



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
DIPLOMA IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2007/2008

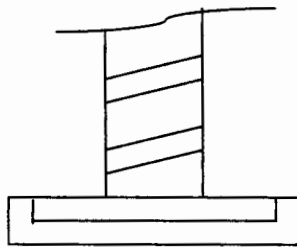
TITLE OF PAPER	:	BUILDING CONSTRUCTION TECHNOLOGY I
COURSE CODE	:	EHS 210
DURATION	:	2 HOURS
MARKS	:	75
INSTRUCTIONS	:	READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
	:	ANSWER THREE (3) QUESTIONS - QUESTION ONE (1) IS COMPULSORY
	:	EACH QUESTION CARRIES 25 MARKS.
	:	WRITE NEATLY & CLEARLY
	:	NO PAPER SHOULD 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.

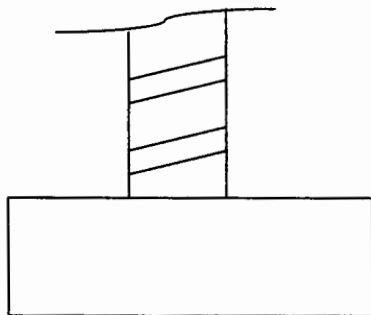
QUESTION ONE

COMPULSORY MULTIPLE CHOICE QUESTION.
Choose one answer for each [1 marks per point]

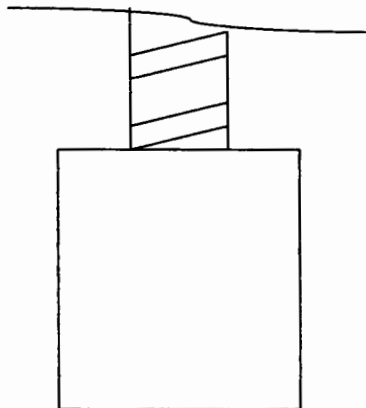
1. Which sketch illustrates an isolated pad foundation?



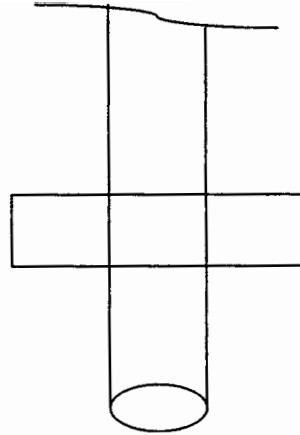
a.



b.



c.

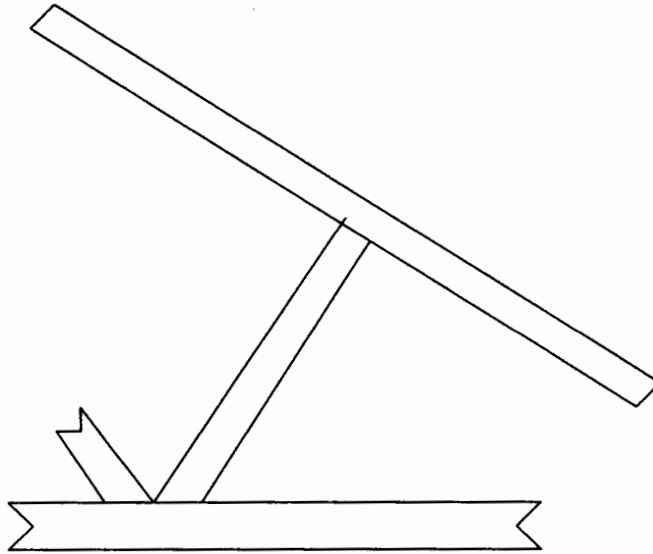


d.

