

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Translate and explain the following professional terms in Chinese. (18%)

(1) Consolidation?(3%) Over-consolidating clay?(3%)

(2) Compaction curve?(3%) Over-compaction? (3%)

(3) Discharge velocity?(3%) Seepage velocity? (3%)

2. Explain the laboratory tests (12%) and derive their equations (12%) to determine the hydraulic conductivity of soils?

3. (1) Explain the logarithmic method (10%) and square root method (10%) to determine the consolidation coefficient.

(2) Write down three in-situ methods to accelerate the consolidation settlement (6%)

4. Plot the total ( $p-q$ ) and effective ( $p'-q$ ) stress paths of the CU tests to the each of the following two soils:

(1) normally consolidated clay (10%)

(2) over-consolidated clay (10%)

5. What kinds of tests and what kinds of parameters are need to conduct the Unified Soil Classification System (12%)