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073105T4PLM

PLUMBING LEVEL 5

CON/OS/PL/CC/02/5

Apply Technical Drawing

July/ August 2025

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P.O. BOX 414 -00900 KIAMBU
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TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B.**
3. Answer **ALL** questions in section A and any **THREE** questions in section **B**.
4. Candidates are provided with a separate answer booklet
5. **DO NOT** write on this question paper.

This paper consists of SIX (6) printed pages

Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

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SECTION A (40 MARKS)

*Answer **ALL** the questions in this section.*

1. Drawings are made to communicate ideas in a simple and accurate language.
   a) List TWO types of Technical Drawings. (2 marks)
   b) Name TWO types of assembly drawings. (2 marks)
2. Drawings are made up of lines. Outline FOUR types of lines and state their use in engineering drawings. (4 marks)
3. Technical drawing is done by use of drawing instruments. Sketch a neat diagram of a drawing paper fixed with a T-square placed properly on the drawing board. (4 marks)
4. The quality of drawings is determined by quality of pencils used. Outline THREE classes of drawing pencils and give one example of each class: (3 marks)
5. Technical drawings have to fit well on the drawing papers. The size of the paper should accommodate the required drawing. Highlight FOUR series of drawing papers and their respective sizes. (4 marks)
6. Developing plane figures require construction of angles. Construct the following angles.
   i. 22.5^0 (2 marks)
   ii. 165^0 (2 marks)
7. A rectangular plan area is to be installed with a pipe across its diagonal. If the pipe has a length of 5000mm and one of the lengths of the rectangle is 1000mm, draw the rectangle to a scale of 1: 100. (4 marks)
8. The altitude of the apex of a triangle is 60 mm .Construct the triangle if base angles are 600 and 450. (4 marks)
9. The hexagonal flat faces of a nut are useful when fastening saddle connectors in plumbing works. Construct a regular hexagon with a side of 30 mm (5 marks)
10. Computer Aided Design has gained a lot of popularity in modern engineering technology. List FOUR reasons for implementing a CAD System in an organization. (4 marks)

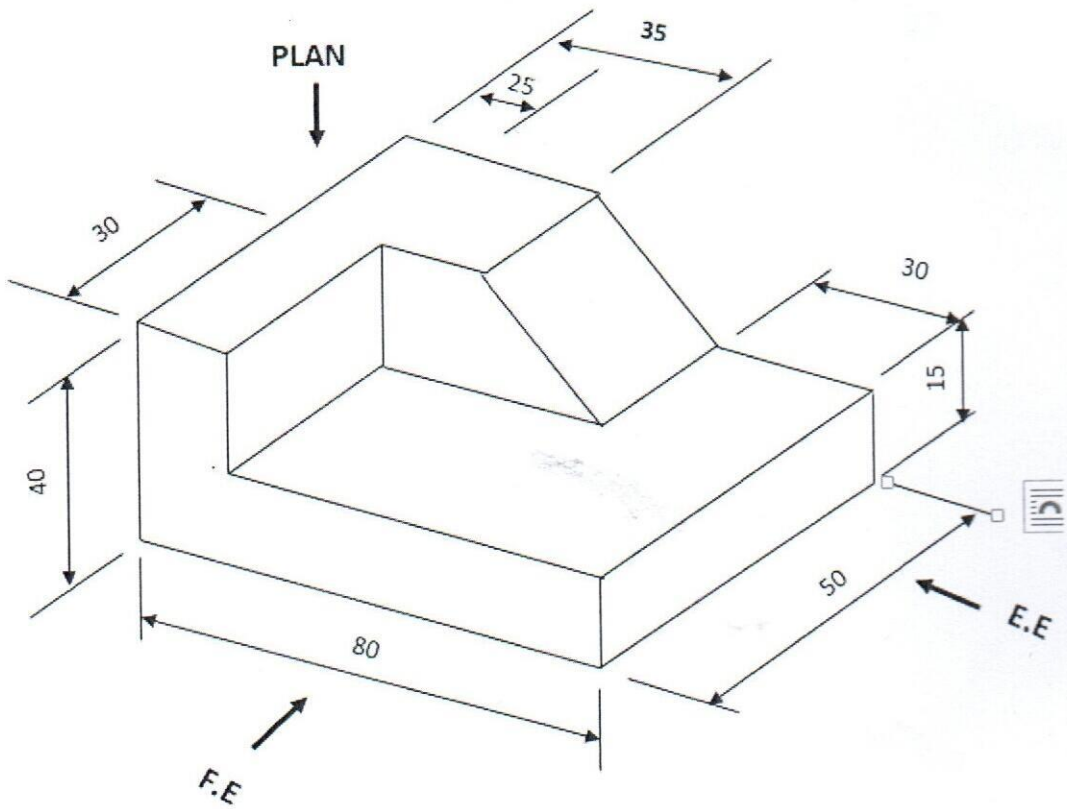
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SECTION B (60 MARKS)

