Practical No.3: Identify various layers and types of soil strata in foundation pit.

I. **Practical Significance-** Identifying various layers and types of soil strata in a foundation pit results in a foundation design that is optimized for the site-specific conditions, reduces construction risks, improves cost-effectiveness, ensures compatibility with the soil, and allows for a more thorough environmental impact assessment. This comprehensive understanding contributes to the overall success and sustainability of construction projects.

II. **Industry or Employer Expected Outcome-**

Undertake safe building construction practices with relevant building materials.

III. **Course Level Learning Outcome-**

Identify relevant type of construction materials for the given type of building.

IV. **Laboratory Learning Outcome-**

Identify various layers and types of soil strata in foundation pit.

V. **Relevant Affective domain related Outcome**

1. Follow safety practices

VI. **Relevant Theoretical Background**

- The unconsolidated mineral of crust is known as soil.

Importance of soil-

- As a construction material in civil engineering-
  1. Clay
  2. Pervious and impervious soil
  3. For WBM water bound macadam roads
  4. Canal and embankments
  5. Retaining walls
- As foundation materials-
  1. Bridge Pier foundation
  2. Building foundation
  3. Earth dams
  4. Railways
  5. Runways of airport, roads etc.

VII. Actual Diagram with equipment specification

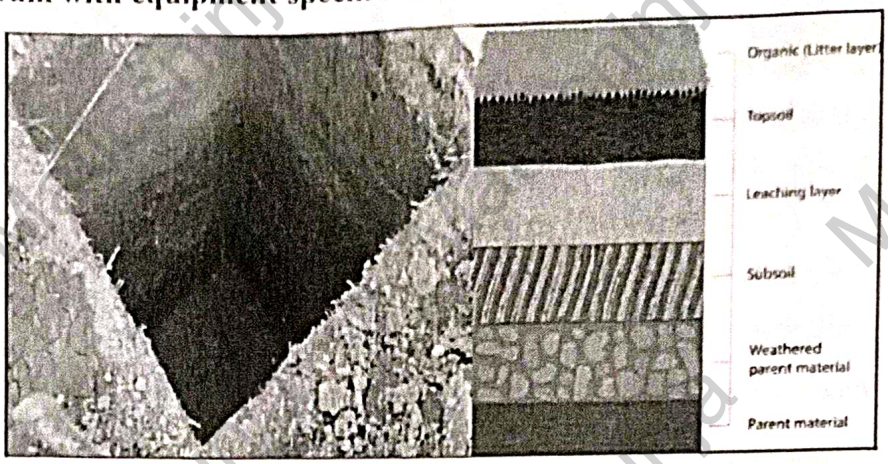

Figure 3.1: Various layers and types of soil strata in foundation Pit

VIII. Resources required

Sr.No.	Particulars	Specification	Quantity	Remark
1	Measuring Tape	-	-	-
2	Photographic tool	-	1 nos.	-

IX. Precautions to be followed

1. Maintain discipline during visit
2. Listen and follow the instructions given by site in-charge
3. Use safety measures on site.

X. Procedure

1. Conduct the visit to actual site of foundation Pit.
2. Observe the layer of soil strata
3. Discuss about the soil present in pit.
4. Find the properties of soil present in pit.

XI. Observation Table

Sr.No.	Soil type	Depth of layer	Colour	Physical Properties
1	Tops oil	0 - 20 cm	Park down	loose
2	eloys oil	20 - 50 cm	Raddish brown	water compact
3	Sandy oil	50 cm	light brown	gritty

XII. Result

The observation table would sumurize the key flooring based on soil conracteristic

XIII. Interpretation of results

Top sui the dark brown colour and loose texture indicate a high organic matter content clayey soil (20-50m) High water reetion sandy soil (50-5mt) fast change.

XIV. Conclusions and Recommendations (if any)

The observed soil profile sugests that they upper layer is suitable the agriculture due to its firtillary while the deeper layer intinue water relation and organic

XV. Practical Related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO. Write answers of minimum three questions.

1. State the nos. of Layer available in foundation Pit.
2. State the importance of soil in Civil Engineering.
3. State the function of soil used for foundation.
4. State four physical properties of soil.
5. Define soil.
6. What is foundation pit and state their size

Q.1 → ?

Ans:- The number of soil layer is the foundation depends on the obserd starta in the excavation Based on the given

Q.2 → ?

Ans:- soil plays a crucial role in civil eng. as it forms the foudation for a structured It's property influnces construction stability.

and durability 1] foundation support 2] struct- tund stability 3] Water ectention:

Q.3 ⟶ ?
Ans:- soil plays a virtual role in supporting and stabilizing structures.
Lead bearing and support stability and strength Oeiange cantal posion prevention.

Q.4 ⟶ ?
Ans:- Lecture 2] structure 3] porosity
4] noist aee content.

Q.5 ⟶ ?
Ans:- soil is the naturally occuring looses mode soil sovering the earths surface composed of mineals, oeganic matter water and are it forms through the woathing of locks & decomposition of oeganic materials over time.

Q.6 ⟶ ?
Ans:- foundation pit is an excavanted area in the ground where the foundation of a building structure is constructed
1] shallow foundation pit more than 3 actual
2] Deep foundation pits (3 moto so)m.

XVI. References/ suggestions for further Reading

Sr. No.	Links	Discription
1	https://youtu.be/urPzND_JbL8?si=y4E-LIR3Dbo9IRUe	Various layers of soil in foundation Pit
2	https://youtu.be/TXl5dVlOiZA?si=EDFoIwSABcKn6Cpr	Various layers of soil in foundation Pit