



ZIMBABWE

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

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

MACHINESHOP ENGINEERING

MODULE: Engineering Drawing 2

**PAPER NO: 340/22/M04/2
340/24/M04/2**

DURATION: 3 Hours

NOVEMBER / DECEMBER 2025 EXAMINATION

REQUIREMENTS

1. A3 Drawing board
2. Drawing instruments
3. A3 drawing papers
4. HEXCO serialised cover page

INSTRUCTIONS TO CANDIDATE

1. Section A: Compulsory – 20 marks.
2. Section B: Attempt two (2) questions – 30 marks.
3. Section C: Compulsory – 50 marks.

This paper consists of 7 printed pages.

SECTION A

QUESTION 1

- 1.1 State the objects which can be developed by the following development method:
- a) Parallel line (1 mark)
 - b) Radial line (1 mark)
 - c) Triangulation (1 mark)
- 1.2 State the difference between cavalier and cabinet. (2 marks)
- 1.3 State two (2) factors which determine the type of fit required on a component. (2 marks)
- 1.4 State any three (3) factors to be considered when selecting a seam. (3 marks)
- 1.5 Draw a circle of a diameter 60mm in oblique with the receding lines at 45° to the horizontal. (6 marks)
- 1.6 List any four (4) details included in an Assembly drawing. (4 marks)

SECTION B

Attempt two (2) questions – (30 marks).

QUESTION 2

Fig Q2 shows an elevation and an incomplete plan of a truncated right square pyramid.

Draw full size:

- The given elevation. (2 marks)
- A complete plan of the truncated pyramid. (4 marks)
- The development of the truncated pyramid taking J – J as the seam. (9 marks)

