
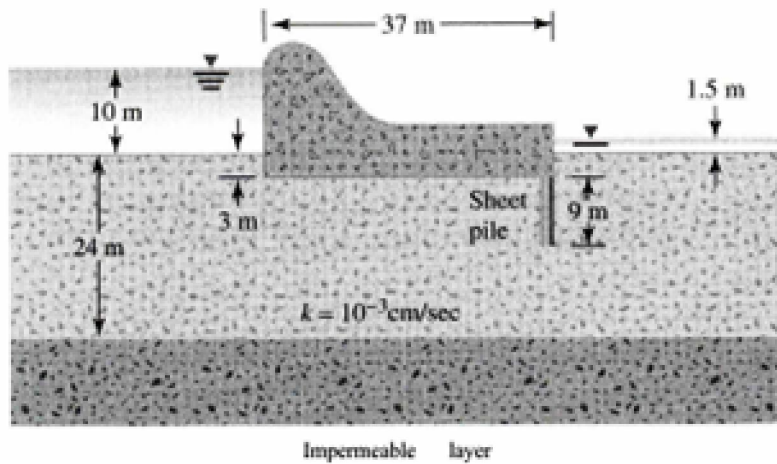


Course No: ECGD3216
 Course Title: Soil Mechanics
 Date: 21.05.2011
 No. of Questions: 6 + 1
 Time: 3 Hours
 Using Calculator: (Yes)

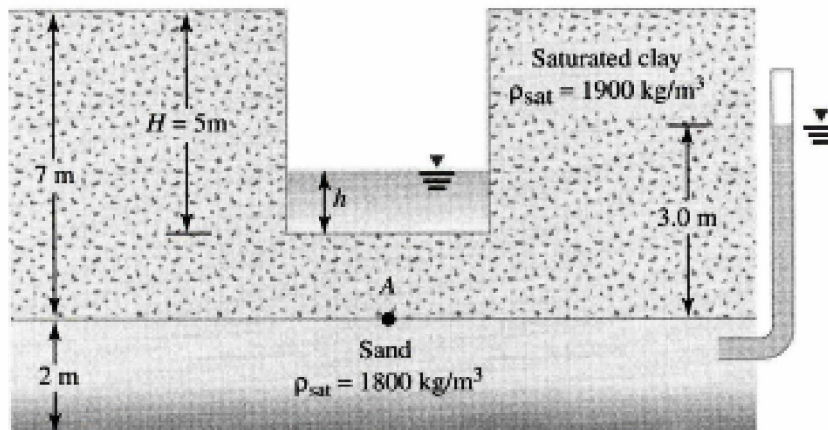
University of Palestine

 Open Book Final Exam
 2nd Semester 2010/2011
 Total Grade: 60 + 10

Instructor: Dr. Wa'el Albawwab
 Student No.:
 Student Name:
 College Name:
 Dep. / Specialist:
 Using Dictionary: (Yes)


Q1- Draw a suitable flow net to estimate the rate of seepage under the weir shown in the figure below. **(10 Marks)**



Q2- The figure below show a cut in a stiff saturated clay layer that is underlain by a layer of sand. What should be the height of the water (h) in the cut so that the stability of the saturated clay is not lost? **(10 Marks)**

