UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE

RESIT EXAMINATION PAPER JANUARY 2020

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

QUESTION ONE

a) Carrying out site investigation often reveals a considerable amount of information that often has a major influence on the way in which the building is put together. Give examples of such information. **[10]**

b) What are the benefits of sustainable house construction **[5]**

c) Describe the following models of construction sequencing

i. RIBA model **[5]**

ii. Traditional model **[5]**

QUESTION TWO

a) In what ways is the construction industry contributing to the following:

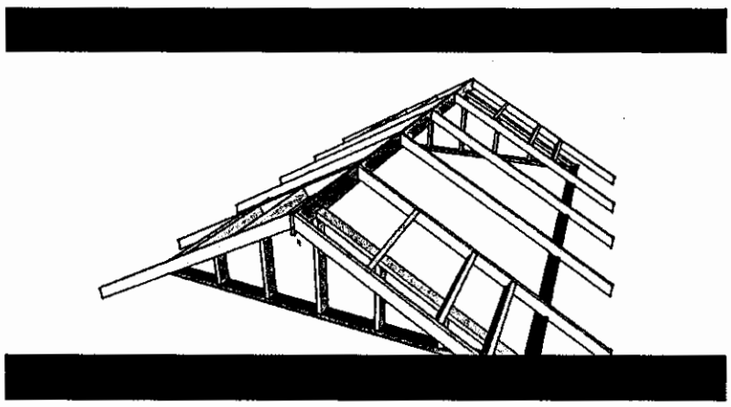
i. Water pollution **[2]**

ii. Air pollution **[2]**

iii. Soil erosion **[2]**

b) Summarize at least three main aspects of foundation performance **[6]**

c) Sketch out a rough sketch of timber pitched roof like the one below and then label or identify the following: **[7]**



i. Rafters

ii. Purlin/battens

iii. Eaves- overhang

iv. Ridge

v. Hip rafters

vi. Jack rafters

vii. Fascia

d) Write short notes on timber flat roofs [5]

e) What do you call the reaction between water and cement in concrete making [1]

QUESTION THREE

(a) Evaluate the use of timber roof trusses over steel roof trusses [8]

(b) List three factors which lead to differences in cost of building materials in various shops. [3]

(c) What are the three primary objectives of construction site security? [3]

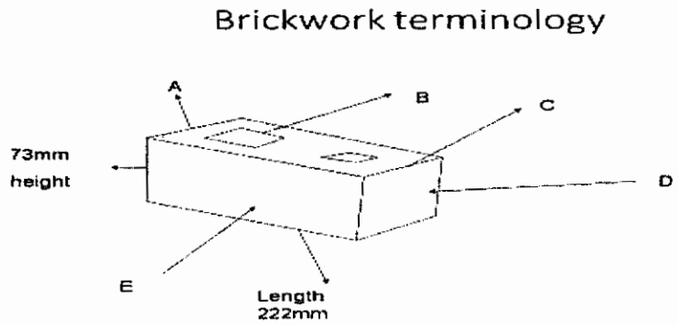
(d) List the seven typical security provisions that can be made at the construction site. [7]

(e) Describe the process of carrying out the slump test to determine the compressive strength in concrete. [4]

(f) Describe the curing process on flat and vertical grounds respectively [2]

QUESTION FOUR

a) Label the following burnt clay brick A,B,C,D,E [5]



b) Outline at least five site characteristics that may be identified when you carry out a topographical inspection as part of your site investigation before you start at a construction site [10]

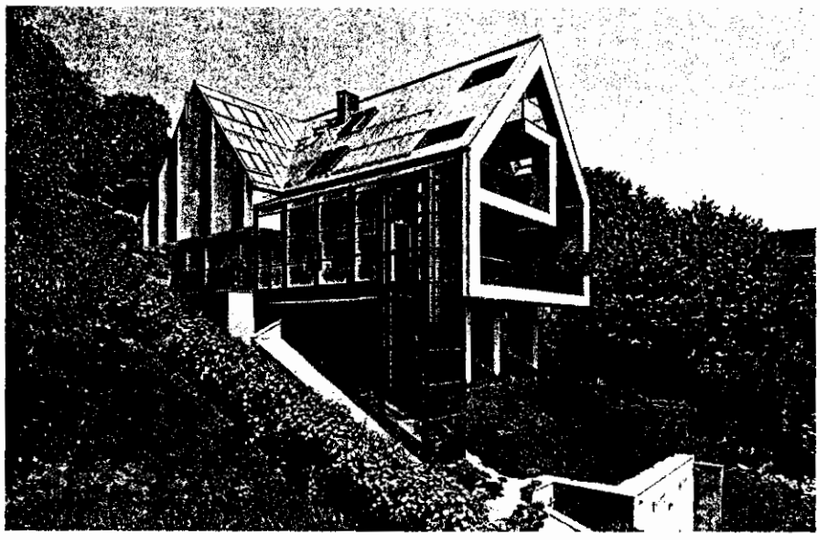
c) Identify the temporary services necessary at a construction site [3]

d) What is the purpose of hoardings at a construction site [4]

e) Mention three factors to consider before deciding on a foundation type for your building [3]

QUESTION FIVE

(a) Given the following heavily sloped site topography, sketch out and describe three excavation techniques employed in order to put up a building. For each technique state advantages and disadvantages [9]



(b) Giving appropriate examples differentiate between deep and shallow foundations [6]

(c) Concerning Doors and Windows there are three basic functions between the two that are commonly shared. State these functions. [6]

(d) Where would louvers in a building be commonly positioned [2]

(e) Use two sketches to show differences between bottom hung and top hung windows [2]
