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① What is difference between proctor test and Standardized penetration test?

Ans Standardized proctor test | Standardized penetration test

- It is used to determine the compaction of different types of soil.

- Its graph is parabolic in shape.

- It also gives relation between the moisture content and density of soil.

- It is in situ test which is done to determine the optimal moisture

- It is simple and inexpensive method.

- It is carried out in bore hole.

- It is useful to determine the relative density and the angle of shearing resistance of cohesionless soil.

- It is common in situ method to determine different geotechnical properties

content. ~~utilization~~ of soil.

- The maximum moisture content is achieved for the highest value of dry density.

- It can be also used to determine the uncontrolled or unconfined compressive strength of Cohesive soils.

② What is the classification of Soil based on free swell index?

Ans

Free swell index	Degree of expansiveness	plastic limit
< 20	Low	0-35%
20-35	Moderate	25-50%
35-50	High	35-65%
> 50	Very high	> 45%

③ Why is permeability test for soil important?

Ans Permeability test for soil is important because of the following:-

- 1) To know whether plant roots are being nourished by water.
- 2) In engineering it is important to know whether consolidation occurs so it is observed.
- 3) It is also helpful in fisheries to know about the fish culture.
- 4) To check if there is seepage of water into ground.