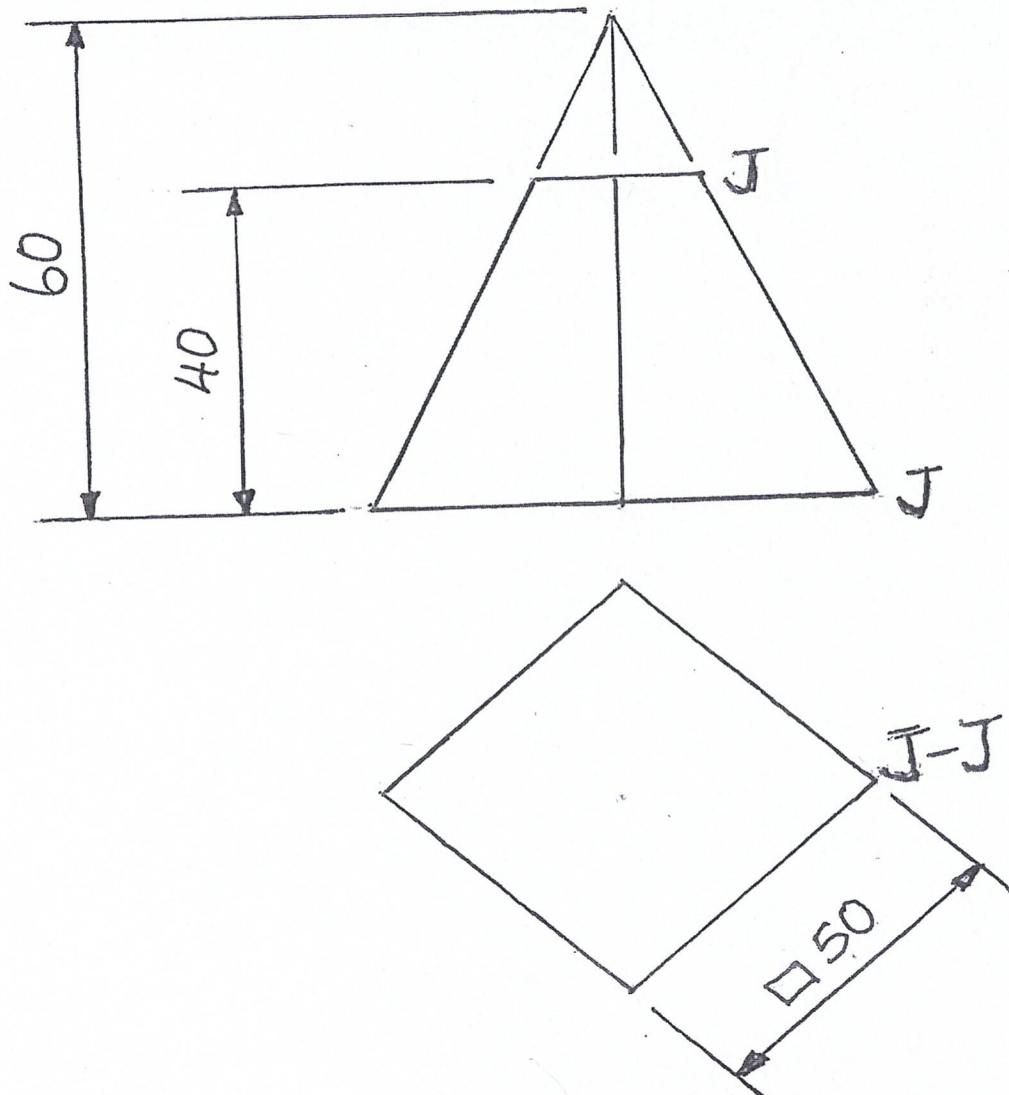
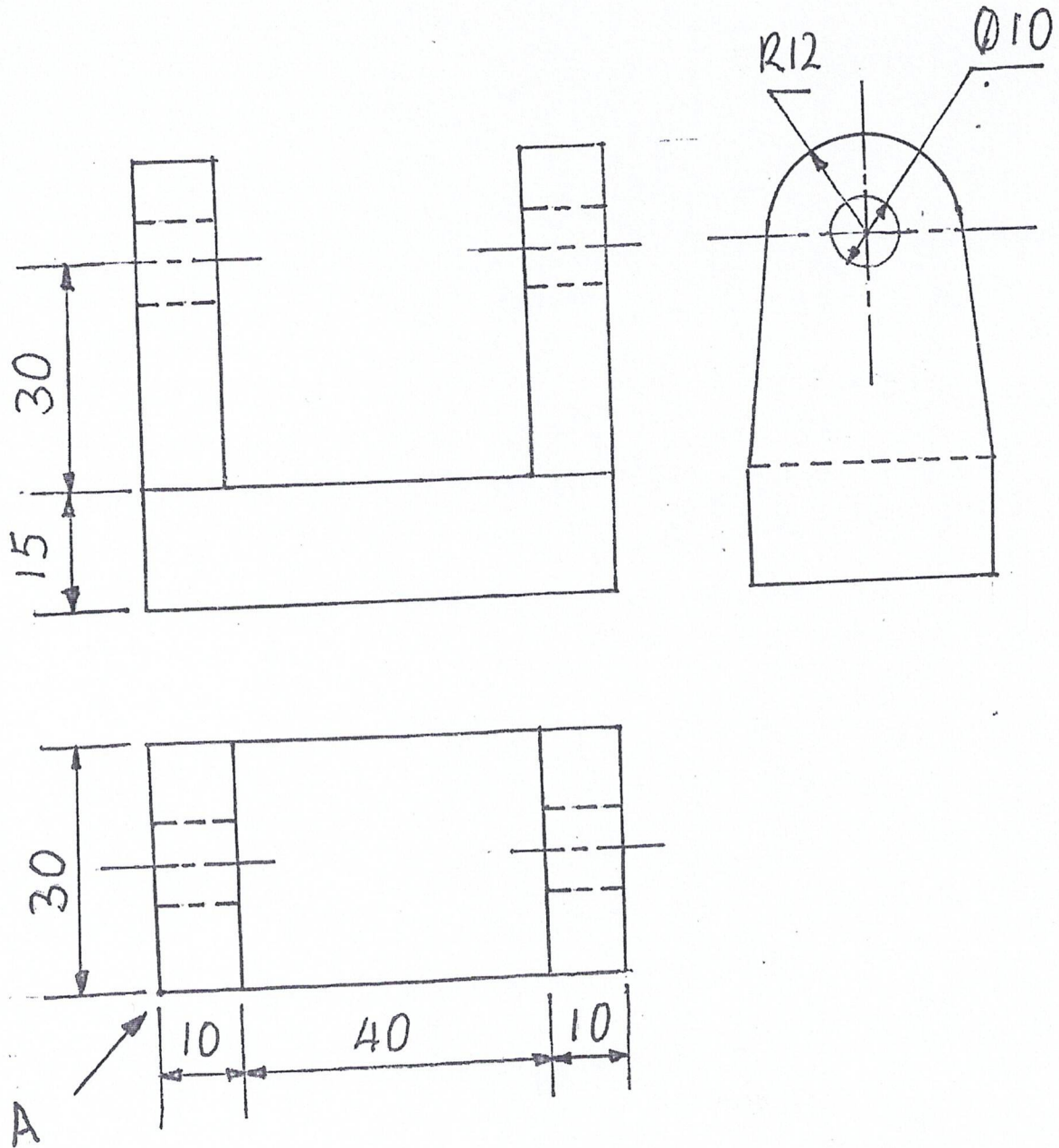


