RAK-23526 Computational Geotechnics
EXAM 11.12.2019
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Calculators, books, personal notes etc. are NOT ALLOWED. Question paper does not need to be returned.
Questions 1 – 4, 3+3 points each. Maximum of 24 points.

1)   a) Which factors influence on undrained shear strength? How is it evolving with time after the construction of an embankment?

b) What are the challenges in undrained effective stress stability analysis? How is this dealt with in GeoCalc program?

2)   a) What is the importance of the preconsolidation pressure σ'_p in settlement calculations? How do you determine your σ'_p profile for a soil layer?

b) How is strain rate influencing the oedometer tests?

3)   a) In which circumstances does the Coulomb earth pressure theory give unreliable results? Why?

b) Briefly describe the MCM model that is used in supported excavation calculations in GeoCalc.

4)   a) Draw a principle sketch of how the earth pressures are related to displacements. Explain the sketch with few lines.

b) Is it correct to use circular slip surface to determine the embedment length of a wall in soft clay? Justify your answer.