

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF CIVIL AND WATER ENGINEERING
FACULTY OF INDUSTRIAL TECHNOLOGY
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART V EXAMINATIONS MAY 2006
FOUNDATION ENGINEERING DESIGN TCW 5202

INSTRUCTIONS

Answer ALL Questions

Time 3 Hours

Total Marks:100

QUESTION ONE

Determine the following for the Retaining wall shown in Fig 1.0. Angle of repose for the soil is 30° and the density of the soil is 16kN/m^3 .

- (a) Total horizontal active force at base
- (b) Overturning Moment
- (c) Individual vertical forces and the total vertical force acting on the structure.

25 Marks

QUESTION TWO

- (a) When is it necessary to consider Pile Foundations
- (b) Describe Bearing and Friction Piles
- (c) Describe the installation of Franki Piles

25 Marks

QUESTION THREE

- (a) Describe the purpose of ground water control in foundation engineering
- (b) What methods are available to achieve this purpose.
- (c) Describe any two methods of ground water control.

25 Marks

QUESTION FOUR

- (a) Explain the following
 - (i) Immediate settlement
 - (ii) Consolidation settlement
 - (iii) Final settlement

(b) Describe the causes of differential movement between parts of a structure, **25 Marks.**