

MODULE II

CIVIL ENGINEERING LEVEL 6

CON/OS/CEN/CC/06/6/MB

Prepare and Interpret Technical Drawing

March/April 2026



**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. Attempt **ALL** the 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.

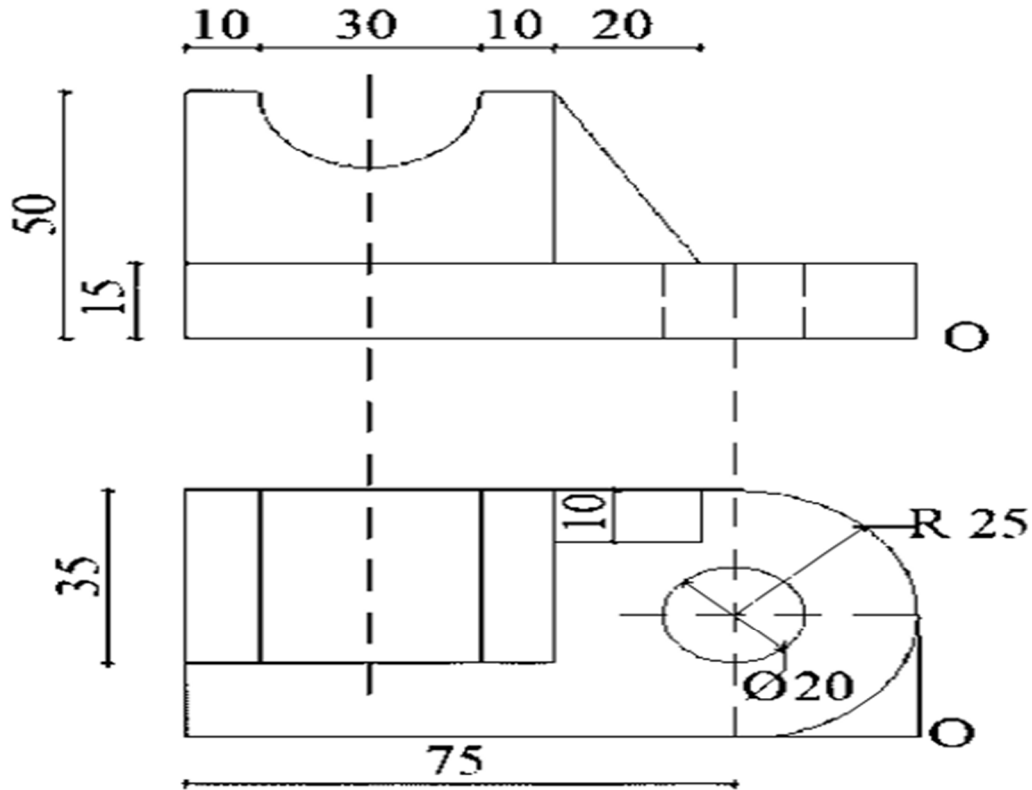
SECTION A (40 MARKS)

Answer ALL the questions in this section.

1. Interpretation of symbols and abbreviations ensures uniform understanding of construction drawings. List THREE benefits of using standard abbreviations in drawings. (3 Marks)
2. List THREE types of dimensioning methods used in technical drawing. (3 Marks)
3. Proper handling of instruments ensures long- term and precision. State FOUR safety precautions to observe when using compasses. (4 Marks)
4. CAD software works by responding to stipulated commands depending on the needs of its user. Highlight FOUR properties that are modified by dimension style manager. (4 Marks)
5. Technical drawing depends on accuracy and interpretation standards. State FOUR standard conventions applied in interpreting technical drawings. (4 Marks)
6. Orthographic projection enables an object to be represented in multiple views. State THREE principles applied when producing orthographic drawings. (3 Marks)
7. Using a pair of compasses and a ruler only, construct angle $AOB = 90^\circ$ and bisect it into THREE equal parts. (6 Marks)
8. Construct a triangle PQR on PQ as base with $PQ = 70\text{mm}$, $PR = 57\text{mm}$, $QR = 76\text{mm}$ and draw a circumscribing circle. (5 Marks)
9. Drawing Paper, Eraser, Masking tape and pencils are appropriate materials that enhance the appearance and accuracy of a technical drawing. Give the importance of:
 - i. Drawing Paper. (1 Mark)
 - ii. Eraser. (1 Mark)
 - iii. Masking Tape. (1 Mark)
 - iv. Pencil. (1 Mark)
10. When inspecting plumbing works on a construction site a civil engineer uses tape measure to verify pipe lengths and adjustable wrench to tighten fixtures and check basic connections. Sketch:
 - i. Adjustable wrench. (2 Marks)
 - ii. Tape measure (2 Marks)

SECTION B (60 MARKS)*Answer THREE Questions in This Section*

11. Using figure 1 , draw using CADD software to a scale of 1:1 an isometric view of the block taking point O as the lowest point. Include six major dimensions. Print the drawing on an A4 paper and submit your work with the other drawings. (20 Marks)

**Figure 1**

12.

