



ZIMBABWE

MINISTRY OF HIGHER AND TERTIARY EDUCATION

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

ENVIRONMENTAL HEALTH

SUBJECT: Building Practice

PAPER NO: 399/S01

NOVEMBER 2011 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

Answer all questions from Section A and any four questions from Section B

This paper consists of 6 printed pages.

SECTION A

Answer ALL questions.

QUESTION 1

- a) State two ways of temporarily terminating walls. (2 marks)
- b) Draw a sketch to show sectional bond and collar joint. (2 marks)
- c) Identify four (4) rules of bonding. (4 marks)
- d) Write the following symbols/abbreviations in full:
 - i) I. E.
 - ii) R. W. P(2 marks)

QUESTION 2

- a) Why are the following operations carried out when doing building works?
 - i) Stacking bricks on edge (1 mark)
 - ii) Planting datum peg in concrete (1 mark)
 - iii) Watering clay bricks before laying them (1 mark)
 - iv) Joggling the mortar joint (1 mark)
 - v) Buttering the bricks. (1 mark)
- b) State at least two (2) tools under each of the classes below:
 - i) Alignment tools (2 marks)
 - ii) Pointing tools (2 marks)
 - iii) Mortar tools (2 marks)

QUESTION 3

- a) Identify four (4) qualities of a good foundation. (4 marks)
- b) State the difference between natural and artificial foundation. (2 marks)
- c) What are the two methods of safe guarding the trench sides from collapsing? (2 marks)
- d) Define bearing capacity in relation to soil/ground and bearing pressure. (2 marks)

QUESTION 4

- a) Identify four (4) materials for making drainage pipes. (4 marks)
- b) What is the minimum recommended height for placing d. p. c. from ground level? (1 mark)
- c) State six qualities of a good brick. (3 marks)
- d) Give one example of a test which can be done on brick to test for quality. (1 mark)

SECTION B

Answer ANY FOUR (4) questions.

QUESTION 5

- a)
 - i) Who designs building plans? (1 marks)
 - ii) What information is contained in a building plan? (2 marks)
 - iii) When setting a building on a site what consideration should one put into mind to avoid confrontation with the local authorities? (1 mark)
 - iv) Draw neat sketches to show a corner profile and junction profile. (6 marks)
- b) Explain the procedure of transferring the position of the building into the foundation trench. Use sketches in your explanation. (5 marks)

QUESTION 9

- a) Using the plan outlined below in Figure 2:
- Calculate the centre line distance of the building. (3 marks)
 - How many bricks are needed to construct the building from foundation footing to d.p.c. level? (3 marks)
 - Total number of bricks from d.p.c. to roof. (4 marks)
 - Volume of footing concrete. (2 marks)
 - Ventilation area for the whole building. (2 marks)
 - Lighting area needed for the building. (2 marks)

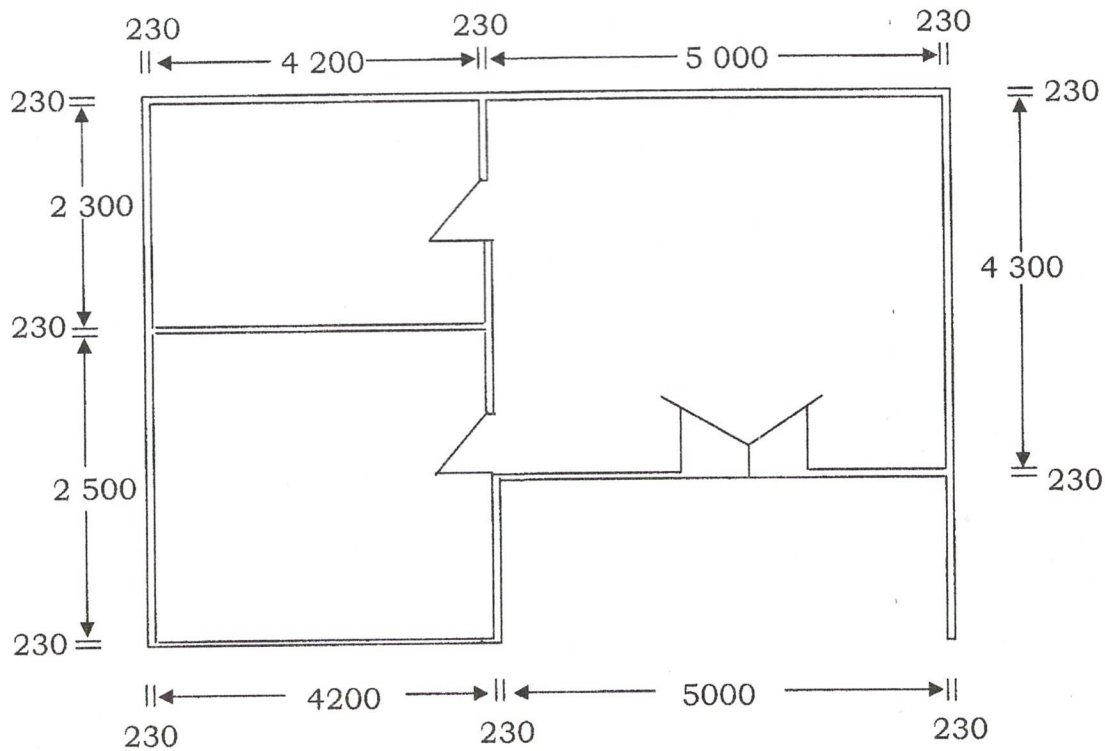


Figure 2.

NOTES:

- a) Height of substructure wall from footing 750mm.
- b) Footing thickness 300mm.
- c) Trench width 690mm.
- d) Roof type gable with 30° pitch.
- e) Height of wall to wall plate 3 000 mm.
- f) Single door 2 100 x 850.
- g) Door size 2 100 x 1 630mm (Double).
- h) Window ND1 = 1 500 x 1 245 mm.
- i) Window ND2 = 2 200 x 1 350 mm.
- j) Window ND3 = 2 500 x 1 350 mm.
- k) Rise = 1 200mm.
- l) Walls at gable ends are the only ones built above wall plate.
- m) 91 bricks per/m

...adm/jl