E4055
Soil Classification

Quiz

Name:__________________
Date:__________________
TRUE/FALSE

1. An average cave-in can drop five yards or 13,500 pounds of dirt.
   True   False

2. A competent person should be knowledgeable of safety standards, capable of identifying hazards in the surroundings and working conditions that are dangerous to employees.
   True   False

3. Soil classification determines the appropriate trench protection measures to choose by consulting the sloping and shoring tables in the ASTM standards.
   True   False

4. The less clay in the soil makeup, the better the trench wall will hold up.
   True   False

5. Solid rock is the least stable and Type C soil is the most stable.
   True   False

6. The competent person must classify the soil by using at lease one visual and one manual test.
   True   False

7. The classification of soil must be performed by the competent person prior to anyone entering the excavation.
   True   False

8. A manual test is assessing the soil with your hands or an instrument designed to measure soil strength.
   True   False

9. A dry strength test is also known as the ribbon test.
   True   False

10. The “thumb penetration test” must be performed on undisturbed moist soil samples the size of a basketball.
11. A competent person is required to conduct inspections ________.
   a. daily and before the start of each work shift
   b. after every rain storm or weather event
   c. when there is evidence of tension cracking
   d. all of the above

12. When taking a soil sample, the competent person should look for ________.
   a. type of soil
   b. size of the individual grains
   c. soil that breaks up easily
   d. all of the above

13. Soil particles may be held together with a natural chemical agent such as ________.
   a. hydrogen sulfide
   b. chlorine
   c. calcium carbonate
   d. benzene

14. Type B soil is identified as ________.
   a. the most unstable
   b. cohesive and non-cohesive soils
   c. made up of clay, silty clay or sandy clay
   d. all of the above

15. The different types of soil tests are ________.
   a. manual
   b. plasticity
   c. strength
   d. all of the above

16. When performing a manual test, take a palm-sized sample of moist soil and mold it into a ball and then roll it into threads about _____ inches in diameter.
   a. 1/4
   b. 1/2
   c. 3/8
   d. 1/8
17. OSHA classifies soils into four categories: Type A, Type B, Type C and ________.
   a. stable rock
   b. clay
   c. cohesive soil
   d. solid rock

18. Type A soil is generally made up of ________.
   a. includes cohesive and non-cohesive soils
   b. soil that is most unstable
   c. clay, silty clay and sandy clay
   d. all of the above

19. The “olive jar test” is used to ________.
   a. differentiate between cohesive material with fissures
   b. estimate the amount of clay, silt and/or sand in a soil sample
   c. to measure soil strength
   d. none of the above

20. A__________ is used to measure the unconfined compressive strength of the soil.
   a. pedometer
   b. I-pod
   c. pocket penetrometer
   d. odometer
SOIL CLASSIFICATION

ANSWERS

TRUE/FALSE

1. According to NIOSH, trench cave-ins are predictable and preventable.
   True False

3. A person buried under only a couple of feet of soil can experience enough pressure to the chest area causing suffocation.
   True False

3. Training and understanding the trenching and shoring regulations are keys to working safely in trenches.
   True False

4. A trench refers to a narrow excavation made below the surface of the ground where the width is greater than the depth.
   True False

5. The key component of the 1990 OSHA new standard requires a competent person, preferably a supervisor, be placed in charge of excavation and safety on the job.
   True False

6. Granular soil can be molded when moist.
   True False

7. A competent person does not have to perform visual and manual soils testing.
   True False

8. It is not necessary for the competent person to conduct an inspection after every rain storm or other weather event.
   True False

9. It is not permissible to use backhoes, breakers, digging bars or other metal tools to locate or work around utilities.
10. The competent person is responsible to ensure that ladders, ramps and/or stairways are provided for all excavations 10 feet or more in depth.

11. A competent person must classify the soil by using ________ test.
   a. a computerized
   b. a taste
   c. **one visual and one manual**
   d. strength

12. When taking a soil sample, you should look for ________.
   a. type of soil
   b. size of the individual grains
   c. soil that breaks up easily
   d. **all of the above**

13. Soil is heavy. A cubic foot generally weighs as much as _____ pounds or more.
   a. 50
   b. 75
   c. 80
   d. **100**

14. Trench cave-in fatalities are caused by __________.
   a. absence of trench protection
   b. unaware of hazards
   c. poor judgment
   d. **all of the above**

15. If a trench is more than _____ feet in depth, there must be a protective system in place while workers are in the excavation.
   a. 3
   b. 4
   c. **5**
   d. 6

16. Secure ladders must be placed every ____ feet of lateral travel.
17. OSHA classifies soils into four categories: Type A, Type B, Type C and ________.
   a. stable rock
   b. clay
   c. cohesive soil
   d. **solid rock**

18. Type A soil is generally made up of ________.
   a. includes cohesive and non-cohesive soils
   b. soil that is most unstable
   c. **clay, silty clay and sandy clay**
   d. all of the above

19. Manual tests help to better identify the soil type and ________.
   a. cohesiveness
   b. strength
   c. weakness
   d. stability

20. A_________ is used to measure the strength of the soil.
   a. pedometer
   b. i-pod
   c. **pocket penetrometer**
   d. odometer