

**UNIVERSITY OF SWAZILAND**  
**FACULTY OF HEALTH SCIENCES**  
**DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE**  
**RE-SIT EXAMINATION PAPER JANUARY 2019**

**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**

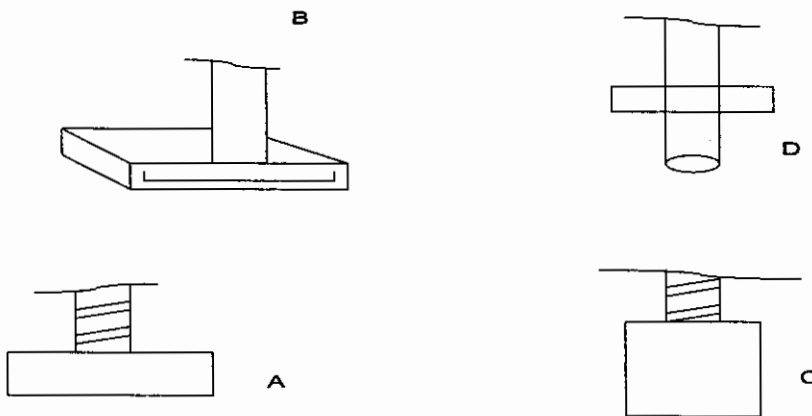
**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED  
BY THE INVIGILATOR**

**QUESTION ONE**

- a) One of the biggest expenses with any new development is the outlay on infrastructure to be provided. Give six examples of these. [6]
- b) 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]
- c) What are the benefits of sustainable house construction [9]

**QUESTION TWO**

- a) In as few words as possible distinguish between the following forms of stress:
  - i. Tensile [2]
  - ii. Torsional [2]
  - iii. Shear [2]
- b) Summarize at least three main aspects of foundation performance [6]
- c) Label the following types of foundations below (A, B, C, D) and state under what conditions each type is used. [8]



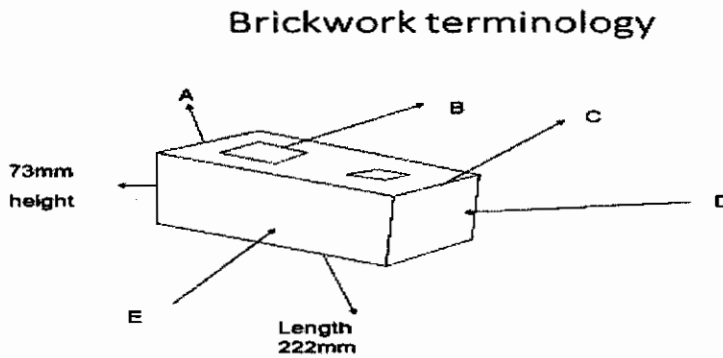
- d) Differentiate between fresh concrete and hardened concrete [4]
- e) What do you call the reaction between water and cement in concrete making [1]

**QUESTION THREE**

- (a) State the three classes of floor finishes. [6]
- (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**

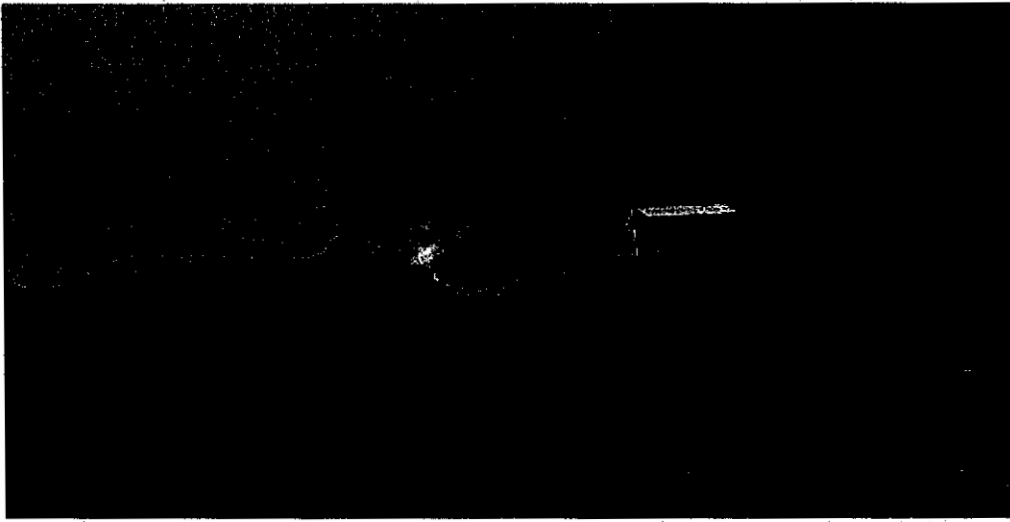
- a) Label the following burnt clay brick A,B,C,D,E [5]



- b) What is meant by Quoin in brickwork? [1]
- c) With the aid of a sketch describe how you would go about constructing a solid ground floor and describe the utility of the parts in a solid ground floor [19]

**QUESTION FIVE**

- (a) Given the following 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) State the five advantages of burnt clay bricks as a building material [5]
- (c) Given wooden and metal doors, which will you choose to use in a domestic building? Give reasons for your choice [6]
- (d) Describe the five features of the local natural environment important to our choice of site for building [5]