

UNIT – I :Introduction & Index Properties of Soils

1. Soil is a
- | | |
|------------------|---|
| a) Rock mass | b) Natural aggregate of mineral particles |
| c) Concrete mass | d) Organic waste |

Answer: b

2. Water content of soil is expressed as
- | | |
|---|-----------------------------|
| a) Ratio of water mass to dry soil mass | b) Ratio of solids to water |
| c) Ratio of voids to solids | d) Unit weight |

Answer: a

3. The specific gravity of most inorganic soils is approximately
- | | | | |
|--------|--------|---------|--------|
| a) 1.0 | b) 1.5 | c) 2.65 | d) 3.5 |
|--------|--------|---------|--------|

Answer: c

4. Void ratio is defined as
- | | | | |
|--------------|--------------|--------------|--------------|
| a) V_v/V_s | b) V_s/V_v | c) V_v/V_t | d) V_w/V_v |
|--------------|--------------|--------------|--------------|

Answer: a

5. Porosity is expressed as
- | | | | |
|--------------|--------------|--------------|--------------|
| a) V_v/V_s | b) V_v/V_t | c) V_s/V_t | d) V_w/V_t |
|--------------|--------------|--------------|--------------|

Answer: b

6. Degree of saturation is
- | | | | |
|--------------|--------------|--------------|--------------|
| a) V_v/V_s | b) V_w/V_v | c) V_w/V_t | d) V_s/V_v |
|--------------|--------------|--------------|--------------|

Answer: b

7. Core cutter method is used to determine
- | | |
|---------------------|-----------------------|
| a) Specific gravity | b) Permeability |
| c) Field density | d) Consistency limits |

Answer: c

8. Sand replacement method is suitable for
- | | |
|-------------------------|------------------|
| a) Soft clay | b) Fine sand |
| c) Coarse-grained soils | d) Organic soils |

Answer: c

9. Relative density is mainly used for
- | | | | |
|----------|----------|----------|---------|
| a) Clays | b) Silts | c) Sands | d) Peat |
|----------|----------|----------|---------|

Answer: c

10. Grain size distribution of coarse soils is determined by
- | | |
|-----------------------|--------------------|
| a) Triaxial test | b) Sieve analysis |
| c) Consolidation test | d) Compaction test |

Answer: b

11. Liquid limit is the boundary between
- | | |
|--------------------------------|----------------------------------|
| a) Solid and semi-solid states | b) Semi-solid and plastic states |
| c) Plastic and liquid states | d) Dry and wet states |

Answer: c

12. Plasticity Index is equal to
- | | | | |
|--------------|--------------|--------------|--------------|
| a) $LL + PL$ | b) $LL - PL$ | c) $PL - LL$ | d) $SL - PL$ |
|--------------|--------------|--------------|--------------|

Answer: b

13. Shrinkage limit is the water content below which

- a) Soil becomes liquid
- b) No further shrinkage occurs
- c) Soil becomes plastic
- d) Permeability increases

Answer: b

14. Casagrande apparatus is used to determine

- a) Plastic limit
- b) Shrinkage limit
- c) Liquid limit
- d) Specific gravity

Answer: c

15. IS classification system classifies soils based on

- a) Colour
- b) Density only
- c) Grain size and plasticity
- d) Water content only

Answer: c

16. Symbol “CL” represents

- a) Clay of low plasticity
- b) Clay of high plasticity
- c) Silt of low plasticity
- d) Gravel

Answer: a

17. Symbol “CH” represents

- a) High plastic clay
- b) Low plastic clay
- c) Sand
- d) Gravel

Answer: a

18. The three phases of soil are

- a) Air, Water, Solids
- b) Air, Sand, Clay
- c) Water, Gravel, Sand
- d) Solids, Cement, Water

Answer: a

19. Water content is generally determined by

- a) Oven drying method
- b) Sieve analysis
- c) Hydrometer test
- d) Direct shear test

Answer: a

20. Soil structure refers to

- a) Arrangement of particles
- b) Soil color
- c) Soil density only
- d) Soil moisture only

Answer: a