

073206T4CEN

CIVIL ENGINEERING LEVEL 6

CON/OS/CET/CC/02/6/A

Prepare and Interpret Technical Drawings

Nov/Dec 2024



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

WRIT

ENT

T

S

INSTRUCTIONS TO CANDIDATE

1. This paper consists of two sections: A and B
2. Answer ALL the question as guided in each section
3. Marks for each question are as indicated in the brackets
4. You are provided with a separate answer booklet to answer the questions
5. Do not write in this question paper

This paper consists of FOUR (4) 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. In Engineering Graphics, the details of various objects are drawn by different types of lines. Each line has a definite meaning and sense to convey. State the use of the following lines in engineering drawings;
 - a) Thick lines (1 Mark)
 - b) Long –dashed dotted narrow line (1 Mark)
 - c) Thin lines. (1 Mark)
2. Engineering drawing is a universal language of engineers. List FOUR skills acquired in Engineering Drawing. (4 Marks)
3. The arrangement of dimensions on a drawing indicates the purpose of the design of the object. Sketch the following methods of dimensioning;
 - a) Chain dimensioning (2 Marks)
 - b) Parallel dimensioning (2 Marks)
 - c) Combined dimensioning (2 Marks)
4. Engineering drawings consists of a _____ etric constructions. With the aid of a compass only, draw a regular hexag _____ mm. (4 Marks)
5. Personal Protective Equipments are worn in line with occupational safety and health regulations in the construction industry. Outline FOUR importance of wearing this Personal Protective Equipment while working. (4 Marks)
6. Orthographic projection and isometric projection are both methods of representing objects. Outline FOUR uses of orthographic projection in technical drawing. (4 Marks)
7. The first-angle and third-angle projection methods are two different approaches to representing an object on a plane. Describe TWO ways in which they differ. (4 Marks)
8. An auxiliary view is a concept in technical drawing that is used by engineers, designers and architects. State FOUR purposes of auxiliary views and provide an example where they are useful. (4 Marks)
9. As a civil Engineer, it's important to use scales to represent objects. Construct a plain scale, 30mm = 10 mm, 50 mm long to read 1mm. (4 Marks)
10. Isometric drawings are relevant and useful in technical drawing and architecture. With THREE illustrations, enumerate the functions of isometric projection in technical drawing and provide an example where it is used. (3 Marks)

SECTION B: (60 MARKS)**Answer Any THREE Questions in this section**

11. **Figure 1** shows the isometric view of a block. Draw the following in first angle orthographic projection;
- Front elevation as shown
 - The end elevation
 - The plan

(20 Marks)

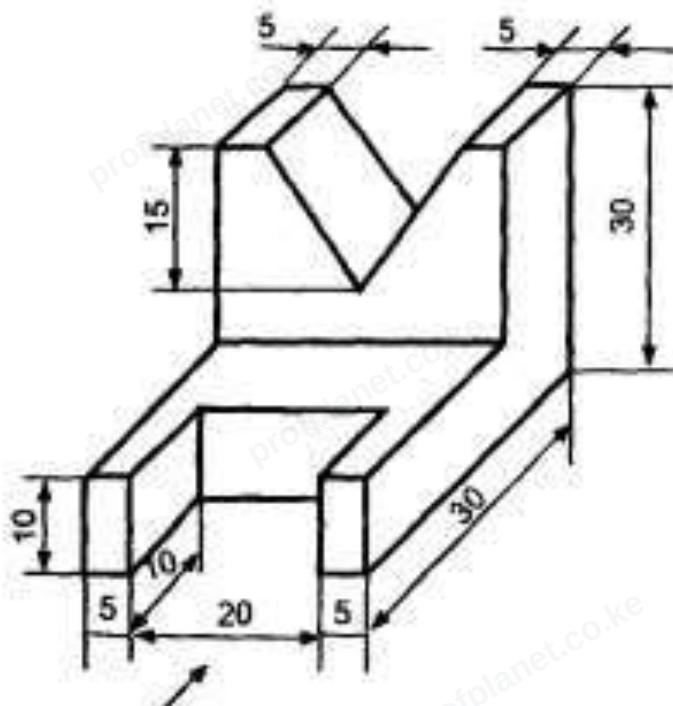
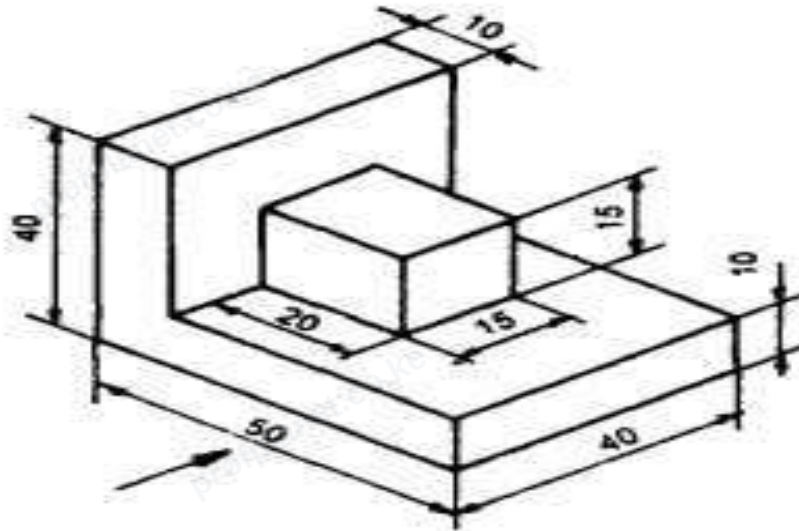


FIGURE 1

12. Engineers on a daily basis come up with the constructions of geometric figures from a given data;
- Construct an isosceles triangle that has a perimeter of 136 mm and an altitude of 55 mm. (10 Marks)
 - Construct a rectangle that has a diagonal 55mm long and one side 35 mm long. (10 Marks)
13. **Figure 3** shows the isometric view of a machine block. Draw the following in first angle orthographic projection;
- Front elevation as shown;

- b) The end elevation;
- c) The plan.

(20 Marks)



14. **Figure 4** shows orthographic views

wn in third angle projection. Draw the

isometric view of the block.

(20 Marks)

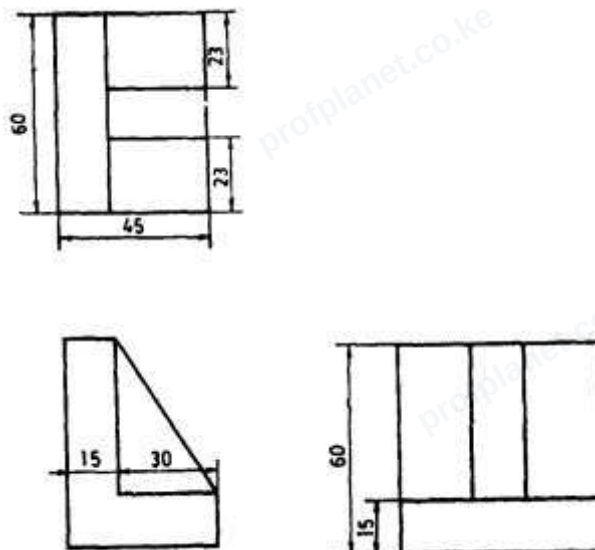


Figure 4

THIS IS THE LAST PRINTED PAGE