

UNIVERSITY OF SWAZILAND

**Faculty of Health Sciences
Department of Environmental Health sciences**

DIPLOMA IN ENVIRONMENTAL HEALTH SCIENCES

FINAL EXAMINATION PAPER MAY 2009

**TITLE OF PAPER : BUILDING CONSTRUCTION
TECHNOLOGY II**

COURSE CODE : EHS 211

DURATION : 2 HOURS

MARKS : 75

INSTRUCTIONS : ANSWER ANY THREE QUESTIONS

: EACH QUESTION CARRIES 25 MARKS

**: NO PAPER SHOULD BE BROUGHT INTO
OR 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

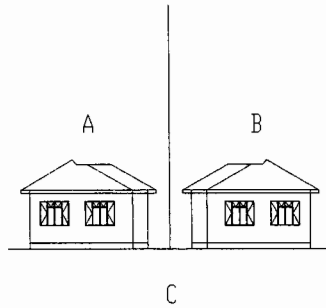
A) Given the following figure state what command you would use to complete it in AutoCAD [5]



B) State the first thing you do after opening the AutoCAD programme [5]

C) Explain how AutoCAD tool bars are activated and deactivated [5]

D) Given the house in A explain how you can come up with the second house B using AutoCAD commands [5]



E) How do you go about checking angle dimensions and ordinary dimensions using AutoCAD [5]

QUESTION TWO

(A) Using the **drawing A** answer the following questions.

1. If the scale is 1:50 what would be the size of :
a, b, c. [3]
2. In a scale of 1:150 what would be the size of: a, b, c. [3]
3. What is the name of the dimension lines being used in the drawing? [2]
4. What view does this drawing represent? [1]
5. For a habitable room what is the minimum size for b [2]
6. What are the minimum dimensions for the window area [2]

(B) Using the site plan in drawing B answer the following questions:

1. What is the scale used by the architect in this site plan? [2]
2. What is the total area of this plot in m^2 ? [2]

3. How far from the house is the septic tank and what is the most important thing about location of a septic tank? [2]
4. Is the access placed at the correct position in terms of the building act? Please explain [2]
5. In a separate piece of paper show what else would be there to complete this drawing layout [2]
6. In just one paragraph describe PTN 876 [2]

