

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

**BSC IN ENVIRONMENTAL HEALTH
SCIENCE**
MAIN EXAMINATION PAPER DEC 2014

TITLE OF PAPER : BUILDING ONSTRUCTION
TECHNOLOGY II

COURSE CODE : EHM 305

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:

COMPULSORY MULTIPLE CHOICE QUESTION.

Choose one answer for each [1 mark per point]

1. What should you pay attention to when learning AutoCAD?
 - a. The Command Line
 - b. The Status Bar
 - c. The Title Bar
 - d. Tool Icons

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. Objects are rotated around the
 - a. Base point
 - b. Bottom right of the object
 - c. Centre of the object
 - d. Origin

4. The distances of a chamfer are:
 - a. Always different
 - b. Always the same
 - c. Sometimes different
 - d. Never the same

5. Which of the following factors is **not** true in trying to determine features of a building?
 - a. Architectural styles
 - b. Availability of building material
 - c. Real estates
 - d. Building standards

6. Which of the following features is **not true** for the sub contract?
 - a. client has the competence and resources to plan and administer the project
 - b. Client retains responsibility for both design and construction
 - c. A contract document developed by contractor and not available before contract is awarded.
 - d. Can give lower building costs and complete control construction

7. The architects drawing in building construction refers to
 - a. Gantch charts
 - b. Small scale plans and elevations
 - c. Bill of quantities
 - d. All of the above

8. Mensuration in building construction refers to
 - a. Building life cycle
 - b. A type of planning
 - c. Calculations
 - d. Design

- 9 Which is not a valid Zoom option?
 - a. Zoom extents
 - b. Zoom previous
 - c. Zoom next
 - d. Zoom window

10. Plan index refers to
 - a. Overall appearance of building
 - b. Design notes
 - c. Graphical information
 - d. Small scale plans giving general arrangements

11. For a balanced presentation of design drawings the following is necessary
 - a. Exact position of aggregate.
 - b. Façade details
 - c. Project details
 - d. None of the above

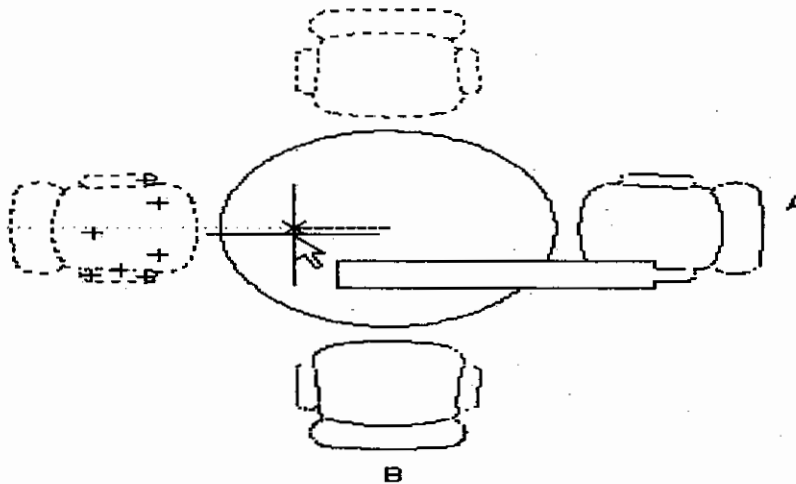
The statements listed below are either true or false. For each statement please indicate whether it is true or false

12. The French drain and the building line should be sited from the boundary line same distance.
13. In the absence of public sewer lines, on site treatment of sewage must be provided by means of soak away.
14. In terms of lighting the full lighting details must be provided on the plan
15. Vehicular access is not necessary for a two piped drainage system.
16. Compared to the Townships Engineer, the Environmental Health Officer has no right to defer drawing plans
17. The minimum scale for working drawings is 1:20
18. $1\text{km}=100\ 000\text{cm}$
19. Symbols in working drawings should be drawn to scale and be consistent throughout the drawing.

