

071906T4AEN

AGRICULTURAL ENGINEERING LEVEL 6

ENG/OS/AGR/CC/08/6/A

Prepare And Interpret Technical Drawings

July/August 2025



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

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

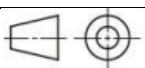
1. This paper consists of TWO sections: A and B.
2. Attempt ALL questions in section A and ANY THREE (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on the question paper.

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.**

SECTION A (40 MARKS)***Attempt ALL the questions in this section.***

- In engineering production process, proper interpretation of the messages entails identification of lines and other components provided. List FOUR common features found in engineering component drawings. (4 Marks)
- Depending on the shape of an object, different methods are employed in developing the solid object. Indicate the most appropriate method of development of solid objects listed below.
 - Dome
 - Cylinder
 - Cone
 - Transition piece
 (4 Marks)
- Technical drawing of engineering works has transformed from being manual to computer aided. Identify FOUR ways in which CAD enhances productivity in engineering design.
- Tracing of paths while defining patterns enhances the construction and fabrication of accurate objects. Construct an ellipse within two concentric circles given the diameters of 10cm and 6cm. (5 Marks)
- Symbols and signs play an important role and if wrongly interpreted can result into wrong results. Interpret the meaning of the following symbols in engineering drawings (4 marks)

No.	Symbol	Interpretation
a		
b		
c		
d		

- Safety precautions are very paramount when dealing with Engineering drawing tools and equipment both inside the drawing room and the overall surrounding environments. State THREE recommended safety precautions to observe when using manual drafting tools and CAD systems. (3 Marks)
- Sectional views provide detail to the inner parts of machines and engineering objects in general. State FOUR advantages of using sectional views in technical drawings.

(4 Marks)

8. Use of correct scale in engineering drawing results into correcting results obtained. Identify FOUR standard drawing scales used in technical drawing. (4 Marks)
9. Current markets provide varied Computer Aided Design software with varied functionalities and performance. Explain the following CAD commands with examples of their use:
 - a. Offset
 - b. Trim
 - c. Mirror
 - d. Fillet(4 Marks)
10. Proper disposing of wastes after carrying out technical drawing results to a conducive working environment and reduced cases of injuries to the user. Outline FOUR appropriate ways of disposing waste generated during production of engineering drawings. (4 Marks)

SECTION B

Attempt Any THREE Questions in This Section

11. Engineering drawings are presented as orthographic projections so as to provide specific details. Figure 1 below shows an isometric production drawing ,

- Produce a layout for 1st angle projection (3 Marks)
- Produce a plan and end views. (9 Marks)
- Full sectional view of the front view (8 Marks)

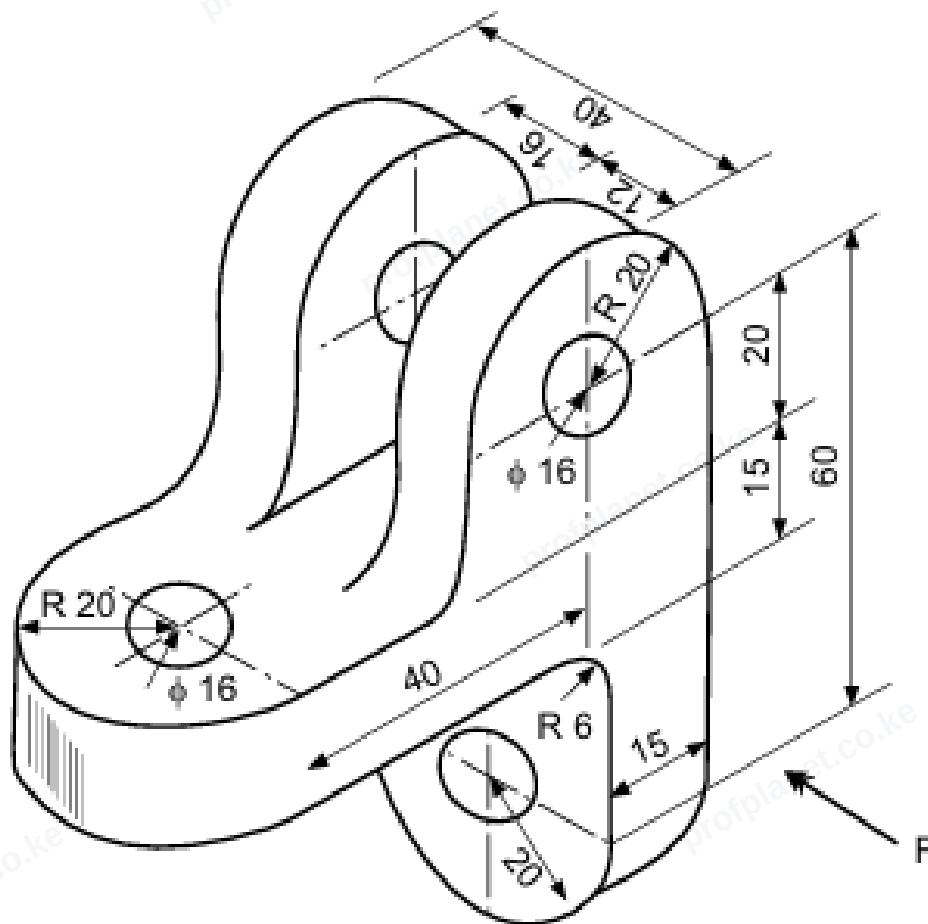


Figure 1

12. Sketching is one of the important skills required in all technical professions when communicating information.

- a. Sketch the **figure 2** below of a crank and pedal using appropriate scale.

