

Shantilal Shah Engineering College- Bhavnagar
Applied Mechanics Department
FOUNDATION ENGINEERING (2180609)
B.E. 8th Semester Civil Engineering

Tutorial: 1 : Selection of foundation and Sub-soil exploration/investigation

Q:-1 Write short note on types of foundations.

Q:-2 What are the factors affecting the selection of type of foundations?

Tutorial: 2 : Shallow Foundation:

Q:-1 What are the design criteria of shallow foundations?

Q:-2 Explain "types of shear failure of soil" with neat sketches.

Q:-3 describe the plate load test with neat sketches.

Tutorial: 3 : Pile Foundation:

Q:-1 Discuss various dynamic formula. What are their limitations?

Q:-2 What is negative skin friction? What is its effect on the pile?

Q:-3 Explain in detail the types of failure of pile group.

Q:-4 Write short note on group action and efficiency of pile group.

Q:-5 How do you estimate the group capacity of piles in sand and clay?

Q:-6 A 30 cm diameter concrete pile is driven into a homogeneous consolidated clay deposit ($C_U = 40 \text{ kN/m}^2$, $\alpha = 0.7$). If embeded length is 10 m estimate safe load on pile, factor of safety is 2.5.

Q:-7 A reinforced concrete pile weighting 30 kN (incusive of helmet and dolly) is driven by a drop hammer weighting 40 kN and having an effective fall of 0.8 m.

The average penetration per blow is 14 mm. The total temporary elastic compression is 18 mm. Assuming coefficient of restitution as 0.25 and factor of safety as 2, determine the ultimate load and allowable load for the pile use Hiley's formula.

Tutorial: 4: Foundation on Problematic Soil & Introduction to Geosynthetics:

Q:-1 Write short note on Expansive Soils.

Q:-2 Write short note on Under Reamed Pile foundation.

Q:-3 Write short note on Geosynthetics types and Uses.

Tutorial: 5 : Retaining Walls:

Q:-1 Write short note on

(1) Counter Fort Retaining Wall

(2) Gravity Wall

(3) Diaphragm Wall

(4) Sheet Piles Wall