



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.
Tel: +254 (0)799529958, +254 (0)799529959, +254 (0)712524293
Website: www.must.ac.ke Email: info@must.ac.ke

UNIVERSITY EXAMINATION

CONSTRUCTION TECHNOLOGY

ECV 2101

DIPLOMA IN CONSTRUCTION MANAGEMENT

DIPLOMA IN CIVIL ENGINEERING

DIPLOMA IN BUILDING TECHNICIAN

SECTION A [40 Marks]

1. Describe the following in the building process
 - Site clearing (2marks)
 - Building line (2marks)
 - Base line (2marks)
2. Explain the term timbering (2marks)
3. State **four** functional requirements of a wall in building construction (2marks)
4. List six preliminary activities (3marks)
5. Outline **four** functional requirements of timber ground floor (2marks)
6. Explain the difference between residential and commercial occupancy classifications. (4marks)
7. Outline **five** characteristics of dump proof course. (5marks)
8. Design and sketch a pictorial square pad foundation using the following data
 - Soil bearing capacity 150kn/m²
 - Column load 200KN
 - Depth of column base 300mm (6marks)

9. State any **five** factors that may influence the method of excavation of foundation trenches (5marks)

10. With the aid of a sketch describe the sump method of dewatering (5marks)

SECTION B [60MKS]

11. State **three** causes of foundation failure (3marks)

b) The figure below shows a profile of a sloping site. Sketch and label a suitable foundation for a domestic house (8marks)

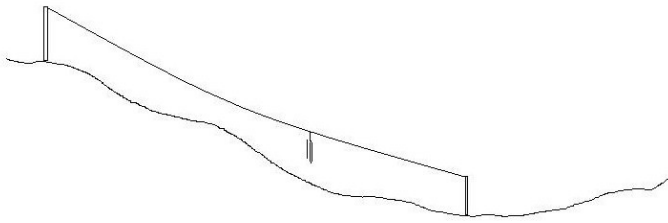


Fig.1

c) Calculate the minimum plan area of a pad foundation that carries a column supporting a total load of 250 kN when the load bearing capacity is 200 kN/m². (3marks)

d) Describe foundation under these headings (6marks)

Shallow foundation

Deep foundation

12. a) With the aid of sketches, describe the 3:4:5 method of setting out a building (10marks)

b) Define dewatering and discuss **two** methods used for dewatering in industrial applications. (6marks)

c) Describe **four** factors that influence the selection of a dewatering technique for a specific application (4marks)

13. Sketch an elevation of timber casement window to show (6marks)

Vent light

Fixed light

Head

Casement sash

b) State **five** effects of dampness in a building and **discuss** the importance of damp proofing (10marks)

c) Outline **four** functional requirements of windows (4marks)

14. Discuss the considerations and challenges associated with optimizing building orientation and ventilation in urban environments. (10marks)
- b) Explain the functions and functional requirements of roofs (8marks)
- c) Outline two causes of cracking in walls (2marks)