



**Department of Civil Engineering**

**CE8491 & Soil Mechanics**

**Unit I - MCQ Bank**

1. A soil mass in a three-phase system consists of \_\_\_\_\_
- a) solids, water and air
  - b) sand, gravel and air
  - c) solids and water only
  - d) solids and air only

**Answer: a**

2. When the soil is fully saturated, then there are no air voids present in it.
- a) True
  - b) False

**Answer: a**

3. The volume of voids  $V_v$  is equal to the sum of \_\_\_\_\_
- a) the volume of air and volume of solids
  - b) the volume of air and volume of water
  - c) the volume of water and volume of solids

**Answer: a**

4. The phase diagram is also known as \_\_\_\_\_
- a) soil grain diagram
  - b) block diagram
  - c) constituents diagram

**Answer: b**

5. In the phase diagram, volumes are represented on the \_\_\_\_\_
- a) left side
  - b) right side

**Answer: a**

6. The volume of solids is represented as \_\_\_\_\_ in the phase diagram.

- a)  $V_v$
- b)  $V_w$
- c)  $V_s$
- d)  $V_a$

**Answer: c**

7. For a fully saturated soil sample, the volume of voids is equal to \_\_\_\_\_

- a) volume of air
- b) volume of water
- c) the volume of air and volume of water
- d) the volume of water and volume of solids

**Answer: b**

8. Sieve analysis is meant for \_\_\_\_\_

- a) coarse-grained soils
- b) fine-grained soils
- c) coarse-grained gravel
- d) silt

**Answer: a**

9. The weight of total voids is equal to the weight of Water.

- a) True
- b) False

**Answer: a**

10. The grooving tool which is used for finding liquid limit is \_\_\_\_\_

- a) ASTM tools
- b) Grooving tools
- c) All of the mentioned

**Answer: a**

11. The plastic index is calculated from the relation \_\_\_\_\_

- a)  $IP = WP - WL$
- b)  $IP = WL - WP$
- c)  $IP = IL - IS$

**Answer: b**

12. In Indian Standard (IS : 460-11962) the sieve sizes are given by \_\_\_\_\_

- a) number of openings
- b) number of openings per inch
- c) size of aperture in mm
- d) size of aperture in cm

**Answer: c**

13. The percentage of soil retained on each sieve is calculated on the basis of \_\_\_\_\_

- a) total mass
- b) total weight
- c) volume of sample
- d) density of soil

**Answer: a**

14. A soil sample may be well graded if \_\_\_\_\_

- a) if it has most number of particles of same size
- b) excess of certain particles
- c) Good representation of particles of all size

**Answer: c**

15. For coarse grained soil, the particle size  $D_{10}$  is sometimes called as \_\_\_\_\_

- a) Effective size and effective diameter
- b) Uniform diameter
- c) All of the mentioned

**Answer: c**

16. The shape of particle size curve, which is represented by the coefficient of curvature ( $C_c$ ) is given by \_\_\_\_\_

- a)  $C_c = (D_{30})^2/D_{10} \times D_{40}$
- b)  $C_c = (D_{40})^2/D_{10} \times D_{30}$
- c)  $C_c = (D_{30})^2/D_{10} \times D_{60}$
- d)  $C_c = D_{60}/D_{10}$

**Answer: c**

17. The curve situated at the right side of the particle size distribution curve is \_\_\_\_\_

- a) Coarse-grained soil
- b) Fine-grained soil
- c) coarse-grained soil
- d) None of the mentioned

**Answer: a**

18. A curve with a flat portion, in particle size distribution curve represent \_\_\_\_\_

- a) Intermediate size particle are missing
- b) Intermediate size particles are present
- c) Smaller size particle are present

**Answer: a**

19. The shape of the particle size curve is represented by \_\_\_\_\_

- a) Effective size
- b) Effective diameter
- c) Co-efficient of curvature

**Answer: c**

20. For engineering purpose, soil can be classified in terms of \_\_\_\_\_

- a) Particle size
- b) Textural
- c) All of the mentioned

**Answer: c**

21. Systems which are used for classification of soil based on particle size are \_\_\_\_\_

- a) PRA system of united states
- b) Indian standard classification system
- c) International soil classification
- d) All of the mentioned

**Answer: d**

22. Soil occurring in nature, is composed of \_\_\_\_\_

- a) Sand
- b) Decomposed substance
- c) All of the mentioned
- d) None of the mentioned

**Answer: a**

23. The purpose of soil classification is to \_\_\_\_\_

- a) To arrange various soils types in to groups
- b) To use it for various purpose
- c) For finding its properties
- d) For investigating the soil

**Answer: a**

24. Particle size classification is best suited for \_\_\_\_\_

- a) Coarse grained soil
- b) Clay soil
- c) Dry soil

**Answer: b**

25. Particle size classification system does not signify \_\_\_\_\_

- a) Soil types
- b) Soil Particle size
- c) All of the mentioned

**Answer: a**