Fig Q2

QUESTION 3

Fig Q3 shows three (3) views of a bracket in First Angle Orthographic Projection. Draw the bracket in isometric projection taking point A as the lowest point. Use a scale of 2:1. (15 marks)

**Fig Q3**

QUESTION 4

a) Draw the symbols for the following geometric characteristics:

- | | | |
|------|------------------------|----------|
| i) | Profile of any surface | (1 mark) |
| ii) | Angularity | (1 mark) |
| iii) | Roundness | (1 mark) |
| iv) | Perpendicularity | (1 mark) |
| v) | Concentricity | (1 mark) |
| vi) | Total runout | (1 mark) |

b) Define the following terms:

- | | | |
|-----|-----------------|----------|
| i) | Lower deviation | (1 mark) |
| ii) | Allowance | (1 mark) |

c) Fig Q4c shows a specification of a metric external thread. Name the items labelled a to e. (5 marks)

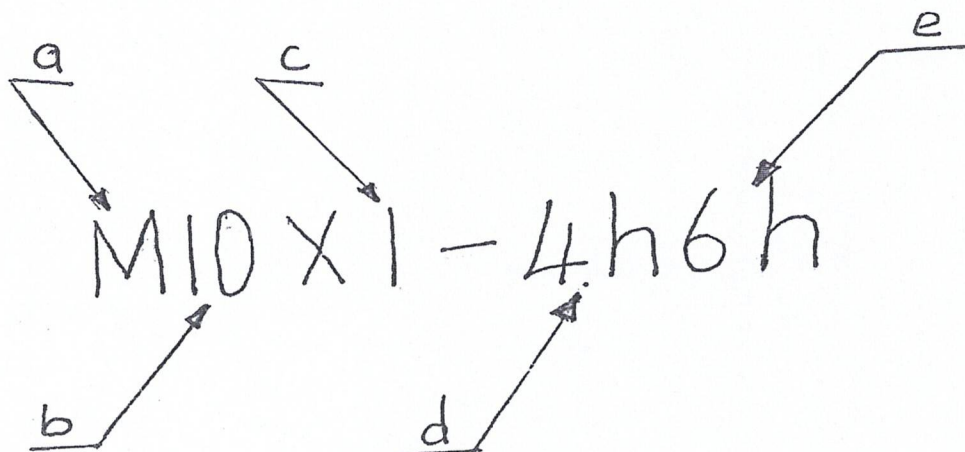


Fig Q4c

d) Name a and b on Fig Q4d.

(2 marks)

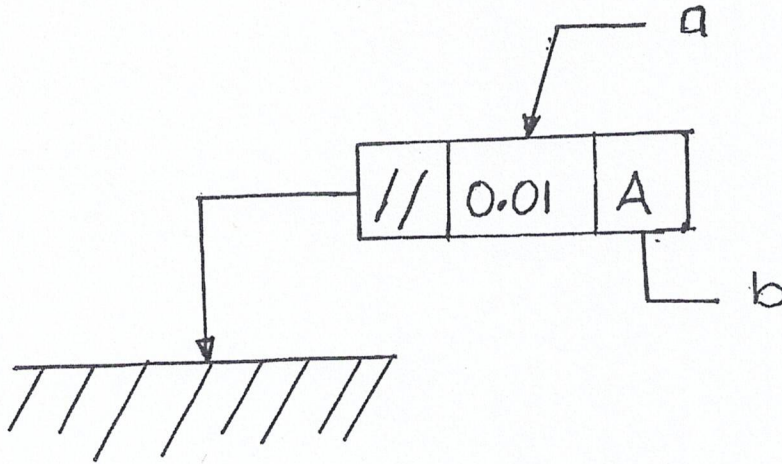


Fig Q4d

SECTION C

COMPULSORY – 50 MARKS

QUESTION 5

Fig Q5 shows components of an ANTIVIBRATION MOUNT. Draw an Assembled sectional front elevation taken along cutting plane X – X.

