

**Evaluation****Directions:** Match the definition on the left with the term on the right.

- |   |   |                                   |
|---|---|-----------------------------------|
| b | 1. Smallest portion of an element that can take part in a chemical reaction             | a. Lime                           |
| c | 2. A measure of the soil's ability to hold nutrients that are cations in the soil       | b. Atom                           |
| i | 3. Negatively charged solid particle composed of clay or organic matter                 | c. Cation exchange capacity (CEC) |
| e | 4. Measure of the acidity or alkalinity of a soil                                       | d. Alkaline soil                  |
| g | 5. A soil that contains more hydrogen ions than hydroxyl ions; soil pH is less than 7.0 | e. Soil pH                        |
| d | 6. A soil that contains more hydroxyl ions than hydrogen ions; pH is greater than 7.0   | f. Cation                         |
| h | 7. An ion with a negative or minus charge   | g. Acid soil                      |
| f | 8. An ion with a positive charge  | h. Anion                          |
| a | 9. Materials used to neutralize acidity   | i. Micelle                        |

**Not sure if the following can be done in Quizmaker.**

**Directions:** Use the following soil test data and calculate the cation exchange capacity (CEC) milliequivalent weights of potassium, magnesium, and calcium: K - 780 lbs, Mg - 240 lbs, Ca - 400 lbs.

Site No. 1	OM (%)	P <sub>2</sub> O <sub>5</sub> (lbs/A)	K (lbs/A)	Mg (lbs/A)	Ca (lbs/A)	NA (meq)	pH
Soil test results	2.5	180	390	360	2,400	4.0	5.2

10. K = \_\_\_\_\_0.5\_\_\_\_\_

12. Ca = \_\_\_\_\_6.0\_\_\_\_\_

11. Mg = \_\_\_\_\_1.5\_\_\_\_\_

13. NA = \_\_\_\_\_4.0\_\_\_\_\_

14. Total CEC = \_\_\_\_\_12\_\_\_\_\_

**Directions:** Use the following soil test data and calculate the amount of exchangeable nutrients that the soil should contain. Optimal amount of nutrient per acre: K = 20, Mg = 24, Ca = 300.

Site No. 2	OM (%)	P <sub>2</sub> O <sub>5</sub> (lbs/A)	K (lbs/A)	Mg (lbs/A)	Ca (lbs/A)	NA (meq)	pH
Soil test results	2.5	180	390	360	2,400	4.0	5.2

Amounts of exchangeable nutrients that the soil should contain:

15. K = \_\_\_\_\_ 240 \_\_\_\_\_

16. Mg = \_\_\_\_\_ 288 \_\_\_\_\_

17. Ca = \_\_\_\_\_ 3600 \_\_\_\_\_

**Rest are essay questions.**

**Directions:** Compare the results of the soil test and make recommendations for the nutrients needed.

18. Amount of K needed? \_\_\_\_\_

19. Amount of Mg needed? \_\_\_\_\_

20. What is the recommendation for Ca? \_\_\_\_\_