

**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Sciences**

**DIPLOMA IN ENVIRONMENTAL HEALTH SCIENCES**

**FINAL EXAMINATION PAPER 2007**

**TITLE OF PAPER** : BUILDING CONSTRUCTION  
TECHNOLOGY

**COURSE CODE** : EHS 206

**DURATION** : 3 HOURS

**MARKS** : 100

**INSTRUCTIONS** : ANSWER ANY FIVE QUESTIONS

: EACH QUESTION CARRIES 20 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**

56

**QUESTION ONE:**

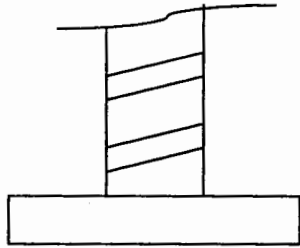
**COMPULSORY MULTIPLE CHOICE QUESTION.**

**Choose one answer for each [2 marks per point]**

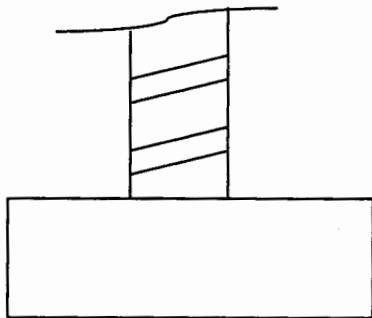
1. The main method used by the architect to communicate ideas and designs to the builder is
  - a. telephone messages
  - b. drawings, plans, & details
  - c. manufactures information sheets
  - d. video tapes
2. The wall thickness and foundation widths when setting out a building are marked on
  - a. the ground floor
  - b. the concrete slab
  - c. the profile board
  - d. the four stout pegs
3. Reasons for removing vegetable soil are :
  - a. to avoid growth of plants, shrubs or trees
  - b. to have a firm base to cast concrete slab
  - c. to minimize dampness under floors
  - d. to act as dpc
4. Batching refers to
  - a. stacking of building materials
  - b. stumping base in preparation for putting foundation
  - c. producing fresh concrete
  - d. non of the above
5. The term *COURSE* in brick or block wall construction means
  - a. the number of bricks or blocks in a line of bricks or blocks.
  - b. A line of brick or blocks in the height of a wall
  - c. The pattern of laying the bricks or blocks
  - d. The number of lines of vertical and horizontal mortar joints
6. The term *BUILT ENVIRONMENT* can be defined as
  - a. Gods creation
  - b. rivers, and seas
  - c. Created by man with or without the aid of the natural environment
  - d. Surroundings which can be natural

57

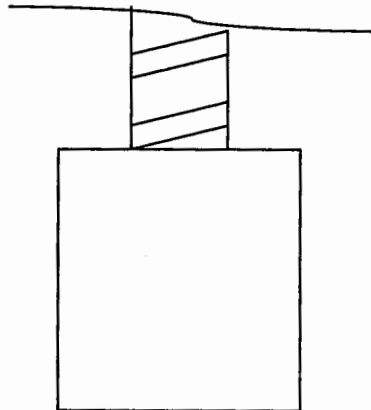
7. Which sketch illustrates a deep strip foundation



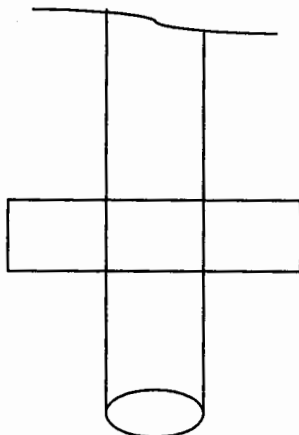
a.



b.



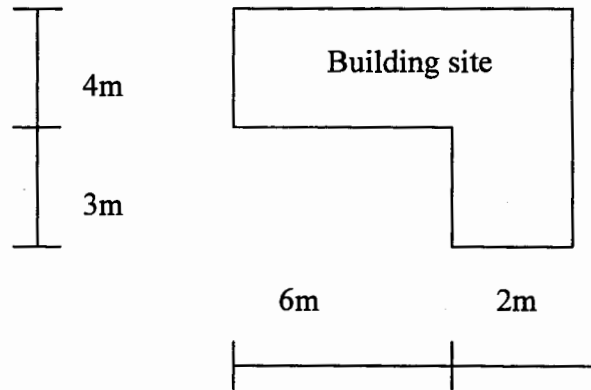
c.



d.

