



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUILDING TECHNOLOGY

MODULE: Bonding Practice

PAPER NO: 308/24/M04

PAPER NO: 308/22/M04

PAPER NO: 308/25/M04

DURATION: 3 Hours

JUNE 2026 EXAMINATION

REQUIREMENTS

Answer Booklet, A4 Drawing paper, Scientific Calculator

INSTRUCTIONS TO CANDIDATES

1. Answer all questions in Section A 40 marks.
2. Answer any three (3) questions in Section B 60 marks.
3. All diagrams should be on drawing paper.

This paper consists of 3 printed pages.

Section A 40 marks

QUESTION 1

- a) Discuss three (3) purposes of bonding brickwork. (3 marks)
- b) Define the following types of bonds:
 - i) English bond (1 mark)
 - ii) English Garden wall bond (1 mark)

QUESTION 2

- a)
 - i) Explain the term, “broken bond”. (1 mark)
 - ii) Identify the cut bricks that can be used in bonding. (2 marks)
- b)
 - i) Describe two (2) methods that can be used for pinning a builder’s line. (2 marks)
 - ii) Use a neat sketch diagram to show a corner block. (2 marks)

QUESTION 3

- a) Outline five (5) essential skills for raising a corner (5 marks)
- b) Distinguish between jointing and pointing (2 marks)

QUESTION 4

- a) Examine four (4) functions of cladding (4 marks)
- b) Distinguish between plastering and rendering (2 marks)

QUESTION 5

- a) Explain the function of the following in paint:
 - i) Binder (1 mark)
 - ii) Pigments (1 mark)
 - iii) Solvents (1 mark)
- b)
 - i) Describe the term “sound insulation” (2 marks)
 - ii) Identify any three (3) sound insulation materials. (3 marks)

QUESTION 6

a) Define the following staircase terms:

- | | | |
|------|-------|----------|
| i) | Rise | (1 mark) |
| ii) | Going | (1 mark) |
| iii) | Tread | (1 mark) |

b) Describe the following brickwork terminology:

- | | | |
|-----|------------------|-----------|
| i) | Effective height | (2 marks) |
| ii) | Storey height | (2 marks) |

Section B

QUESTION 7

- a) A boundary wall is 14m long and 3,4m high from the foundation footing. Calculate:
- i) The total number of bricks used to build the wall if there are 104 bricks per m^2 . (3 marks)
 - ii) The volume of mortar if $0,02m^3$ was used to build $1m^2$ of brickwork. (3 marks)
- b) Draw a section through staircase and label any five (5) parts. (14 marks)

QUESTION 8

- a) Identify three (3) types of stones used for stonework. (3 marks)
- b) Use diagrams to illustrate the following stone work patterns:
- i) Random rubble (2 marks)
 - ii) Coursed ashlar (2 marks)
- c) List two (2) internal and two (2) external sources of sound in buildings. (4 marks)
- d) Explain the following sources of heat transfer:
- i) Conduction (1 mark)
 - ii) Radiation (1 mark)
 - iii) Convection (1 mark)
- e) Briefly describe the application of the following preservatives:
- i) Varnish (2 marks)
 - ii) Paint (2 marks)
 - iii) Lacquer and water repellent (2 marks)

QUESTION 9

- a) Use diagram to illustrate the bonded elevation of the following defined walls in stretcher bond:
- i) $4\frac{1}{2}$ bricks long by 4 courses high (4 marks)
 - ii) $4\frac{1}{4}$ bricks long by 4 courses high (4 marks)
 - iii) $4\frac{3}{4}$ bricks long by 4 courses high (4 marks)
- b) Draw a diagram showing a section through a fireplace. Label any four parts. (8 marks)

QUESTION 10

Using the plan of course outline in Fig 1. Produce:

- a) alternate plans of courses 1 and 2 in English Bond. (12 marks)
- b) Draw the elevation from direction A of the wall up to five (5) courses high. (8 marks)

