



Civil Engineering

Vision: “To impart quality technical education beneficial to industry and the society in the field of Civil Engineering.”.

- **Mission:** • To arrange academic and technical expertise.
 - To improve the practical knowledge of the student as per current scenario of industry.
 - To make the students socially and ethically responsible.

Assignment No :- 01

Date :-

Topic Name :- Overview of geology and geotechnical engineering.

1. Define soil as per IS.
2. State classification of rocks on their mode of origin.
3. State 4 field applications of geotechnical engineering.
4. Define geology and state its branches.

Date of Submission :-

Assign By :- Mrs. Pranjali Chafale



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Assignment No :- 02

Date :

Topic Name :- Physical and index properties of soil.

1. Explain the soil as three phase system.
2. Define void ratio, porosity, degree of saturation and water content.
3. Calculate the voids ratio and dry density if the soil sample has 30% porosity and specific gravity as 2.6.
4. State particle size classification of soils.
5. Calculate coefficient of uniformity and coefficient of curvature for a soil sample for which $D_{10}=0.430\text{mm}$, $D_{30}= 0.790\text{mm}$, $D_{60}=1.300\text{mm}$.
6. Explain with sketch specific gravity determination by pycnometer.

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Assignment No :- 03

Date :

Topic Name :- Permeability and shear strength of soil

- State the field situations where permeability of soil is necessary.
- Explain the standard proctor test to determine OMC and MDD of soil.
- Differentiate between compaction and consolidation with four points.
- Explain the falling head method to determine coefficient of permeability.
- Calculate the coefficient of permeability if a soil sample of 10cm diameter and 25cm length was tested in the permeameter under constant water head 15cm for 12 minutes. The discharge collected in the measuring cylinder found to be 150cc.

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Assignment No :- 04

Date :

Topic Name :- Bearing capacity of soil.

- Differentiate between active earth pressure and passive earth pressure.
 - State the assumptions made in Terzaghi's analysis bearing capacity failures of soil.
 - Explain the plate load test for determination of bearing capacity of soil.
 - Explain the effect of water table on bearing capacity of soil.
 - A retaining wall 6m high has a smooth vertical back. The backfill is horizontal. There is a uniformly distributed load of 3.6 t/ sq.m. over the back fill. Take $\gamma=1.8$ t/cu.m, angle of repose=30 and $c=0$. Determine the magnitude of active earth pressure.
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Assignment No :- 05

Date :-

Topic Name :- Compaction and stabilization of soil.

- Define compaction by tamping.
- Define CBR value and explain the test along with neat sketch.
- Differentiate between compaction and consolidation with four points.
- Give necessity of site investigation and sub soil exploration.
- State the different methods of soil stabilization and explain any one.

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