20. Running dimensioning lines in working drawings can present themselves both as closed arrow and open arrow
21. 0.5m is the width of a strip foundation when the load bearing wall is transmitting a load of 50kn/m and the self bearing capacity of the subsoil is 85kn/m²
22. Size of a foundation (width) is based on three factors namely load transmitted, the bearing capacity of the subsoil and compressive strength.
23. The concrete mix for foundations is 1:3:6 or 1:4:5.
24. To execute modify commands in AutoCAD you must simply pick on the command and create the object.
25. The traditional method for producing working drawings is by using computer with CAD software

QUESTION TWO

- a. List and describe at least four important documents necessary for a building project to commence [4]
- b. 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. [9]
- c. Describe the role of an Environmental Officer in Building Construction [3]
- d. Explain the significance of the tendering process in a building construction project [4]
- e. AutoCAD uses various cursor modes in trying to execute certain functions. Draw sketches of four of these and indicate the use and meaning thereof. [4]
- f. Give appropriate CAD commands to get the chair below from point A to point B [1]

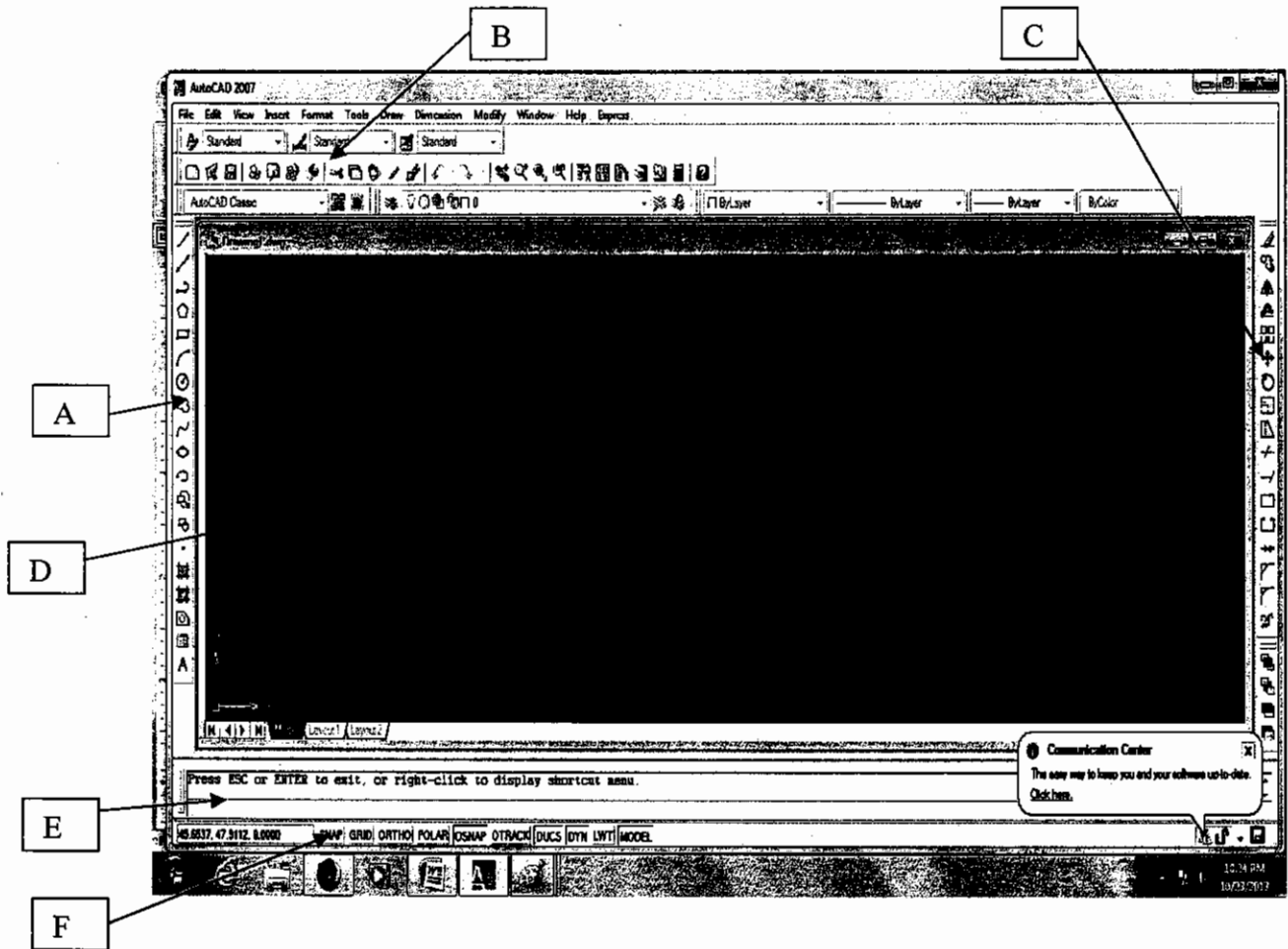


QUESTION THREE

- a) Discuss six issues that may go wrong at a building construction site if health and safety are not properly considered [12]
