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Section :- B

Program :- B.Sc Civil Engineering

Semester :- 6th

Q No 1 What is the difference between Standard Proctor Test and Standard Penetration Test? (1)

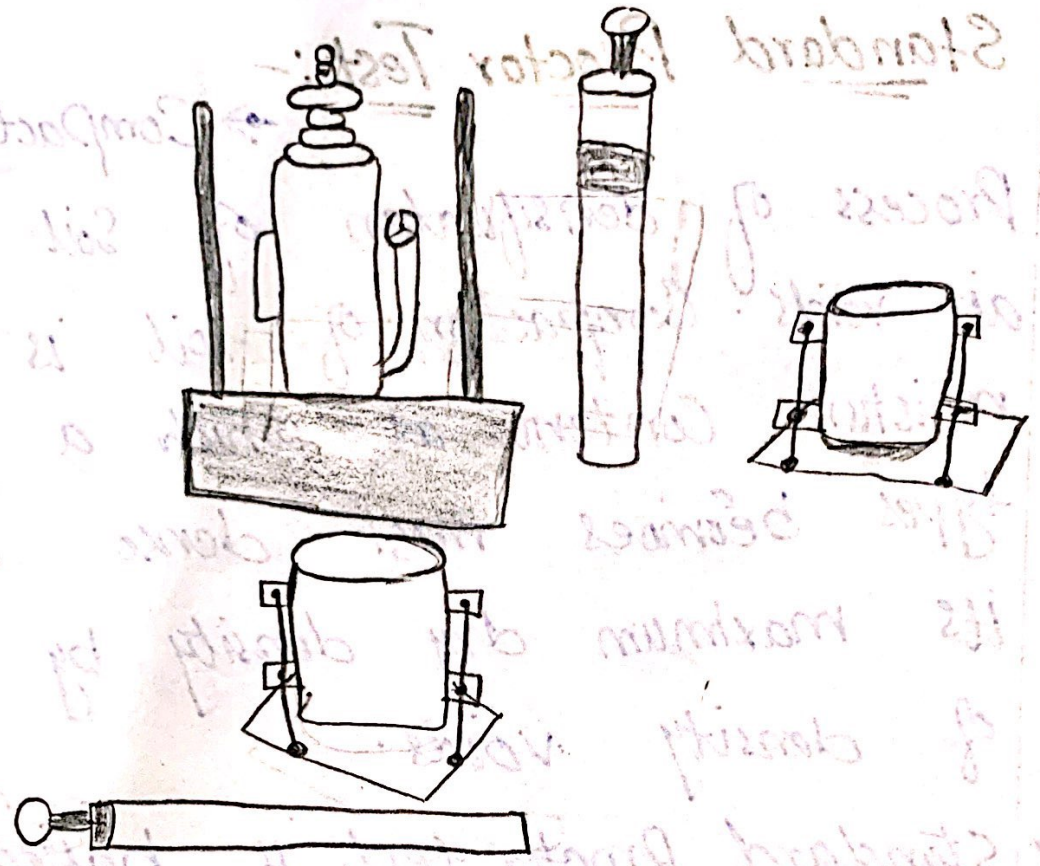
Ans:- Standard Proctor Test:-
→ Compaction is the process of densification of soil by reducing air voids. Compaction of soil is the optimal moisture content at which a given soil types becomes most dense and achieve its maximum dry density by removal of density voids.

→ Standard Proctor test is basically a compaction test of soil that is carried out using Proctor's to understand.

Compaction characteristics of different soil with change in moisture content

→ The degree of compaction of a given soil is measured in terms of its dry density. The dry density is maximum at the optimum water content.

What is the difference between Standard Proctor Test and Standard Penetration Test?