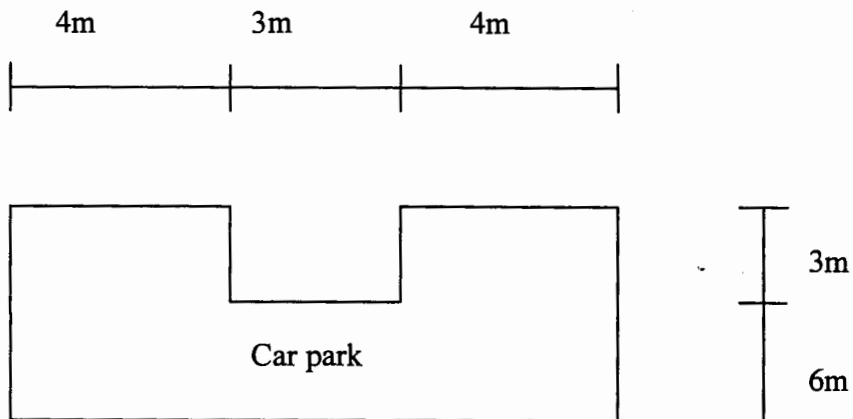
58

8. What is the area for the soil stripping in the following building site?



- a.  $37\text{m}^2$
- b.  $56\text{m}^2$
- c.  $38\text{m}^2$
- d.  $52\text{m}^2$

9. What is the area of the paving for the car park?



- a.  $90\text{m}^2$
- b.  $72\text{m}^2$
- c.  $99\text{m}^2$
- d.  $97\text{m}^2$

59

10. Which of the following must a dpm not be?
- Impermeable to water
  - Tough enough to remain undamaged when laying the concrete slab
  - Continuous with the dpc in adjoining walls
  - Permeable to water

### QUESTION TWO

With reference to the attached building plan

- Examine this plan as an EHO and report on your findings [8]
- What type of roof does the plan have? [2]
- Calculate the area of the ceiling for bedroom 1 and bedroom 2. [2]
- In scrutinizing a building plan generally what do you look for [6]
- List and describe at least four important documents necessary for a building project to commence [2]

### QUESTION THREE

- Outline the tendering process in a building construction project [10]
- What are the three main types of contracts that a client may opt for in a building construction project? Discuss advantages and disadvantages of each type. [10]

### QUESTION FOUR

- Cement plays the most important role in building construction industry. Write a few notes on this building material. Discuss at least five points. [10]
- Of the following scales 1:1, 1: 2, 1: 5, 1: 10, 1: 20, 1: 50, 1:100, 1:200, 1:500, 1:2500, 1:5000, and 1:1000 state which one is used for
  - Block plan [2]
  - Showing details [2]
  - Working drawings [2]
- Explain what is meant by the scale 1: 100? [2]
- Calculate the width of a strip foundation when the load bearing wall is transmitting a load of 25kn/m<sup>2</sup> and the self bearing capacity of the subsoil is 75kn/ m<sup>2</sup> [2]

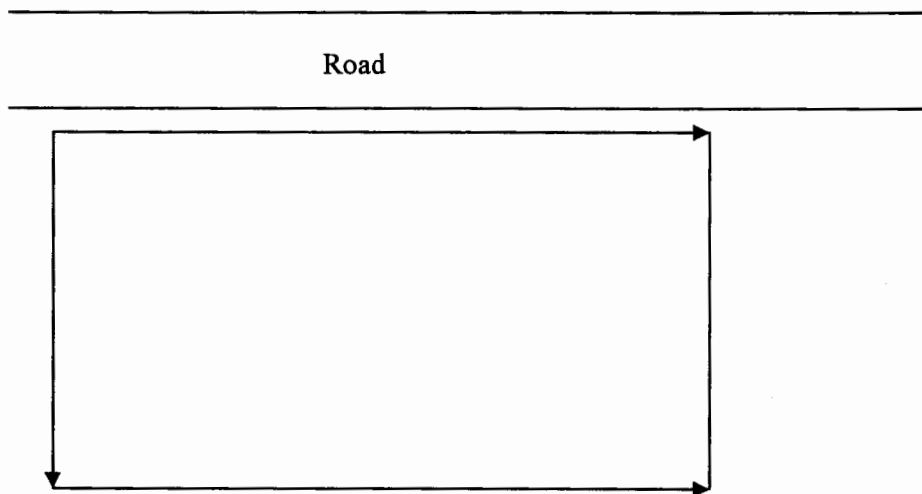
60

**QUESTION FIVE**

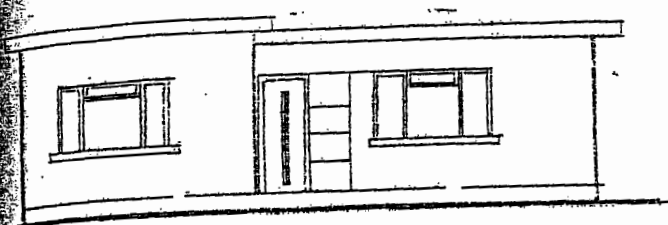
A building is principally designed to cope with at least five key climatic elements. Name and discuss how each of these elements can contribute to poor indoor climatic conditions affecting comfort, health and efficiency. [20]

