

DATE - 13/02/2020

# परिचय INTRODUCTION

## SYLLABUS

1. Importance of soil studies in Civil Engg.
  2. Classification of soil
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→ What is Soil?

Soil :- Soil is defined as all naturally occurring mineral particles, which is formed by disintegration of Rocks.

Need of Soil Mechanics in Civil Engg. :-

(1) As a Construction material -

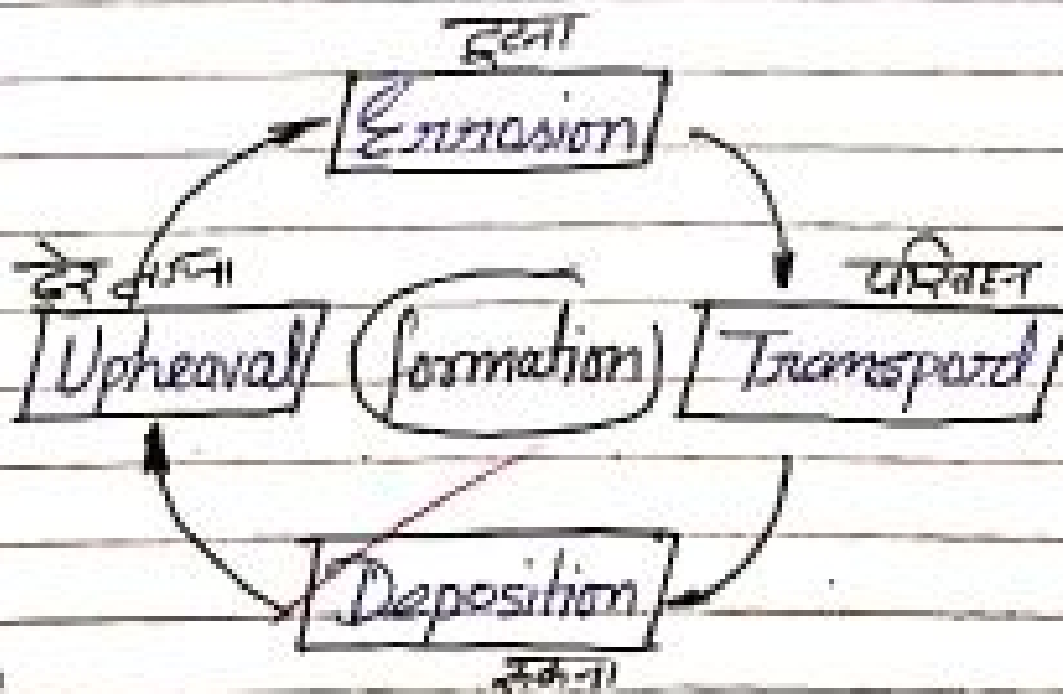
(2) To selection of foundation :- All the civil Engg. structure, ultimately rest on the soil. They transfer their whole load to the soil, so we have to construct the foundation to sustain these structures. If we know the

strength of the soil then we have to provide the deep foundation like pile & well foundation etc.

It is important to know the method to calculate to know the strength of soil.

III) In Irrigation Engineering :

Formation Cycle of Soil :-



→ Upheaval (किसी एक जगह पर ढेर लगना)

## Types of SOIL:

- (I) Alluvial Soil - Soil on bank (flood) of river. Formed due to running water.
- (II) Lacustrine Soil - Deposit in quite lake.
- (III) Marine Soil - Deposit in sea water.
- (IV) Glacial Soil - Transported by Ice.
- (V) Aeolian Soil - Transported by wind.
- (VI) Tuff Soil / Bentonite - Slightly cemented volcanic ash.
- (VII) Colluvial Soil - Deposit due to Gravity (Landslide)
- (VIII) Loess Soil - Wind blown deposit with very uniform fine silt particles.
- (IX) Mung Soil - This is fine particle inorganic soil mix with black decomposed organic matter.
- (X) Peat Soil - This is highly organic soil consisting vegetable matter.
- (XI) Marl Soil - Very fine grained soil of marine origin.

## Comparison of cohesive and non-cohesive soil -

(संलग्नक)

(संलग्नकहीन)

Cohesive Soil	Non-cohesive Soil
<ul style="list-style-type: none"> <li>इन मृदा के कण महीन होते हैं।</li> <li>मृदा के कणों में परस्पर आकर्षण होती है।</li> <li>इन मृदाओं में <i>plasticity</i> होती है।</li> <li>ये नींव के लिए अच्छी नहीं होती है।</li> </ul>	<ul style="list-style-type: none"> <li>अपेक्षाकृत मोटे होते हैं।</li> <li>इनके कणों में आकर्षण नहीं होता।</li> <li>इनमें <i>plasticity</i> नहीं है।</li> <li>ये नींव के लिए उपयुक्त रहती है।</li> </ul>

भारत में मृदा अभियांत्रिकी से जुड़े संस्थान :

- 1- Central Soil Research Institute Delhi
- 2- Bureau of Indian Standard Delhi
- 3- Mining Department of India
- 4- Border Road Laboratory