



ZIMBABWE

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

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

ENGINEERING

**SUBJECT: Civil Engineering Drawing
& Construction**

PAPER NO: 313/18/S08

DURATION: 4 Hours

NOVEMBER/DECEMBER 2022 EXAMINATION

REQUIREMENTS

1. Draft set
2. Answer booklet

INSTRUCTIONS TO CANDIDATE

1. Section A - Answer 2 questions
2. Section B - Answer 2 questions

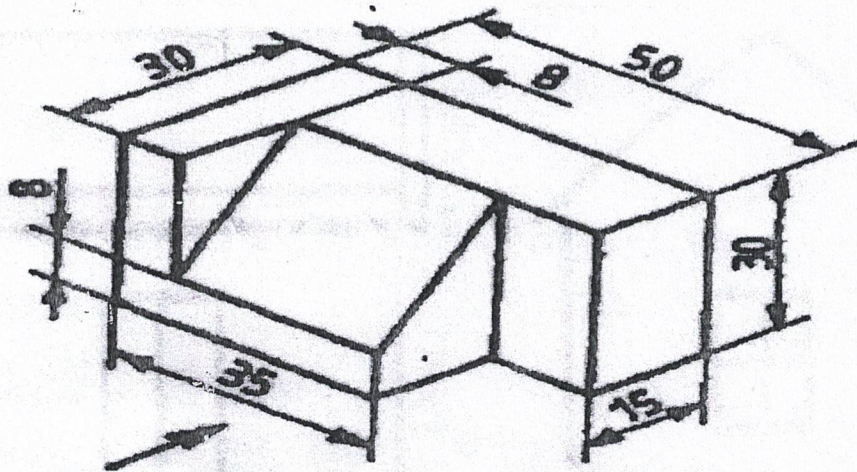
This paper consists of 4 printed pages.

SECTION A

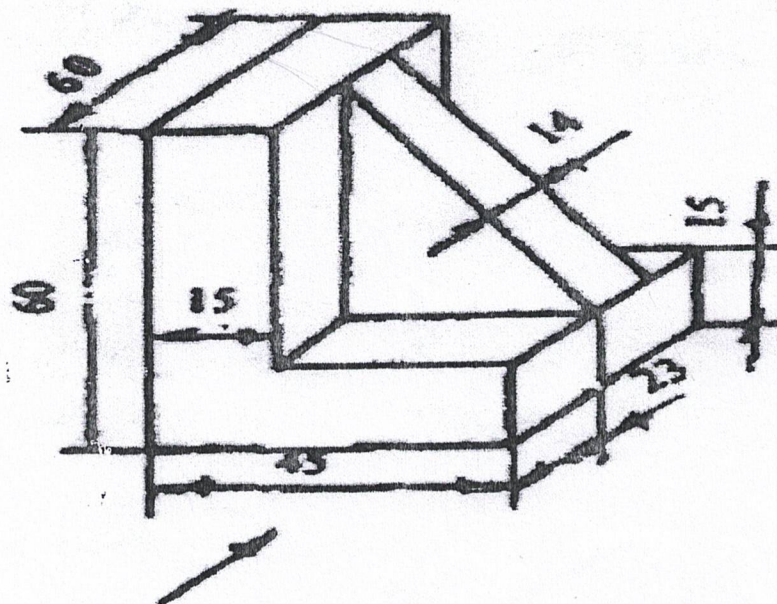
QUESTION 1

Produce the Orthographic projection for any one of the following elements in first angle projection. (25 marks)

a)

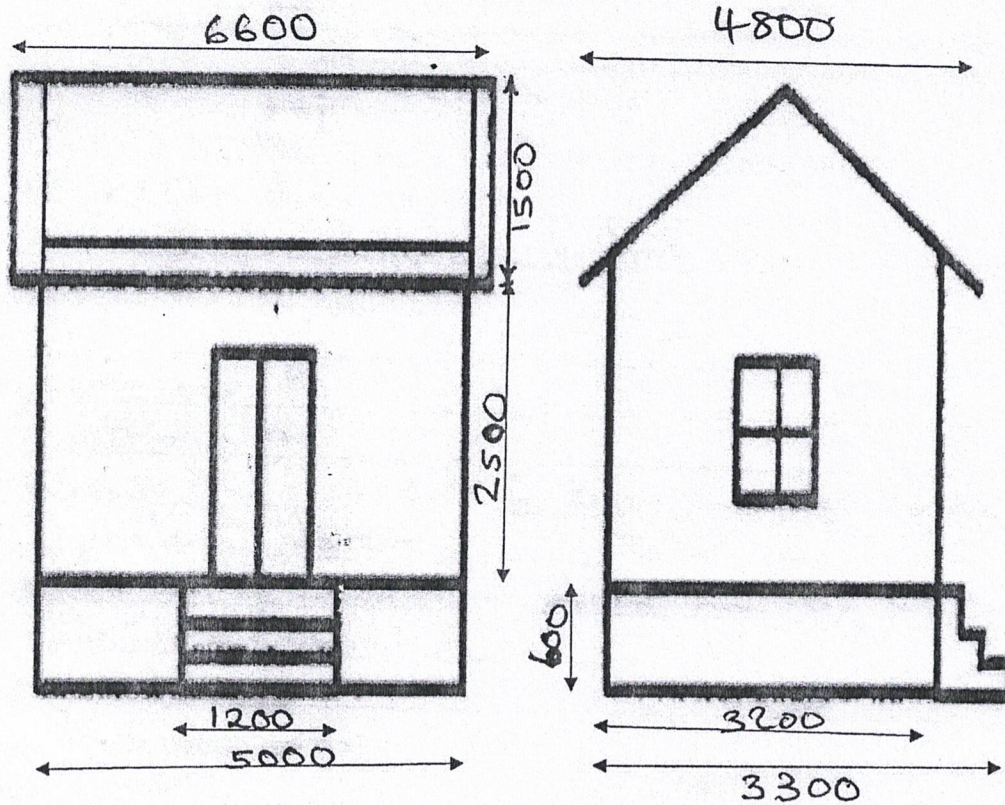


b)



QUESTION 2

Produce the 30° isometric projection for the following orthographic views.
(25 marks)



QUESTION 3

- a) Outline the relevant instruments required in engineering drawing (13 marks)
- b) By aid of diagram, illustrate the various parts of a circle (12 marks)

SECTION B

QUESTION 4

- a) Discuss the factors that determine site allocation for material storage (10 marks)
- b) With aid of Diagrams illustrate how the following materials are stored on site.
- i) Bricks (3 marks)
 - ii) Drainage pipes (4 marks)
 - iii) Timber (4 marks)
 - iv) Aggregates (4 marks)

QUESTION 5

- a) Draw and clearly label reinforced concrete raft with edge thickening (10 marks)
- b) Draw a detailed diagram of a roof truss and label clearly (10 marks)
- c) Draw a cavity wall (5 marks)

QUESTION 6

- a) Discuss the objective of site investigation (13 marks)
- b) Describe the ways to improve the efficiency of the construction site layout (12 marks)

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