Answer any **THREE** questions in this section

11. Figure 1 shows an isometric view of a machined block.

Figure 1.



Draw full size in first angle projection the following orthographic views of the block.

a) Front Elevation.

b) End Elevation.

c) Plan.

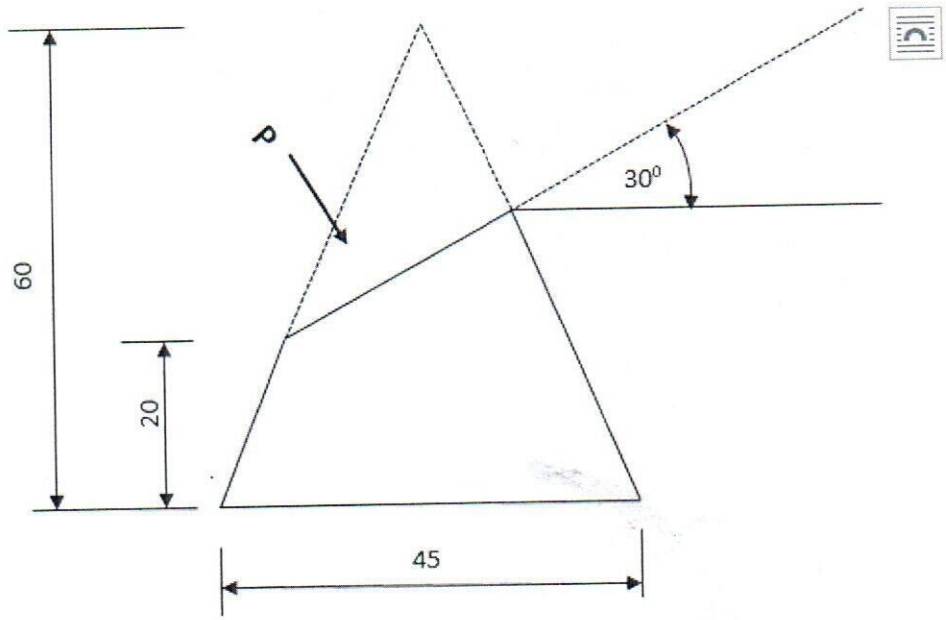
d) Indicate any five dimensions. (20 marks)

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12. A square truncated pyramid has a vertical height of 60 mm and base sides of 45mm as shown in figure 2 below.

Figure 2.



Draw the following views.