- b) State three important precautions to look for concerning toilets during scrutinization of building plans [3]
- c) Scale is very important in working drawings. Why is that the case? [2]
- d) Concerning sections in construction drawings raise four points to explain their functions. [4]
- e) Illustrate the following lines and line work used in a drawing office when producing working drawings:
 - i. outlines [1]
 - ii. hidden detail lines [1]
 - iii. drain and pipe lines [1]
 - iv. break lines [1]

QUESTION FOUR

a) Label the following screen components in AutoCad [12]



b) Describe Class A to Class F Buildings in terms of Section 3 (1) of the Building and Housing Act, No 34, of 1968. [12]

c) Differentiate between the copy and mirror command in AutoCAD [1]

QUESTION FIVE

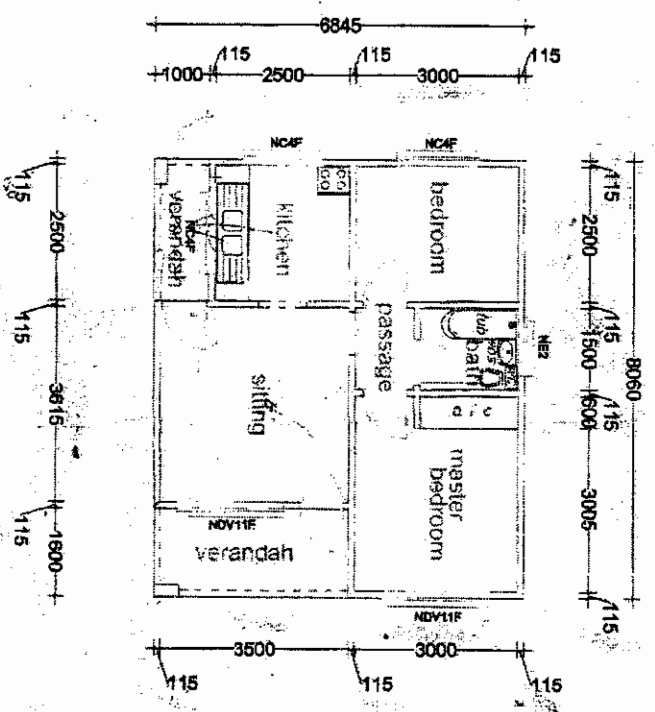
a) Why is project planning and scheduling important? Raise at least five points [5]

b) During the development of a WBS there are four types of links. State the four types of links used. [8]

c) Construction projects have several actors. List them [2]

- d) **This question refers to the drawing overleaf labelled Figure A. This drawing has been presented to the office of the EHO for scrutiny. After two days scrutinizing the EHO defers the drawing. What could be the reason for deferment?** **[10]**
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Fig A.



scale 1:100