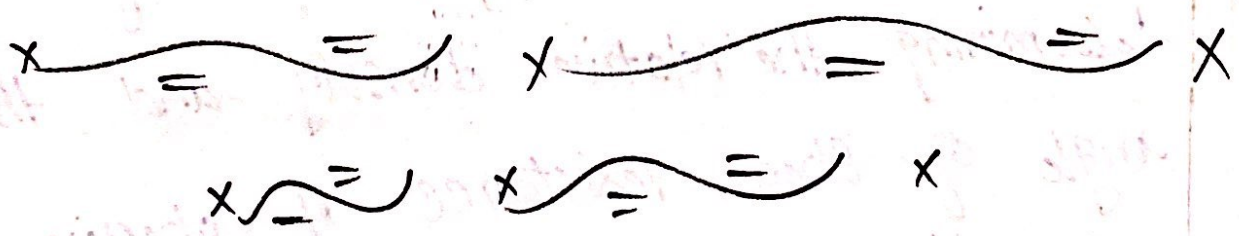
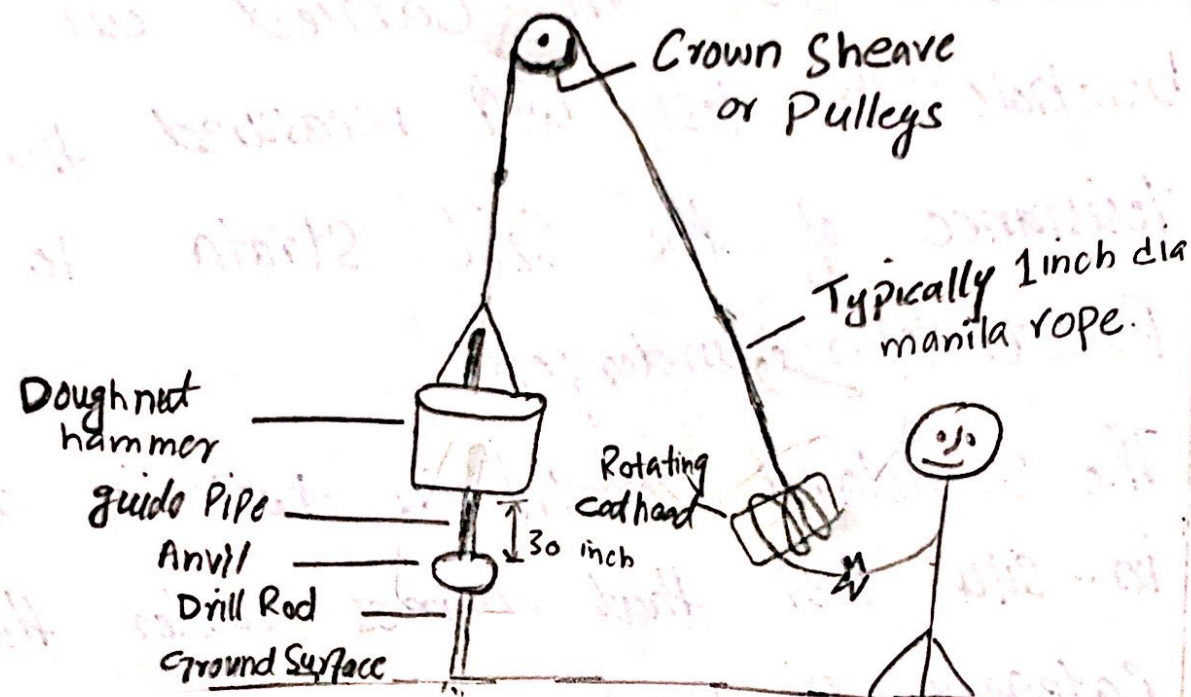


Apparatus of Standard Proctor Test

(11) Standard Penetration Test :-

(3)

- The Standard Penetration test are carried out in borehole. The test will measured the resistance of the soil strata to the Penetration undergone.
- The Standard Penetration test is an in-situ test that comes under the category of Penetrometer tests.
- The test is extremely useful of determining the relative density and the angle of shear resistance of cohesion-less soils. It can also be used to determine the unconfined compressive strength of cohesive soils.
- A Penetration empirical correlation is derived between the soil properties and the Penetration resistance



Q No 2

(5)

What is the Classification of Soil Based on Free Swell Index?

Free Swell Index	Degree of expansive	Liquid Limit	Plastic Limit	Shrinkage Limit	Degree of Severity
< 20	Low	0.50	0-35%	< 17%	Non-Critical
20-35	Moderate	40-60%	25-50%	8-18%	Marginal
35-50	High	50-75%	35-65%	6-12%	Critical
> 50	Very high	> 60%	> 45%	< 10%	Severe



Q No 3

Why is Permeability Test of soil important? (16)

Ans:-

Important of Soil Permeability Test:- Soil

Permeability test is a laboratory experiment conducted to determine the Permeability of Soil.

Following Application illustrates the importance of Soil Permeability.

- Permeability influence the rate of settlement of a saturated soil under load.
- The design of earth dam is very much base upon the Permeability of soil used.
- The stability of slopes and retaining can be greatly affect by the Permeability of the soil involved
- Filters made of soil are design based upon their Permeability.

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