do the roots of wild prairie plants compare to domesticated species?

**Soil**

1. Define soil –
2. Compare the two ways that soil can be formed:
	1. Mechanical erosion –
	2. Chemical erosion –
3. Describe the composition of each soil layer:
	1. O Horizon-
	2. A Horizon –
	3. B Horizon –
	4. Parent Material –



1. Label the soil layer diagram to the right.
2. Define each of these types of water erosion:
	1. Splash erosion –
	2. Sheet erosion –
	3. Rill erosion –
	4. Gully erosion –
3. How does **contour plowing** reduce soil erosion by water?
4. What are **row crops**?
5. How does **strip cropping** work differently, and what kind of erosion does it prevent?
6. Describe **terracing**. What kind of erosion does it prevent?
7. What are **windbreaks**?

**Human Nutritional Needs**

1. Give the caloric content, importance to the body, and example of each of the different macronutrients.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Caloric Value (kcal/g)** | **Importance to Body** | **Example Source** |
| **Carbohydrates** |  |  |  |
| **Lipids** |  |  |  |
| **Proteins** |  |  |  |

1. What is undernutrition?
	1. Undernourishment over an entire population is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. What are micronutrients? What is an imbalance or deficiency of micronutrients called?
3. Describe the cause and symptoms of Kwashiorkor.
4. Describe the cause and symptoms of anemia.
5. What is a goiter, and what form of malnourishment causes it?
6. How does the typical Japanese lunch differ from that of Russia?
7. Summarize the predictions of the Population Bomb. Did these come true?

**Green Revolution**

1. Describe the three major changes in farming that occurred as a result of the Green Revolution.

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1. Define **irrigation –**
2. Describe and give the efficiency of each of these forms of irrigation:
	1. Furrow Irrigation –
	2. Drip Irrigation –
	3. Center-Pivot Irrigation –
3. What three nutrients are added as fertilizer to improve plant growth?
4. Where does **inorganic fertilizer** come from?
5. Where do the two types of **organic fertilizer** come from?
	1. Animal manure –
	2. Compost –
6. Explain how **crop rotation** can help to decrease needed fertilizer.
7. How has energy use changed since the Green Revolution?
8. What is the purpose of **pesticides**?
	1. What do insecticides target?
9. What is the difference between **first** and **second generation pesticides**? Give an example of each.
10. What is **pesticide residue**? Explain what it means to **bioaccumulate**.
	1. What specific effect did the bioaccumulation of DDT have on predatory birds?
11. List the top three fruits or vegetables most likely to have pesticide residue.
12. List the top three fruits or vegetables least likely to have pesticide residue.
13. Describe the problem of **pesticide resistance**.
14. Give an example of how natural predators can be used as an alternative to pesticides.
15. What is **Integrated Pest Management**? Which pest control technique is the preferred option in this system?
16. How is **organic agriculture** different than conventional agriculture?
17. Explain how plants can be grown through **hydroponics**.

**Genetically Modified Organisms**

1. What is a Genetically Modified Organism?
2. Describe the two most commonly used modifications to corn:
	1. BT Corn –
	2. Roundup-Ready Corn –