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071305 T4EOP

ELECTRICAL OPERATOR (POWER) LEVEL 5

ENG/OS/PO/CC/04/5

PREPARE AND INTERPRET TECHNICAL DRAWINGS

July/August 2024

Time: 3 Hours

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

WRITTEN ASSESSMENT

3 HOURS

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INSTRUCTIONS TO CANDIDATE

1. This tool consists of **TWO** sections **A** and **B**.
2. Answer **ALL** questions in section **A** and any **THREE** questions in section **B** in the answer booklet and drawing paper provided.
3. Marks for each question are indicated in brackets.
4. Do not write on the question paper
5. Answer questions in **English**.

This paper consists of FIVE (5) printed pages.

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

The following resources will be required during the assessment:

- *Drawing board*
- *Drawing paper size A2*
- *T-square*
- *HB and 2H/3H/4H Pencils*
- *Set squares*
- *Drawing room*
- *Printer*
- *Printing papers size A4*
- *Eraser*
- *Sharpener*
- *Engineering drawing set*
- *Masking tape*
- *Computer installed with AutoCAD software*

SECTION A (40 MARKS)

*Answer **all** questions in this section.*

1. Drawing materials are essential tools for designers, architects, and engineers. List **two** drawing materials used in a Technical Drawing Session. (2 marks)
2. Construct an angle 45^0 using a ruler and a compass **only**. (3 marks)
3. Inscribe a circle in an equilateral triangle ABC, of sides 60mm. (4 marks)
4. Freehand sketching is the practice of drawing without the use of guiding instruments such as rulers or templates. Freehand sketching is a valuable skill that enhances creativity, problem-solving, and communication. Using freehand sketching draw the following tools used in electrical Operation workshop.
   a) Claw hammer
   b) Hacksaw
   c) Pliers (6 marks)
5. A ball thrown upwards in air attains 50 m height and covers horizontal distance 75 m on ground. Using a scale of 1 mm rep 1 m, draw the projectile path of the ball. (5 marks)
6. Controlling a lamp from three positions involves using two two-way switches and one intermediate switch. Draw a wiring diagram for a lamp controlled from three different positions. (5 marks)
7. Construct a regular pentagon of sides 50mm. (5 marks)
8. Construct a parallelogram ABCD with side AB 20mm side BC 50mm and one base angle of 60° (4 marks)

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9. Implementing safety practices in a Technical Drawing Room helps create a safe and efficient technical drawing environment, preventing accidents and enhancing productivity. State **two** safety practices that should be adhered to in a technical drawing room. (2 marks)
10. **Figure 1** illustrates a wooden block utilized for constructing steps. Sketch the plan and the front of the block. (4 marks)

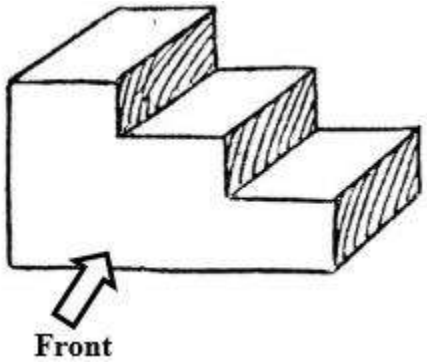


Figure 1

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SECTION B: (60 MARKS)

*Answer **three** questions in this section. All questions carry equal marks.*

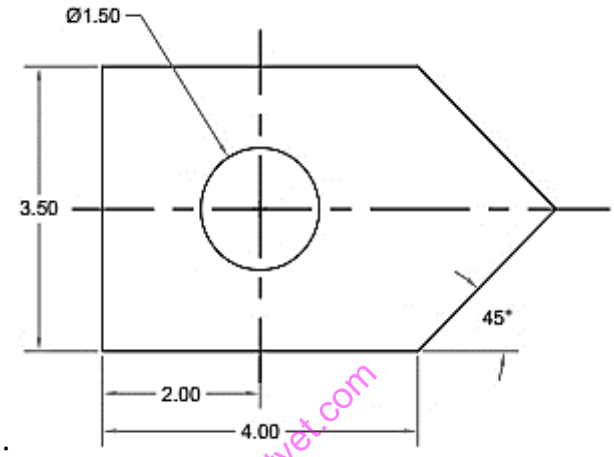
11. **Figure 2** shows one view of an object. Using AutoCAD software:

    a) create the drawing,

    b) insert all major dimensions,

    c) include your name and candidate number,

    d) print on A4 size paper. (20 marks)



