NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF CIVIL AND WATER ENGINEERING
FACULTY OF INDUSTRIAL TECHNOLOGY
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART V EXAMINATIONS (Supplementary) JULY 2005
FOUNDATION ENGINEERING DESIGN TCW 5202

INSTRUCTIONS

Answer ALL Questions

Time 3 Hours
Total Marks:100

QUESTION ONE

[A] What are Pile Foundations (6 Marks)

[B] Describe types of Piles (8 Marks)

[C] Describe Frankie Piles (6 Marks)

QUESTION TWO

[A] Define
(i) Immediate settlement
(ii) Consolidation settlement
(iii) Final settlement (12 Marks)

[B]
(i) Define Compression Index C
(ii) The following values were obtained from an Oedometer Test on a sample of clay.

Applied Pressure (kN/ m)	0	25	50	100	200	400	800
Void Ratio, e	2.11	2.08	1.99	1.85	1.61	1.35	1.11

Plot the ' e' vs log curve and estimate the Compression Index (13 Marks)

QUESTION THREE

A load of 500kN is uniformly distributed over a rectangular area of 1.5m by 1.0m. Determine the vertical component of stress at a depth of 2.0 meters below

(i) Center of rectangle (12 Marks)

(ii) One corner of rectangle (13 Marks)

Question Four

[A] Describe The Standard Compaction Test (Proctor), stating its object. (10 Marks)

[B] In a Standard Compaction Test 0n a sample of soil the following results were obtained

Water Content %	Dry Density Mg/ m
5	1.8
8	1.97
10	2.00
12	1.97
15	1.88
20	1.73

Show these results plotted as Dry Density against Water Content and determine Maximum Density