**QUESTION SIX**

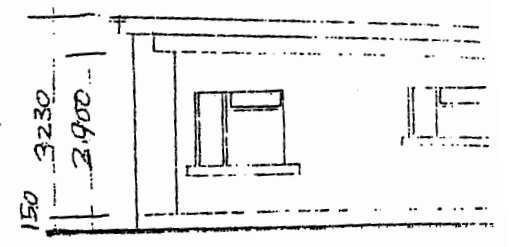
- A) Outline four important issues to consider when dealing with contracts [5]
- B) Sketch out the work triangle in a normal kitchen and state why it called such [5]
- C) The following represents an incomplete building site lay out. Complete it in a separate sketch showing all the important features that normally should be in a building site. [10]



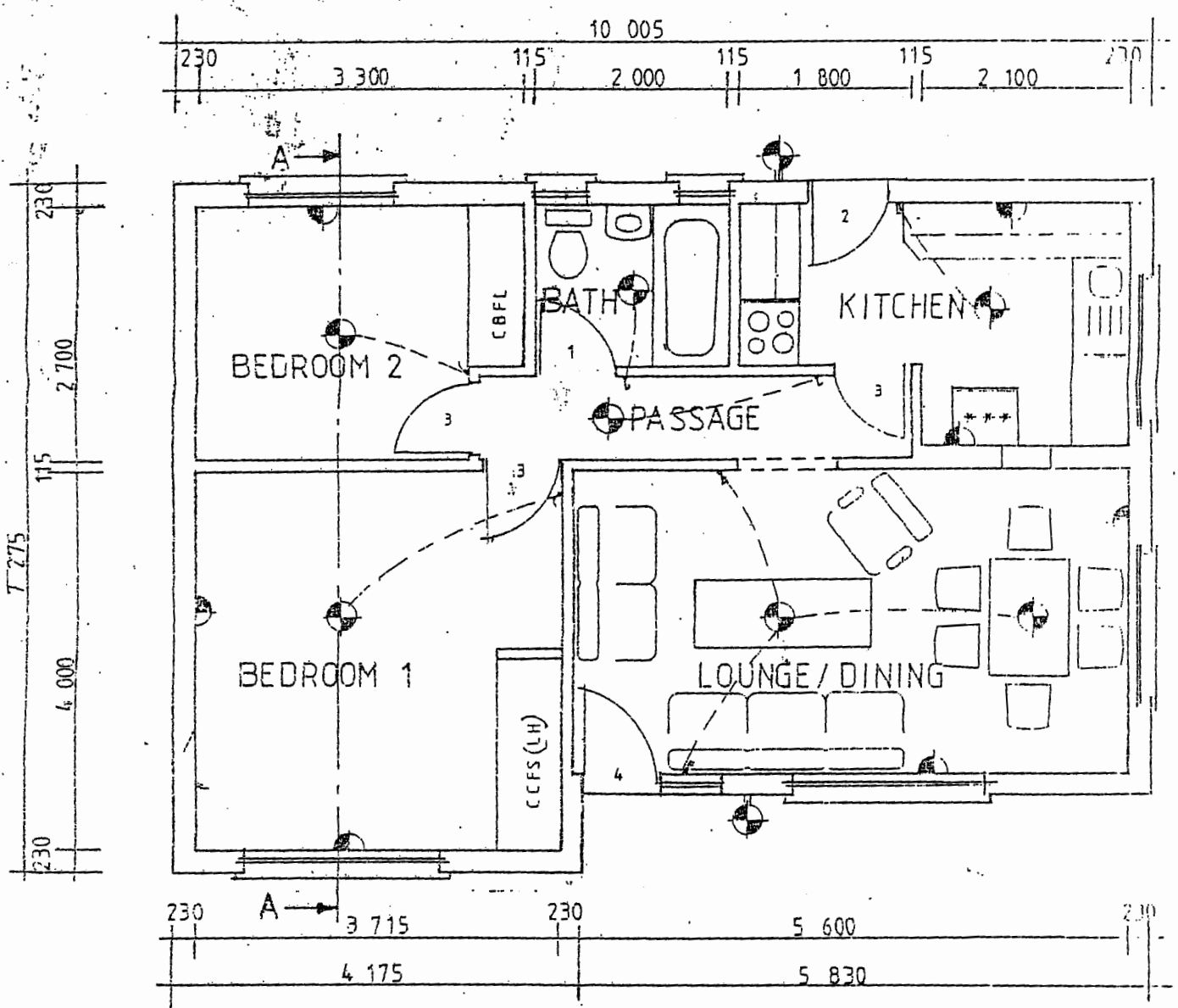
61



FRONT ELEVATION



SIDE ELEVATION



FLOOR PLAN