QUESTION THREE

This question is a TRUE and FALSE answer question: choose one

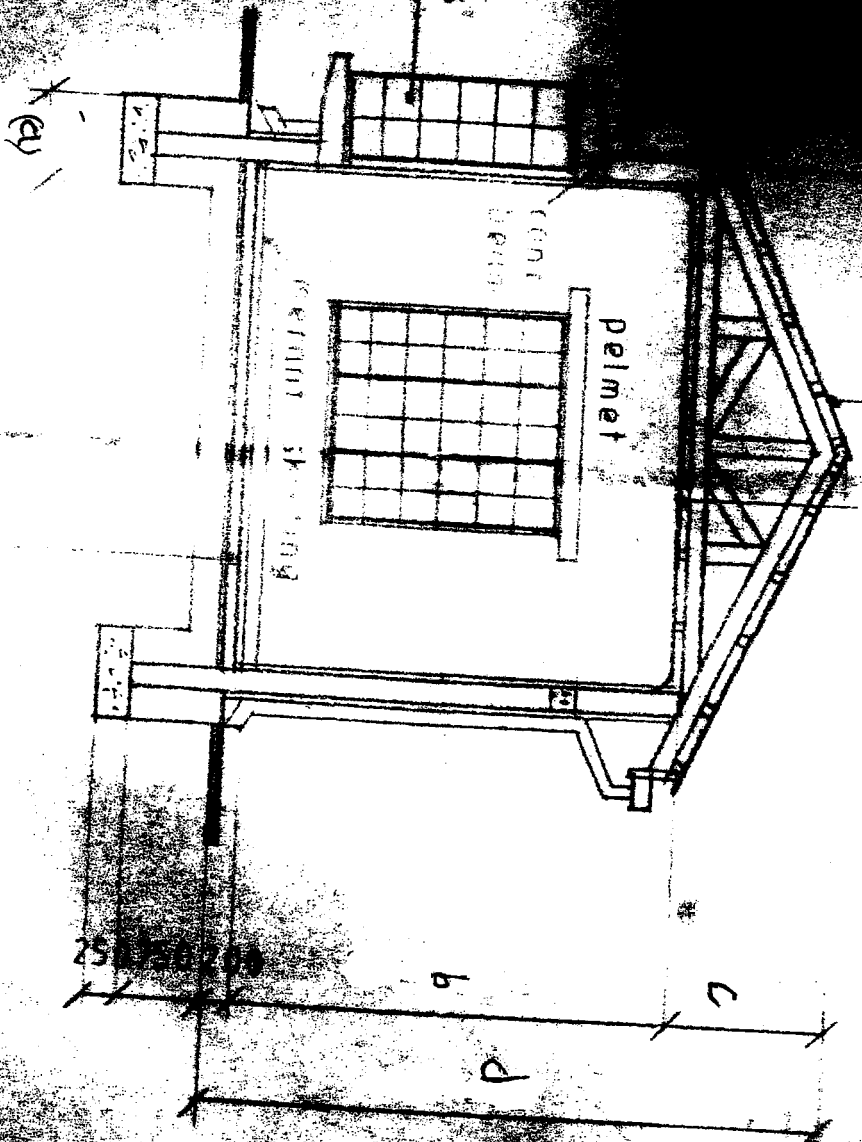
1. Deviations from approved plans are not permitted without obtaining amended plan approval.
2. Vehicular access is not important in drainage layout
3. All brickwork is to be laid in mortar comprising 5 part cement to 2 parts clean pit sand with low clay content
4. Finished floor level should be a minimum of 150 below highest point of natural ground level adjacent to the building.
5. Walls in footings are to be centred on the strip foundation
6. The minimum size of bedroom is 3000 by 3000, however sizes above the stated are acceptable
7. Water closet (WC)-minimum dimensions 750 x 1400
8. Bathroom minimum 7.7m² with least dimension of 1520
9. Toilets should be positioned on plan so as to open onto passages
10. Size of a foundation (width) e.g. is based on two factors 1) load bearing transmitted and, 2) the bearing capacity of the subsoil
11. Components drawing. usually done for storey building & staircases, steelworks and structural layout
12. Elevations in a drawing plan are used to provide vertical views through the building
13. It is pointless to train EHOs in building construction
14. minimum room height from finished ceiling or if there is no ceiling, to underside or lowest part of roof should be 2400
15. the north point is part of the ground floor plan
16. a circle is described by its diameter
17. the recognized abbreviation in building construction VP stands for ventilation part.
18. Ortho in AutoCAD helps in drawing straight horizontal and vertical lines
19. the traditional method of producing working drawings is by computer with CAD soft ware
20. a non load bearing wall can be defined as walls carrying their own weight
21. an architect will not make the difference between a sketch and a drawing
22. block plans and site plans are all classified as location drawings
23. a ventilation pipe must be provided at the centre of the foul drainage system
24. a suitable scale for drawing a section is 1:1
25. Bill of quantities enables preparation of a tender sum

QUESTION FOUR

- (a) Write a few notes on the use of scale in working drawings giving examples of appropriate scales for the component parts of working drawings [5]
- (b) Outline the health and safety standards applicable in a building site [5]
- (c) Outline the things you look for in interpreting, approving, and scrutinizing drawings and building plans [10]
- (d) 2mm is the size of a roads drive leading to a building site. On a scale 1:1000, what is the size of the road in meters? [1]
- (e) What is the volume of a mineral which presents with a density of 7.5 g/m^3 and a mass of 375? [1]
- (f) Calculate the width of a strip foundation when the load bearing wall is transmitting a load of 25kn/m and the self bearing capacity of the subsoil is 75kn/m² [2]
- (g) Specific gravity= $\frac{\text{weight in air}}{\text{weight in air}-\text{weight in water}}$. Now for a mineral whose specific gravity is 1.07, and its weight on air is 240.what is the mineral weight in water?[1]
-

DRAWING: A

Windows designed
by owner



SECTION 00.A-A
Scale

building line

40 mm
100 mm
details on 250
on well compacted fill

ALL necessary details on building could be engaged material

DRAWING: B

