UNIVERSITY OF SWAZILAND
FACULTY OF HEALTH SCIENCES

BACHELOR'S DEGREE IN ENVIRONMENTAL HEALTH SCIENCE

MAIN EXAMINATION PAPER DEC 2014

TITLE OF PAPER : BUILDING CONSTRUCTION TECHNOLOGY I

COURSE CODE : EHM 201

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS : ANSWER ANY FOUR QUESTIONS

: EACH QUESTION CARRIES 25 MARKS

: NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM

: 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) Distinguish between *dead* and *live* loads as applied to buildings **[2]**

(b) Give **two** disadvantages each of using the following walling materials; **[8]**

i. Adobe blocks

ii. Timber

iii. Concrete

iv. Wattle and daub

(c) Draw and label the different types of roofs you know **[6]**

(d) A building is essentially created to protect people from extremes of the environment. Explain this statement by giving examples of these environmental parameters from which people need to be protected from. **[7]**

(e) Drawing upon principles of floor types distinguish between *in situ* and *applied* floor finishes. **[2]**

QUESTION TWO

(a) Describe the important site lay out consideration for a successful construction project **[10]**

(b) Consider the following methods used in excavation;

i. Cut and fill

ii. Cut

iii. Fill

Draw sketches for each and state advantages and disadvantages of each. **[6]**

(c)) Describe the Flemish Bond and the English Bond. And give three reasons for brick bonding when carrying out super structural operations **[5]**

(d) Outline the process of concrete making **[4]**

QUESTION THREE

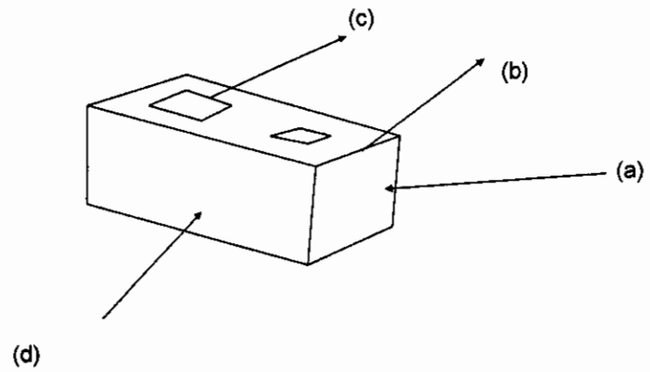
(a) A restaurant has lodged a complaint arising out of logging and construction activities around town. Describe in detail the likely issues raised in the complaint. **[15]**

(b) Carry out the appropriate analysis and report on the LCA of cement as a building material **[10]**

QUESTION FOUR

(a) With regards to concrete strength, time and water are important factors to consider. Explain in what way. **[6]**

(b) Label the following parts of a clay brick: **[4]**



(c) Raise nine points on causes, impacts and possible remedies of dampness in a building **[9]**

(d) Riley and Cotgrave (2008) argue that the use of timber is almost ubiquitous for roof structures. Explain why it is the case. **[4]**

(e) What is meant by lateral stability and side thrust? **[2]**

QUESTION FIVE

(a) A building engineer is tasked with making a choice between several types of foundations for a big construction project. Discuss five factors that may help him come to a proper conclusion on his choices. **[10]**

(b) Choose any three below and sketch out to demonstrate understanding of brickwork terminology **[3]**

i. Toothing

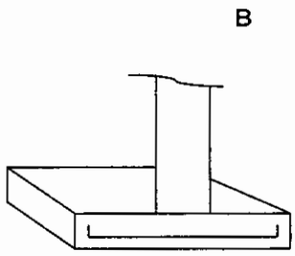
ii. Raking back

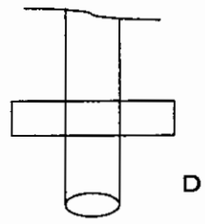
iii. Cross joint

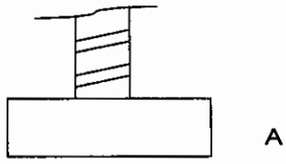
iv. Bed joint stretcher course

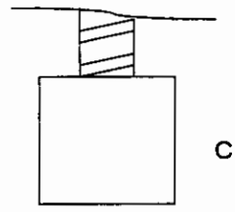
v. Quoin

(c) Name the following types of foundations (A, B, C, D) and state under what conditions each type is used. **[4]**









(d) Label the following diagram representing a ground floor **[8]**