

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

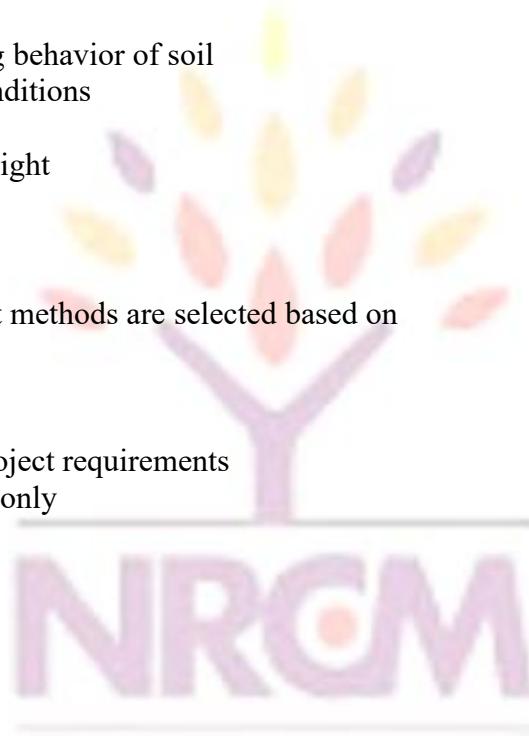
- a) Determine engineering behavior of soil
- b) Determine climate conditions
- c) Determine traffic flow
- d) Determine building height

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



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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