(6 Marks)

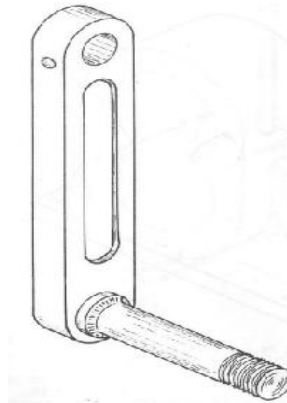


Figure 2

- b. Sketch an Isometric view from the orthographic projections provided in Figure 3 below

(14 Marks)

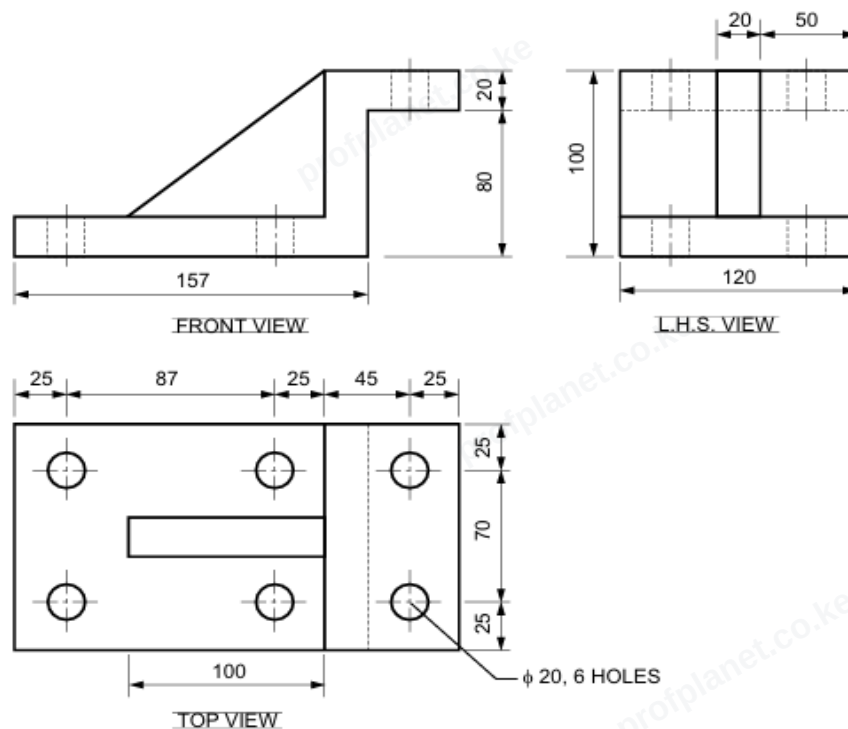


Figure 3

13. A cone of base 50 mm diameter and height 65 mm rests with its base on horizontal plane as shown in **Figure 4** below. A section plane perpendicular to vertical plane and inclined at 30° to horizontal plane bisects the axis of the cone.

- a. Copy the views to full scale as provided in the figure below (6 marks)
b. Draw the development of the lateral surface of the truncated cone. (14 marks)

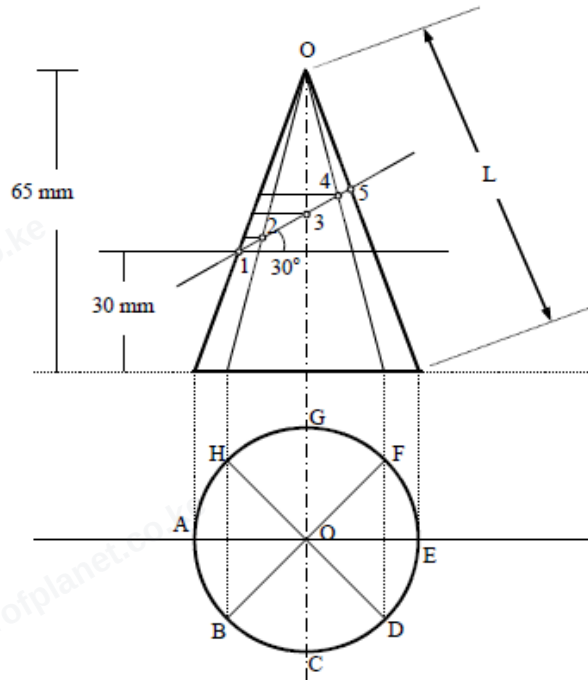


Figure 4

14. A mechanical bracket shown in **Figure 5** below requires to be machined on a lathe. Tasked as a draftsman, generate a full-scale engineering drawing of the bracket in Isometric view (20 Marks)