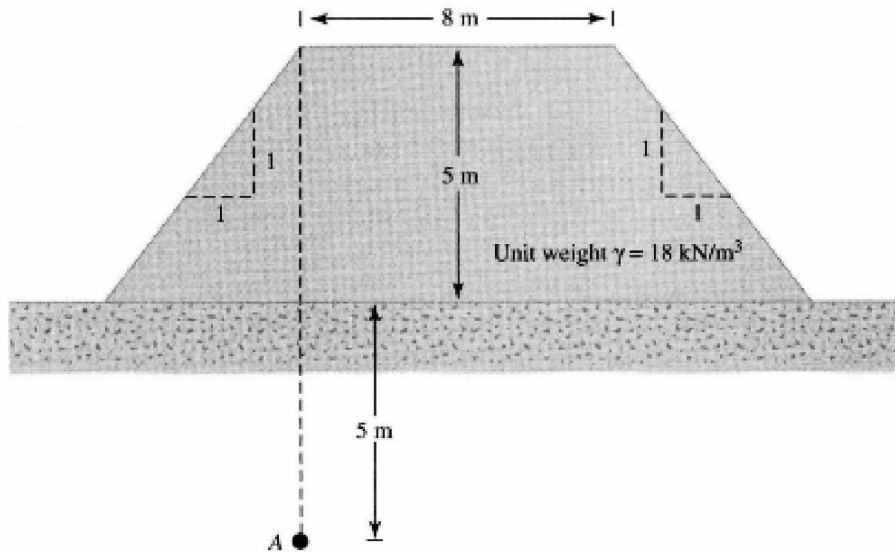


Course No: ECGD3216
Course Title: Soil Mechanics
Date: 21.05.2011
No. of Questions: 6 + 1
Time: 3 Hours
Using Calculator: (Yes)

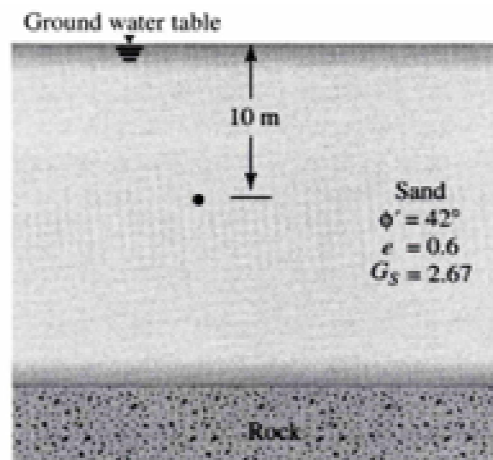
University of Palestine

Open Book Final Exam
2nd Semester 2010/2011
Total Grade: 60 + 10

Instructor: Dr. Wa'el Albawwab
Student No.:
Student Name:
College Name:
Dep. / Specialist:
Using Dictionary: (Yes)

Q3- Determine the vertical stress increase at point A due to the earth embankment load, as shown in the figure below. **(10 Marks)**



Q4-a- Determine the expected shear resistance at a depth of 10 m below the ground surface in the profile shown below. **(5 Marks)**



Course No: ECGD3216
Course Title: Soil Mechanics
Date: 21.05.2011
No. of Questions: 6 + 1
Time: 3 Hours
Using Calculator: (Yes)

University of Palestine

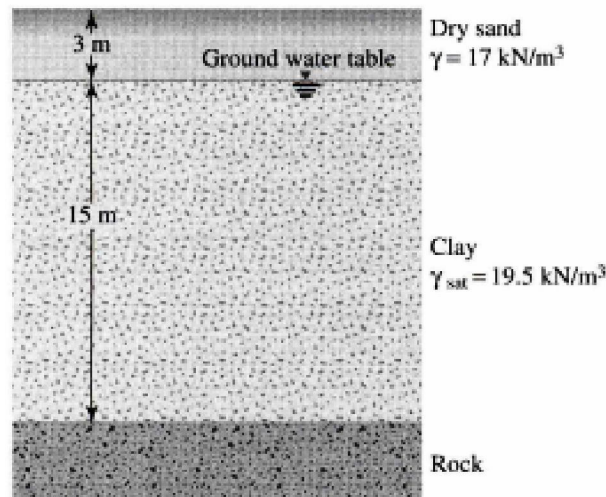


Open Book Final Exam
2nd Semester 2010/2011
Total Grade: 60 + 10

Instructor: Dr. Wa'el Albawwab
Student No.:
Student Name:
College Name:
Dep. / Specialist:
Using Dictionary: (Yes)

Q4-b- How long will it take for a 4 m thick clay layer in the field to undergo 70% double drained primary consolidation, if laboratory tests on 25 mm thick specimen of the same clay took 11 minutes for 50% double drained primary consolidation. **(5 Marks)**

Q5- Refer to the soil profile shown below to estimate the corrected undrained cohesion by the vane shear method at 6 m depth below the top ground surface. The clay is normally consolidated and has a plasticity index of 18. **(10 Marks)**



Q6- A 5 m high vertical wall is retaining a c' - ϕ' backfill with $\gamma = 19 \text{ kN/m}^3$, $c' = 26 \text{ kPa}$, and $\phi' = 16^\circ$. Determine Rankine's active force on the wall. **(10 Marks)**

Q7- (Laboratory) Write a brief report highlighting the main tests discussed during your field visit to the soil lab. **(10 Marks)**