a) Front elevation

b) Plan view

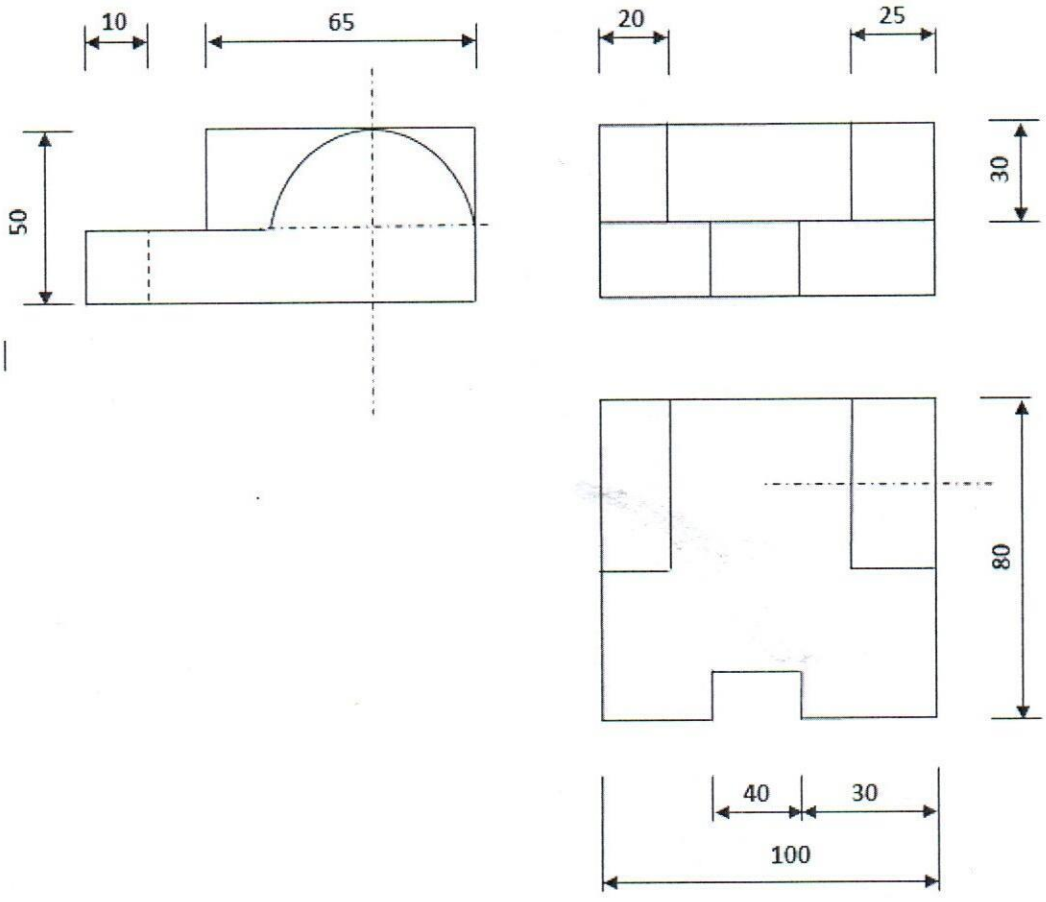
c) Development of lateral surface

d) Auxiliary view P. (20 marks)

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13. Figure 3 shows orthographic view drawn in first angle of a machined block. Draw the figure in isometric. (20 marks)

Figure 3.



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14. Figure 4 shows a shaped block used in construction. Using CAD software:

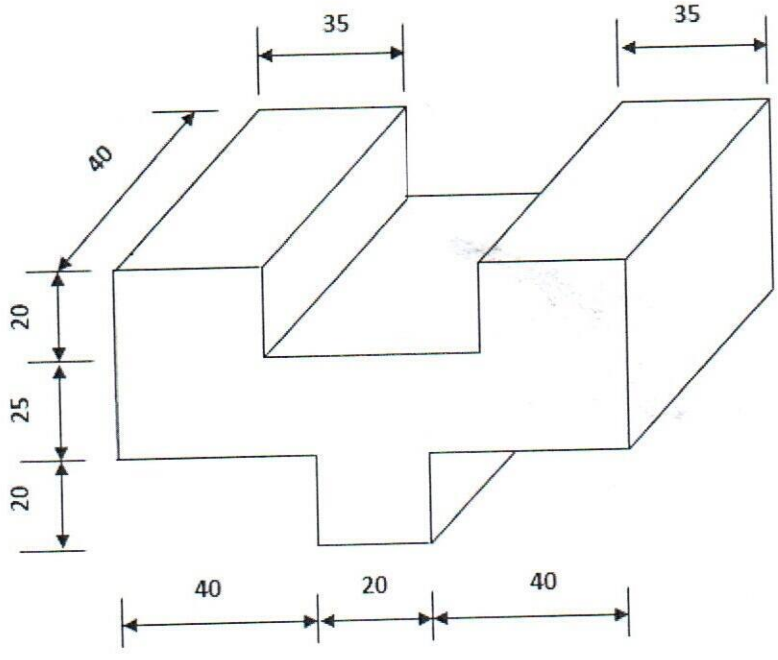
a) Draw the shaped block.

b) Indicate 5 dimensions.

c) Show title block.

d) Print your work. (20 marks)

Figure 4.



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