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Figure 2

12. The orthographic projections of an object in first angle projection are shown in **Figure 3**. Draw the isometric view of the object and insert **six** major dimensions. (20 marks)

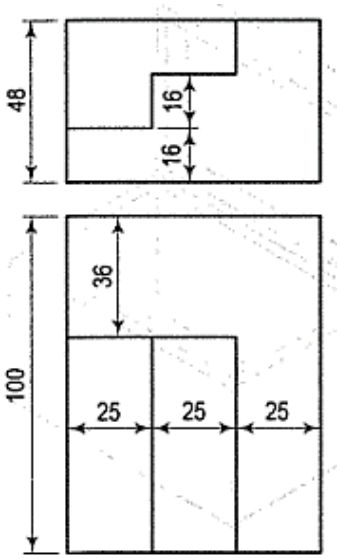


Figure 3

13. **Figure 4** shows the view of a template:

    a) Draw the template using AutoCAD software.

    b) Write your name and candidate number

    c) Insert **all** major dimensions.

    d) Print your work and attach the printout to your answer booklet. (20 marks)

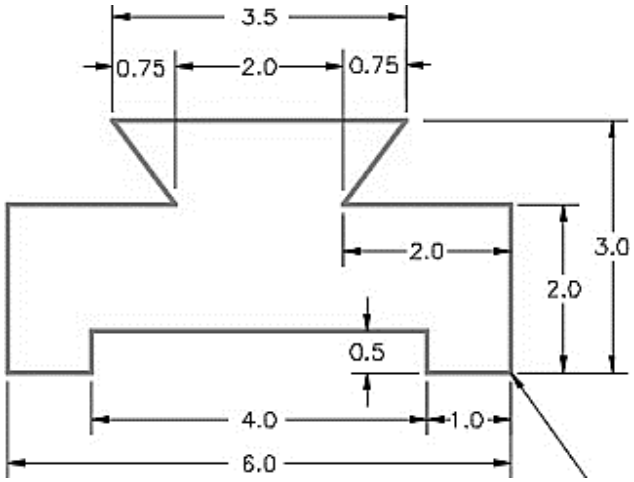


Figure 4

14. **Figure 5** shows isometric view of an object. Draw the orthographic views the object in **first angle** projection and insert **five** major dimensions. (20 marks)

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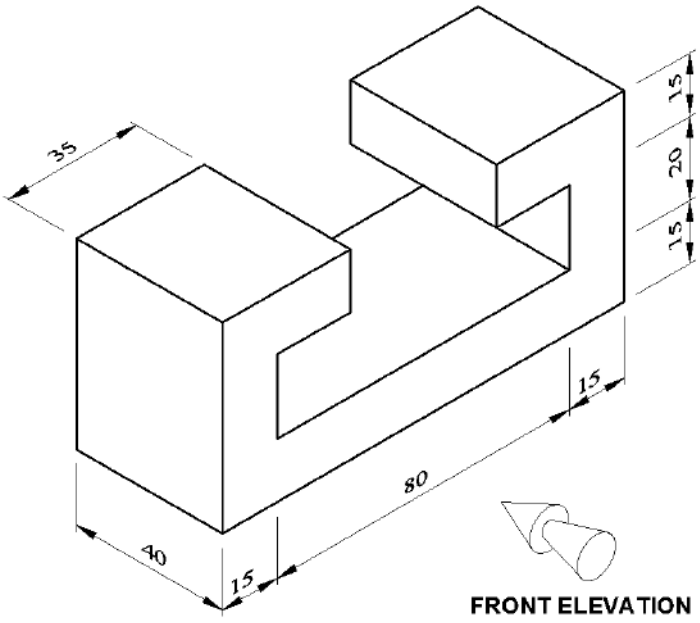


Figure 4

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