- a. Figure 2 shows a pentagon ABCDE in which AB= 40 mm, BC = 50mm, angle at B = 112° , AE =20mm, angle at C= 95° , angle at E = 130° . Construct a pentagon BGHJK similar to and of twice the area of pentagon ABCDE. (10 Marks)

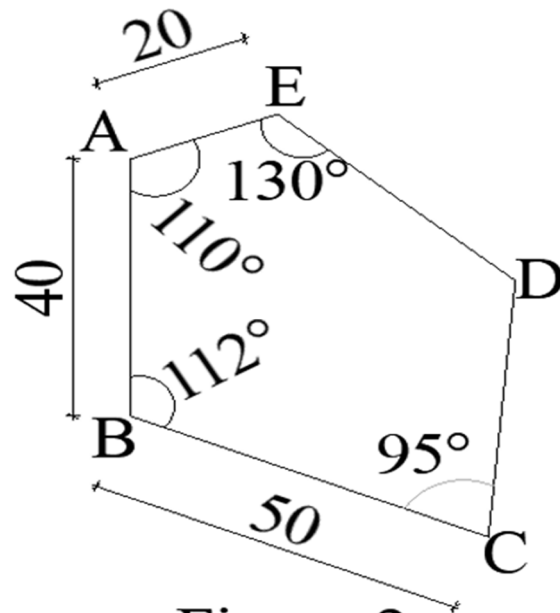


Figure 2

- b. Figure 3 shows a quadrilateral ABCD in which $AB = 60\text{mm}$, $BC = 60\text{mm}$, $AD = 60\text{mm}$, angle at $B = 90^\circ$, angle at $A = 73^\circ$. Construct a triangle equal in area to the given quadrilateral. (10 Marks)

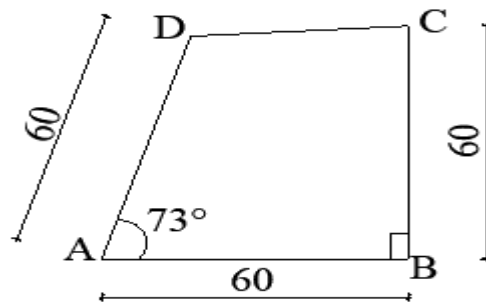
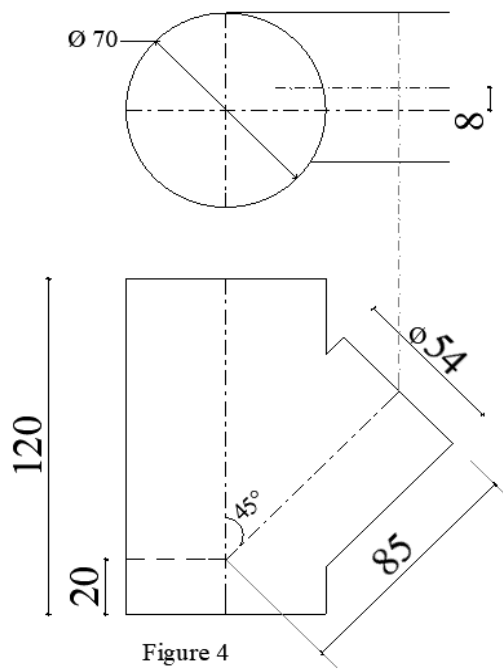


Figure 3

13. Figure 4 shows an incomplete plan and front elevation of two cylinders intersecting at 45° .

Draw :

- Front elevation (7 Marks)
- Plan (6 Marks)
- Curve of interpenetration (7 Marks)



14. Figure 5 shows a truncated right circular cone with base diameter 60 mm, top diameter 30 mm, and height 80 mm. Draw the:

- Plan (6 Marks)
- Development of the lateral surface of the truncated cone (7 Marks)
- True shape. (7 Marks)

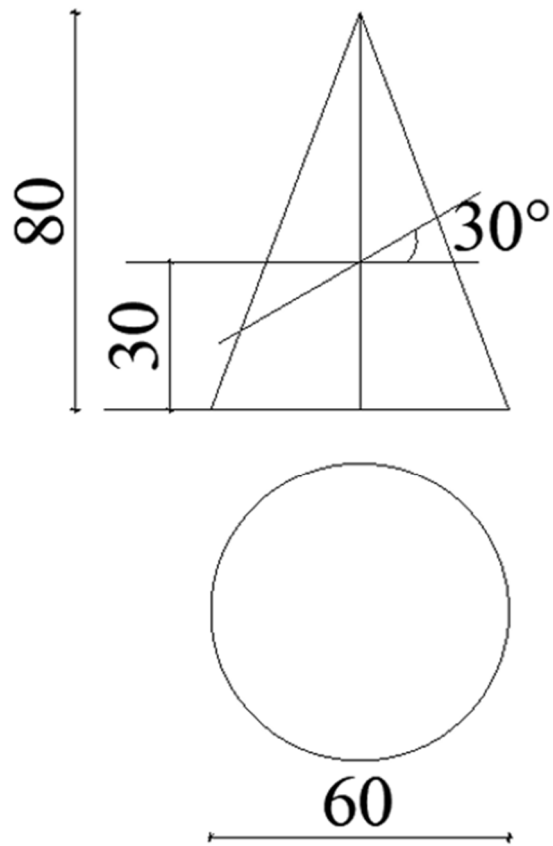


FIGURE 5

THIS IS THE LAST PRINTED PAGE