

ASSIGNMENT : 01

SUBJECT : GEOTECHNICAL ENGINEERING

SECTION : B

MODULE : 6th

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QUESTION: 01

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- a. What is the difference between standard Proctor and ~~mod~~ standard penetration test?

STANDARD PROCTOR TEST:

It is a laboratory method of experimentally determining the optimal moisture content at which a given soil type will become most dense and achieve its maximum dry density. The dry density of a soil for a given compactive effort depends on the amount of water the soil contains during soil compaction.

STANDARD PENETRATION TEST:

It is an in-situ dynamic penetration test designed to provide information on the geotechnical engineering properties of soil.

The test provides samples for identification purposes and provides a measure of penetration resistance which can be used for geotechnical design purposes.

QUESTION: D1

b. What is the classification of soil based on free swell index?

- According to free swell index the soil is classified into the following liquid, plastic and solid state.

Free Swell index	Degree Of expansiveness	Liquid	Plastic	Solid.
< 20	Low	0-50	0-35%	> 17%
20-35	Moderate	40-60%	25-50%	8-18%
35-50	High	50-75%	35-65%	6-12%
> 50	Very high	> 60%	> 45%	< 10%

QUESTION: 01

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C. Why is permeability test for soil important.

- Soil permeability is the property of soil to transmit water and air and is one of the most important qualities to consider for fish culture, and it is important:
 1. The design of earth dams is very much based upon the permeability of the soil used.
 2. The stability of slopes and retaining structures can be greatly affected by the permeability of the soil involved.
 3. Filters made of soils are designed based upon their permeability.