QUIZ QUESTIONS

UNIT – I : Introduction to Engineering Ground Modification

1. Ground improvement is mainly carried out to

a) Increase soil moisture content
b) Improve engineering properties of soil
c) Increase vegetation growth
d) Reduce construction cost only

Ans: b

2. Problematic soil is a soil that

a) Has high strength
b) Does not require treatment
c) Exhibits undesirable engineering behavior
d) Contains gravel

Ans: c

3. Black cotton soil is an example of

a) Collapsible soil
b) Expansive soil
c) Sandy soil
d) Gravelly soil

Ans: b

4. The major objective of ground improvement is

a) Increase settlement
b) Reduce bearing capacity
c) Improve load carrying capacity
d) Increase permeability only

Ans: c

5. Which of the following is a mechanical ground improvement method?

a) Grouting
b) Compaction
c) Electro-osmosis
d) Lime stabilization

Ans: b

6. Soil classification is primarily based on

a) Color only
b) Grain size and plasticity
c) Moisture content only
d) Density only

Ans: b

7. Standard Penetration Test (SPT) is an example of

a) Laboratory test
b) In-situ test
c) Chemical test
d) Thermal test

Ans: b

8. Atterberg limits are used to characterize

a) Sand
b) Gravel
c) Fine-grained soils
d) Rock

Ans: c

9. Which soil generally exhibits excessive settlement?

a) Dense sand
b) Soft clay
c) Hard rock
d) Gravel

Ans: b

10. Hydraulic modification mainly involves

a) Soil reinforcement
b) Water control and drainage
c) Heating
d) Freezing

Ans: b

11. Electro-kinetic stabilization is most suitable for

a) Gravel
b) Dense sand
c) Fine-grained soils
d) Rock masses

Ans: c

12. Thermal ground improvement includes

a) Heating and freezing
b) Compaction and grouting
c) Drainage and dewatering
d) Reinforcement and stabilization

Ans: a

13. The primary purpose of laboratory testing is to determine

a) Soil engineering properties
b) Weather conditions
c) Traffic volume
d) Water quality

Ans: a

14. Which of the following is a physico-chemical modification method?

a) Dynamic compaction
b) Lime stabilization
c) Electro-osmosis
d) Blasting

Ans: b

15. California Bearing Ratio (CBR) test is commonly used for

a) Soil classification
b) Pavement design
c) Permeability measurement
d) Consolidation analysis

Ans: b

16. Loose sandy soils are generally improved by

a) Vibro-compaction
b) Electro-osmosis
c) Lime treatment
d) Freezing

Ans: a

17. Consolidation test is performed to determine

a) Permeability only
b) Settlement characteristics
c) Specific gravity
d) Grain size distribution

Ans: b

18. Which of the following is an electrical ground improvement technique?

a) Preloading
b) Grouting
c) Electro-osmosis
d) Dynamic compaction

Ans: c

19. The main purpose of soil investigation is to

a) Determine engineering behavior of soil
b) Determine climate conditions
c) Determine traffic flow
d) Determine building height

Ans: a

20. Ground improvement methods are selected based on

a) Soil conditions only
b) Cost only
c) Soil conditions and project requirements
d) Contractor preference only

Ans: c

UNIT – I: Introduction to Engineering Ground Modification

Fill in the Blanks

1. Ground modification is carried out to improve the _____ properties of soil.
   Answer: engineering
2. The primary objective of ground improvement is to increase soil _____.
   Answer: strength
3. Soil identification is based on its physical and _____ characteristics.
   Answer: engineering
4. The _____ test is commonly used for in-situ soil investigation.
   Answer: SPT
5. Standard Penetration Test is abbreviated as _____.
   Answer: SPT
6. Cone Penetration Test is abbreviated as _____.
   Answer: CPT
7. Laboratory tests help determine soil _____ and compressibility.
   Answer: strength
8. Mechanical ground improvement involves application of _____.
   Answer: compaction
9. Hydraulic modification mainly controls soil _____.
   Answer: water
10. Chemical modification uses soil _____.
    Answer: admixtures
11. Electro-osmosis is an example of _____ modification.
    Answer: electrical
12. Thermal modification involves changing soil _____.
    Answer: temperature
13. Problematic soils often exhibit excessive _____.
    Answer: settlement
14. Soft clay generally has low _____ strength.
    Answer: shear
15. Ground improvement reduces soil _____.
    Answer: compressibility
16. Electrical methods are useful in _____ soils.
    Answer: fine-grained
17. Soil stabilization improves soil _____.
    Answer: performance
18. Engineering ground modification enhances foundation _____.
    Answer: stability
19. Soil classification is essential before selecting a modification _____.
    Answer: method
20. Ground improvement is widely used in _____ engineering projects.
    Answer: geotechnical