

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

**DIPLOMA IN ENVIRONMENTAL HEALTH
SCIENCES**
MAIN EXAMINATION PAPER JULY 2010

TITLE OF PAPER : BUILDING CONSTRUCTION
TECHNOLOGY II

COURSE CODE : EHS 211

DURATION : 2 HOURS

TOTAL MARKS : 100

INSTRUCTIONS : ANSWER FOUR QUESTIONS

: QUESTION ONE IS **COMPULSORY**

: 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

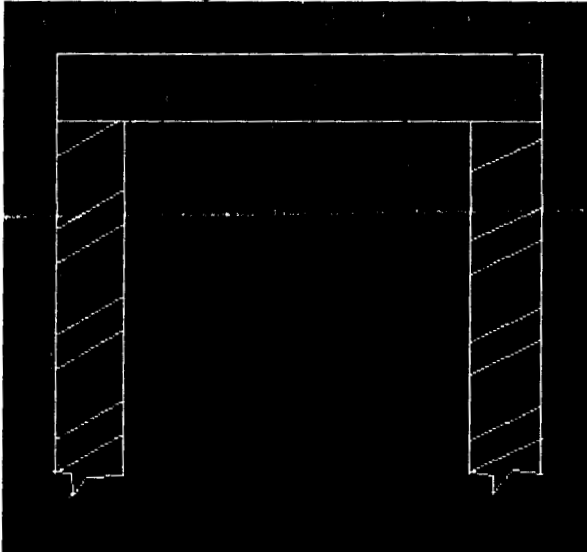
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EHS 211P May 2011-Building Construction II

QUESTION ONE

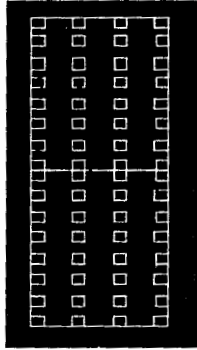
The statements listed below are either true or false. For each statement indicate whether you believe it is true or false.

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. The drawing below is a Built in beam



6. The minimum size of bedroom is 3000 by 3000, however sizes above the stated are acceptable
7. Water closet (WC)-minimum dimensions is 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. The best way to draw the sketch below is by combining offset and array in a computer graphics program.



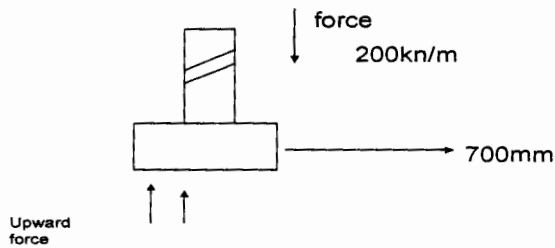
19. the traditional method of producing working drawings is by computer with CAD soft ware
20. a non load bearing wall can be defined as walls carrying their own weight
21. an architect will not make the difference between a sketch and a drawing
22. block plans and site plans are all classified as location drawings
23. The Draw tool bar cannot be executed without the modify toolbar in AutoCAD.
24. a suitable scale for drawing a section is 1:1
25. Bill of quantities enables preparation of a tender sum

QUESTION TWO

- A) A bathroom must have a minimum area of 3.7m^2 with the least dimension of 1520. Give the dimension of the other side? [5]
- B) AutoCAD uses various cursor modes in trying to execute certain functions. Draw sketches of four of these and indicate the use and meaning thereof. [5]
- C) Draw a sketch to illustrate the point “walls in footings are to be centred on the strip foundation” [10]
- D) Using a sketch and imaginary dimensions illustrate the following concerning sizes of foundations: $W=TW+2T$ [5]

QUESTION THREE

- a) Outline planning steps followed in government construction projects [5]
- b) Given plans for scrutiny what exactly do you look for? [5]
- c) List all the types of architect’s drawings you know, their utility and appropriate scales thereof [5]
- d) Given the following figure representing a house exerting a force of 200kn/m^2 calculate for the soil bearing capacity of the soil [6]



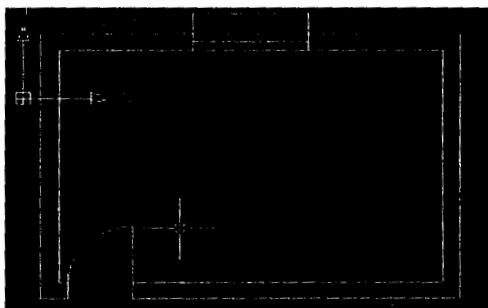
e) 10mm is the size of a roads driveway leading to a building site. On a scale 1:1000 what is the size of the road? [4]

f) Give the appropriate titles to indicate the differences between the following CAD commands [3]

| | |
|-------------------|----------------------------------------------------|
| LINES and CIRCLES | ERASE, COPY, MIRROR, OFFSET, MOVE, ROTATE, STRETCH |
|-------------------|----------------------------------------------------|

QUESTION FOUR

(a) A. Given the following one bedroom house plan, lean-to roof outline the CAD sequence followed to come up with the elevations, sections and roof thereof. Dimension 2000*1000, door 850, window 1500, roof pitch 10° [10]



b) Name these two and explain differences thereof [2]



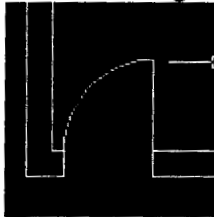
c) Name these two and explain the difference thereof [2]



d) Name these two elements in AutoCAD and explain the utility thereof [2]



e). Given the following representing a door dimension 850. Outline how you go about drawing this in a floor plan. [4]



f) Which five CAD commands require that you have the object first before executing it? [5]

QUESTION FIVE

a) Outline the work of an architect in a building project and who normally supports architects in a project [2]

b) Outline the

1. Erase command sequence in AutoCAD [1]
2. Offset command sequence in AutoCAD [1]
3. Trim command sequence in AutoCAD [1]

c) State three functions of a Gantt Chart at a construction site [3]

d) Outline the precise planning and building application requirements and procedures in a municipality. [7]

e) Write notes based on the following figures and state the significance thereof in building design [10]

