UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE

MAIN EXAMINATION PAPER DEC 2016

TITLE OF PAPER:

BUILDING CONSTRUCTION

TECHNOLOGY I

COURSE CODE:

EHS 203

DURATION

: 2 HOURS

MARKS

: 100

INSTRUCTIONS : ANSWER ANY FOUR QUESTIONS

: EACH QUESTION CARRIES 25 MARKS

: BEGIN EACH QUESTION ON A SEPARATE

SHEET OF PAPER

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR

Street, at	26 2.9	PACE N	- 12P	SEC			40.00	2.0	343		3553	2.00	1 (2009)		201.06	- A	200	31.148	100	. 1/0	150.00	387713.	district to	Terran	16000	Landille I	China C	2000	1267.30	100	Section 1	3000	600000	2000.34	4 OU	1.080	1272	11015	1.00 650	ate la	1.00	コイズング	1427
-86	1.12.4	46.59	91.X	10000	m 120	التكلية	100	1.27%	14.5%	36.Dec	ALC:57	and the second	120 (10)	n/EB	BEE A	150		W 45	N-95	0.15	75.7	70 V.		25.00	77	201		1. 0 (6)	-24	1101	SXIVE	99 J	Policies	3X03	2.025	is sites:	200		12.55	32.00	#363 N	1106	
100	-	<i>"</i>	CF F		733	Arriva I		- 34	777	0.7	187	.767	7.22		75.0	467	<i>2</i> 4 30	157	3.17	- 55	6	VI.25		Dr. 525	95E	77	77.7	100		97.68	21.3	6 C 1				100	ma A	ma	- 41	A 27	log	10 M	
r.	744	7.5	W 62	1.55	255	304	168			7 de 19	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		411		-4	922	413	F4 6	100	377	av 11	. 150	12.7			25.2	,,,,	88.		2 200	.,,	83.5	9 69 7	10.00	***		82 E.F.	F. E.U	114	,,,,		Art 1998	100

when considering the environment concept

QUESTION ONE

- (a) Describe the LCA process in the construction industry
 (b) Explain the role of Environmental Health Officers during the traditional building project life cycle
- (c) The interface between the Built Environment and the Natural Environment is critical. Explain why analysis of this is particularly important for engineers and environmentalist

[5]

QUESTION TWO

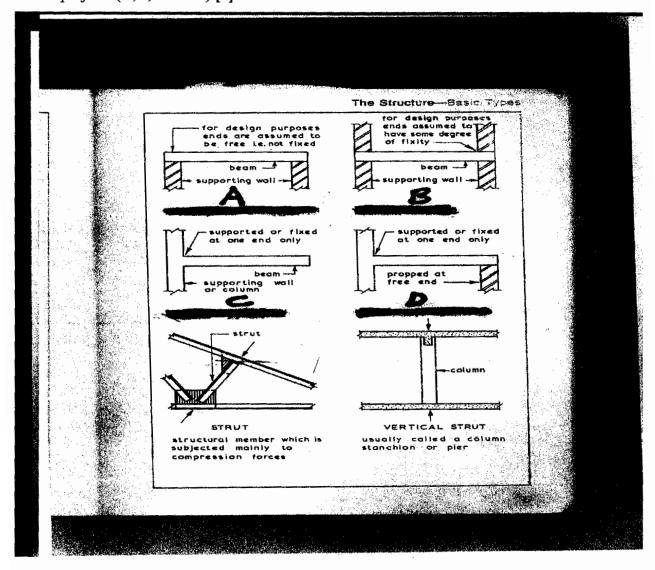
- (a) Using simple sketches describe the three types of stresses in building construction
- (b) Discuss the notion of buildings as environment envelope [6]
- (c) There is often need for removal of top soil in preparation for building commencement. Give three reasons usually given for this removal [6]
- (d) What are the factors related to ground conditions that help guide selection of foundation types?
 [7]

QUESTION THREE

- (a) The production of concrete follows eight steps. Describe the steps in the production of concrete [16]
- (b) Describe the process of carrying out the slump test to determine the compressive strength in concrete. [9]

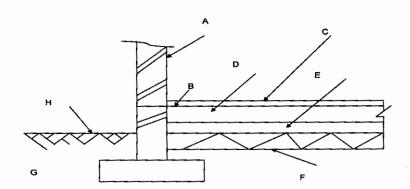
QUESTION FOUR

(a) On your answer script label the following basic types of beams used in construction projects (A,B,C and D) [4]



Page 3 of 4

(b) Label the following diagram representing a ground floor



[8]

(c) Outline the three purposes of brick bonding [3] [10] (d) Sketch out the three main types of bonds you know

QUESTION FIVE

(a) Describe the characteristics of a simple mass concrete foundation [6] [3] (b) What is the implication of low soil strength on strip foundation design (c) How would you design for point loads on foundations? [3] (d) Which are the seven typical security provisions that can be made at the construction site. [7]

(e) Sketch out a simple timber pitched roof structure to show the following component parts [6]

> I. Rafters;

II. ridge

III. Purlines;

IV. Eaves;

V. Hip rafters

Gable end VI.

VII. Gable end