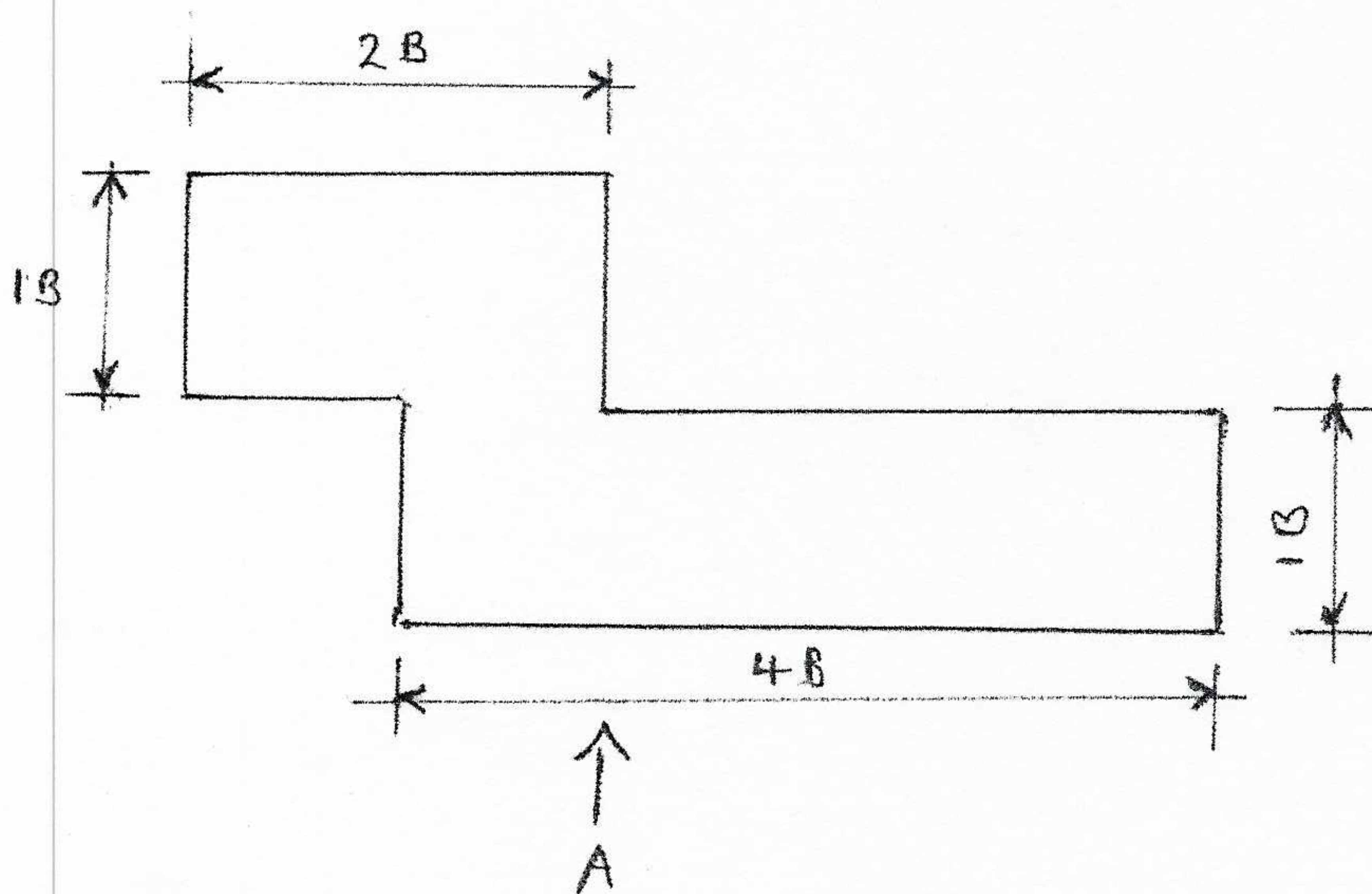


FIG 1.

(8 marks)

.../tez