

061906T4TEL

TELECOMMUNICATION ENGINEERING LEVEL 6

ENG/OS/TLE/CC/04/6/A

Prepare and Interpret Technical Drawing

July/August 2025



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

**WRITTEN ASSESSMENT**

**Time: 3 HOURS**

**INSTRUCTIONS TO CANDIDATE**

1. The paper consists of **TWO** sections: **A** and **B**.
2. Marks for each question are indicated in the brackets.
3. Candidates are provided with a separate answer booklet
4. **DO NOT** write on this question paper.
5. **AutoCAD question will attract an additional ONE (1) hour.**

**Requirements**

1. Avail technical drawing tools and papers
2. Computer installed with AutoCAD version 2007 and above.



**This paper consists of FIVE (5) printed pages**

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

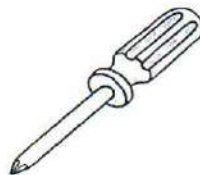
**SECTION A: (40 MARKS)**

*Answer ALL questions in this section.*

1. Electrician understands quality of a tools and equipment is enough to guarantee safety while working. Identify THREE electrician safety tools /equipment. (3 marks)
2. Electrical and electronic symbol is a way of communication in circuits. Draw the following electronic symbols (4 marks)
  - a) Potentiometer
  - b) Resistor
  - c) Variable resistor
  - d) Variable inductor
3. Hand tools free hand sketching is a first step to the preparation of a scale-drawing, i.e., a drawing drawn with the aid of instruments. Identify the following free hand sketch tools. (3 marks)



**Figure 1**



**Figure 2**



**Figure 3**



4. Seventy percent of the CAD users in the world use AutoCAD. State FIVE advantages of AutoCAD in technical drawing (5 marks)
5. Electrical drawings are the representation of electrical components and connected wiring to fulfil a specific purpose. An electrical drawing can be of a house, industry or an electrical panel. Identify FIVE categories of electrical drawing. (5 marks)
6. Basic line types can be named according to the application. List FOUR line types according to classification. (4 marks)
7. Orthographic projection is represented as either first angle or third angle projection. Highlight TWO major differences between them. (4 marks)
8. Dimensioning can be achieved either by unidirectional or aligned method. Illustrate using diagram based on either of the dimension methods the FIVE elements of a dimension system (5 marks)
9. Sectioning a solid is achieved by cutting by some imaginary cutting plane to understand internal details of that object. It also called oblique cutting of solid geometry. Explain TWO methods of surface development illustrate by the diagram below. (4 marks)

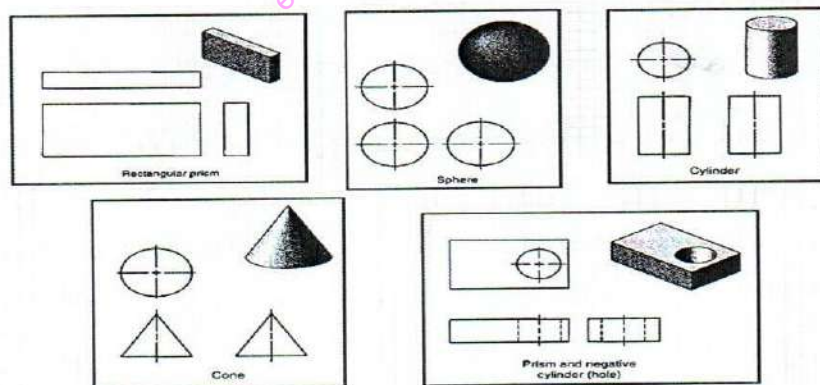


Figure 4

10. An ellipse is the locus of a point which moves so that the sum of its distances from two fixed points is a constant. Sketch an ellipse showing all its parts as achieved in technical drawing. (3 marks)

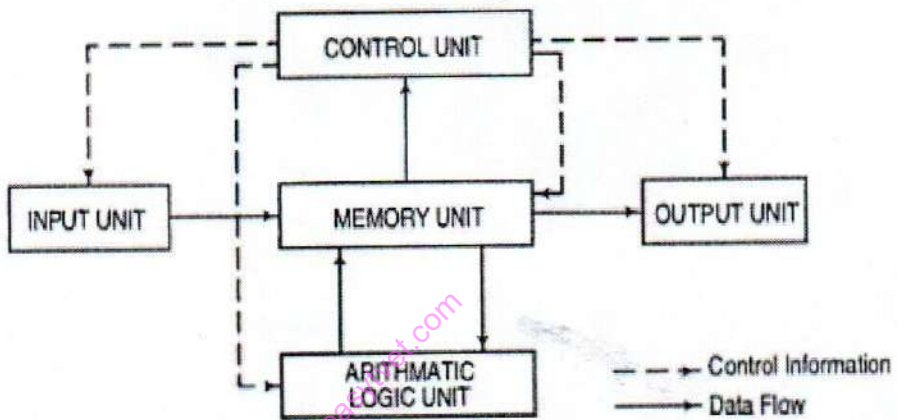


**SECTION B: (60 MARKS)**

Answer any **THREE** questions in this section

11.

- a) A computer system consists of Central Processing Unit (CPU), also known as processor, Main memory Input devices and Output devices and Secondary storage devices. Apply AutoCAD to reproduce the following diagrammatic representation. Insert title block section and layering (10 marks)



*Figure 5*

- b) Explain FIVE functions performed by a computer aided drafting system. (10 marks)
12. A hexagonal prism, edge of base 20 mm and axis 50 mm long, rests with its base on H.P such that one of its rectangular faces is parallel to V.P. It is cut by a plane perpendicular to V.P, inclined at 45 degrees to H.P and passing through the right corner of the top face of the prism. Draw the sectional top view and develop the lateral surface of the truncated prism. (20 marks)
13. Figure 6 below shows an isometric block with the front elevation in the direction F as shown. Draw the third angle orthographic projection of the block. Insert all the major dimensions (20 marks)