2. When designing and selecting a foundation it is necessary to:
 - a. Know the water table
 - b. Calculate the loads on the foundation and determine the nature of subsoil and ground water level, changes and the possibility of the ground soil movement.
 - c. Calculate the number of walling unit plus the roof and its covering
 - d. Know the type of cement to be used and the amount of salt in the soil.
3. The basic objective of site investigation is:
 - a. To collect systematically and record all necessary data which will be needed or help in the design and construction process of the proposed work.
 - b. To give reference points for setting out the proposed work
 - c. To obtain subsoil samples for identification, classification and ascertaining the subsoil characteristics
 - d. To determine the suitability of the site for the proposed project
4. 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
5. 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
6. 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
7. 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
8. 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
9. 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
10. The following constitutes conditions that may render a soil unsuitable for foundations:
- a. Natural low bearing capacity of soil
 - b. Low water table
 - c. Presence of layers of highly incompressible subsoil such as peat
 - d. Recently placed filling material which have been sufficiently consolidated
11. The dangers of import building materials are that:
- a. They always carry health risks
 - b. They may be of suspect properties and performance in local conditions
 - c. They always lead to problems with moisture and moulds
 - d. They are always expensive to buy
12. Water used for concrete making should be:
- a. A bit salty to enhance better bonding
 - b. Be same as for drinking
 - c. Turbid for quick mixing
 - d. Hot
13. On undulating site, which type of foundation could be adopted?
- a. Wide strip foundation
 - b. Trench fill foundation
 - c. Stepped strip foundation
 - d. Wide strip foundation

14.



The above structural member represents a

- a. cantilever beam
- b. vertical strut subjected to tensile forces
- c. strut subjected to compression forces
- d. tie subjected to tension forces

15. The interface between the natural and built environment is

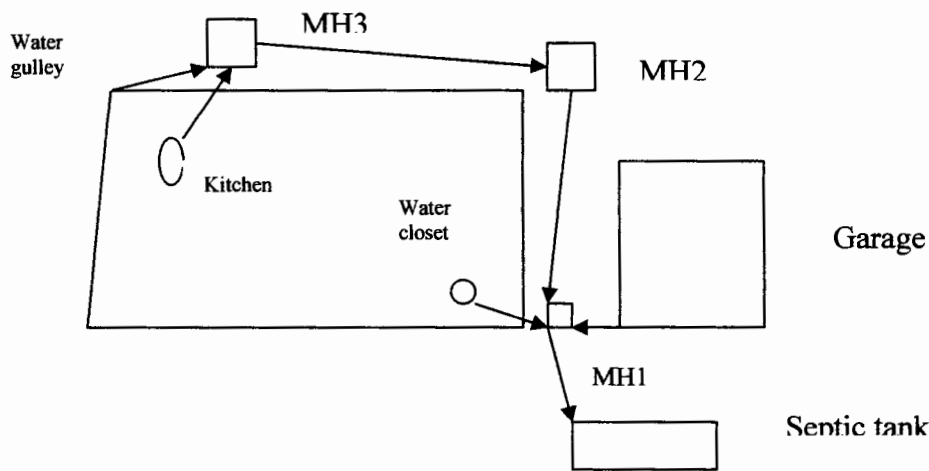
- a. not important
- b. helps determine how to build a strut
- c. is important for internal furnishing
- d. symbiotic

16. Which bond is recommended for block work?

- a. English bond
- b. Stretcher bond
- c. Flemish bond
- d. Quarter bond

17. The sketch below illustrates which type of a drainage system

- a. Partially separate system
- b. Combined system
- c. Separate system
- d. Subsoil drainage system



18. In a drainage system what provides a means for collecting and controlling the seepage of rainwater into surrounding granular subsoil
 - a. Inspection chamber
 - b. Manhole
 - c. Sewer
 - d. Soak away
19. The subject Building Construction Technology is divided into
 - a. Substructure and superstructure
 - b. Modern and outdated construction methods
 - c. Timber and concrete
 - d. Theory, quantity surveying and drawings
20. In order to make a good contribution to the construction sector one needs
 - a. training, practical competence and experience
 - b. to be a good EHO
 - c. to be a good painter
 - d. a lot of experience only
21. Adaptability to changing housing needs means
 - a. getting rich
 - b. expanding the house
 - c. recycling
 - d. LCA
22. Environmental considerations in the building construction sector
 - a. Require complete removal of top soil and trees before putting up a building
 - b. Favour blending of natural and built environment
 - c. Is not that important as long as planning requirements are met
 - d. Cannot delay commencement of building construction activities

long period of time. Give an example of at least one building material to demonstrate your understanding of this methodology [15]

B) Write a few notes on the building material called 'AGGREGATE' then complete the following matrix related to its particle sizes [5]

NAME	SIZE OF PARTICLES
Coarse gravel	60.0-20.0mm
Fine gravels	
Coarse sand	2.0-0.6mm
	0.2-0.06mm
Course silt	0.06-0.02mm
	0.006-0.002mm
clay	

C) Outline four important issues to consider when dealing with contracts [5]