NB: Ballon reference your drawing and add a parts list, five (5) dimensions and a suitable title block. (50 marks)

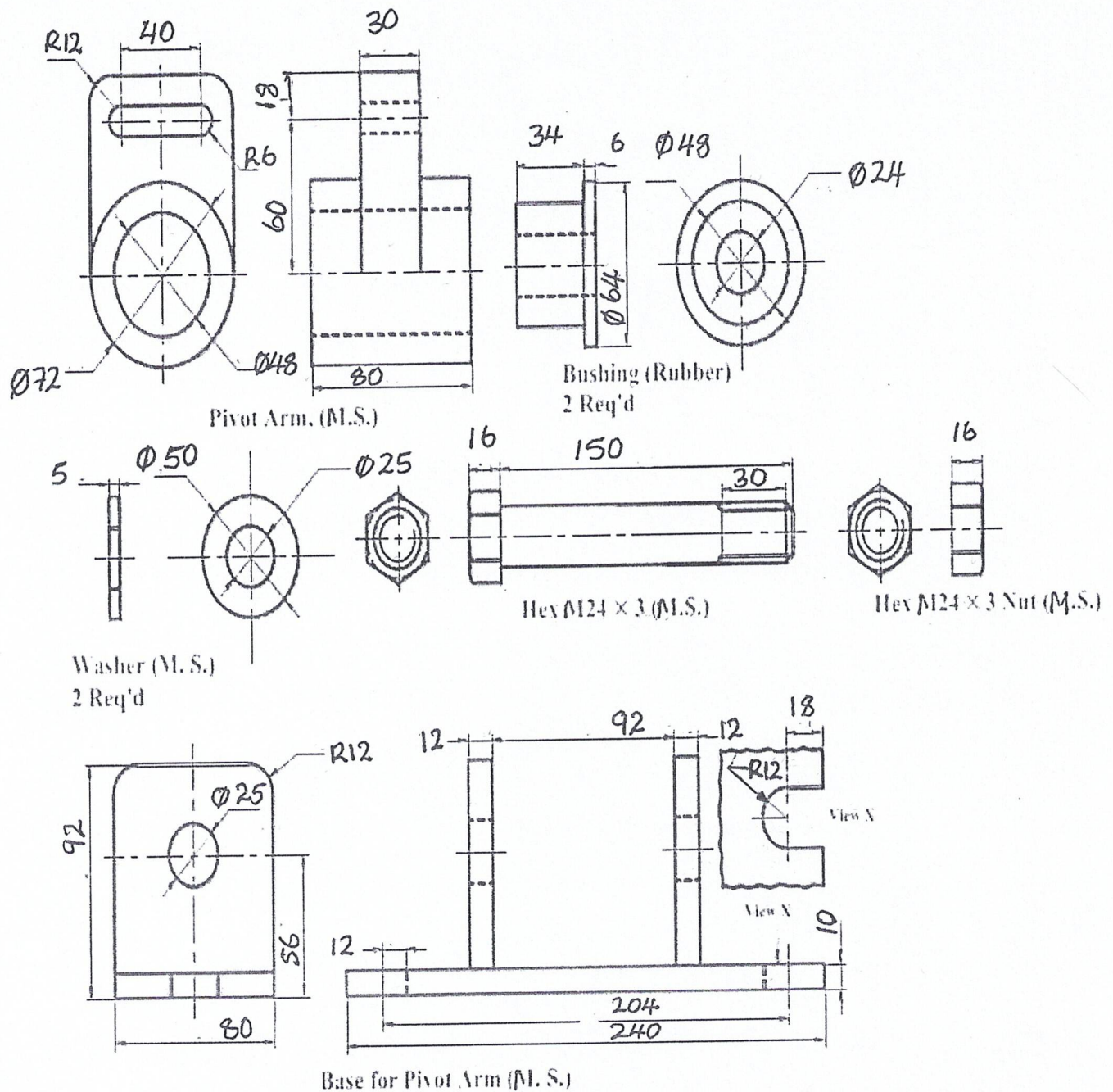


Fig Q5

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