073206T4BLD

BUILDING TECHNICIAN LEVEL 6

CON/OS/BUT/CC/02/6

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. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Candidates are provided with a separate answer booklet
4. **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.

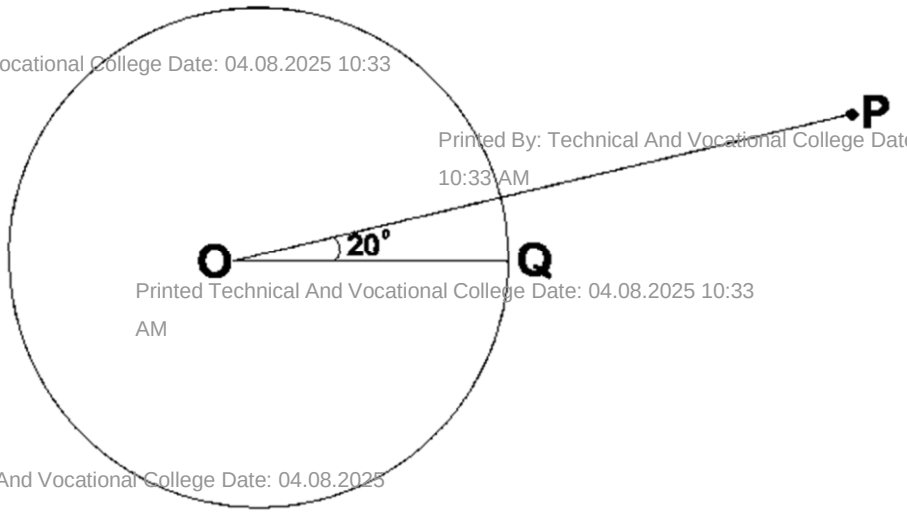
1. A technical drawing is blueprint that bridges the gap between ideas and real-world creation. Outline THREE importance of a technical drawing in engineering. (3 Marks)

2. The drafting of a technical drawing requires various tools and equipment. Differentiate between a compass and a divider as instruments used in technical drawing. (4 Marks)

3. A section view in technical drawing is produced from an orthographic projection. Define a section view in technical drawings. (2 Marks)

4. Orthographic projections represent three dimensions images into two-dimension drawings. List THREE principal views in orthographic projection. (3 Marks)
5. In order for a person to understand technical drawing, they must be conversant with its various terminologies. Outline the meaning of the following terms as referenced to technical drawing. (4 Marks)
   a. Ellipse
   b. Locus of a point

6. Taking care of your technical drawing instruments is encouraged to maintain efficiency of your tools. Outline TWO ways you would care of a T-Square. (2 Marks)
7. Construct a tangent to a circle 40mm diameter from int P outside the circle. OP = 50mm and angle POQ = 20^0. (3 Marks)



8. Construct a rectangle that has a diagonal 55 mm long and one side 35 mm long. (4 Marks)

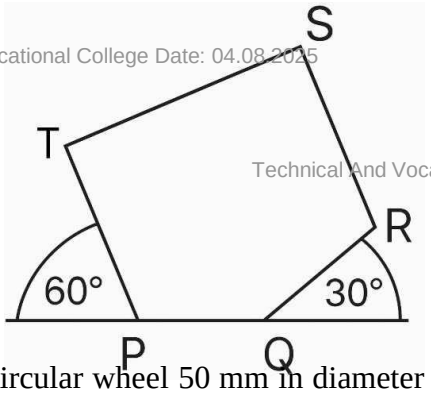
9. An involute is a curve that is generated by unwinding a taut string from a curve. Construct an involute of a square of sides 15mm. (5 Marks)
10. Provided below is an isuare of sides 60mm. Construct an isometric circle within the square. (4 Marks)
11. With the aid of only a compass and ruler construct an octagon whose diameter is 120mm. (6 Marks)

SECTION B (60 MARKS)

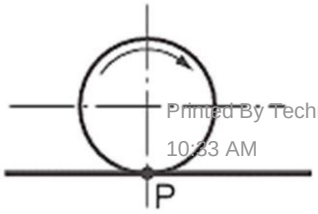
Answer THREE Questions in This Section

12.

a. Construct a triangle of equal area to an irregular pentagon whose sides are PQ = QR = 40, PT = RS = 60 and ST = 80. (8 Marks)



b. Figure 1 shows a circular wheel 50 mm in diameter with a point P attached to its periphery. The wheel rolls without slipping along a perfectly straight track whilst remaining in the same plane. Plot the locus of point P for one full revolution of the wheel on the track. (12 Marks)



Printed Draw to scale 1:1 the first angle orthographic projection of the given machine block below. Figure 1. (20 Marks)

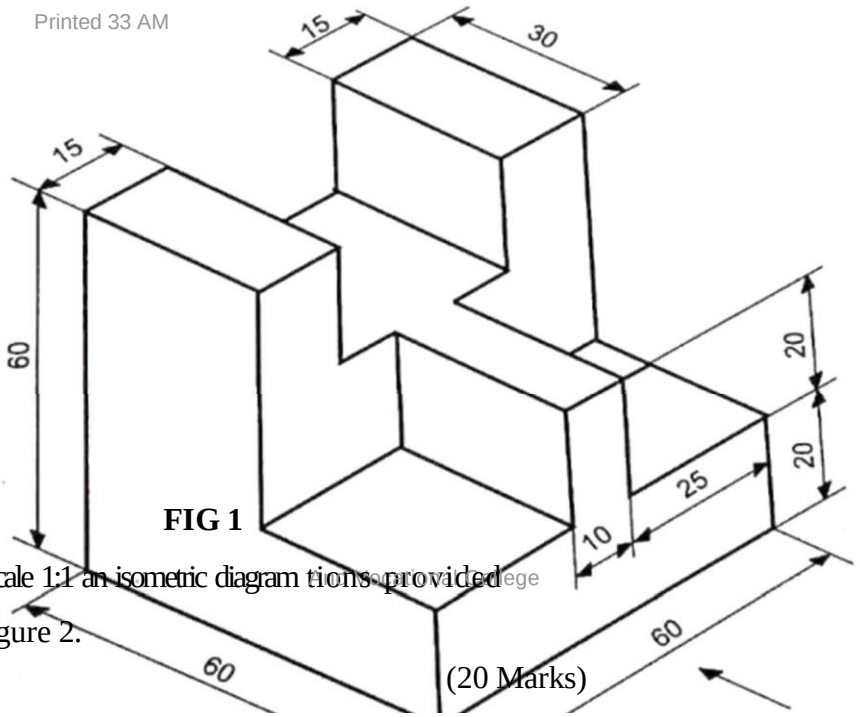


FIG 1

13. Construct to scale 1:1 an isometric diagram tions provided below in Figure 2. (20 Marks)

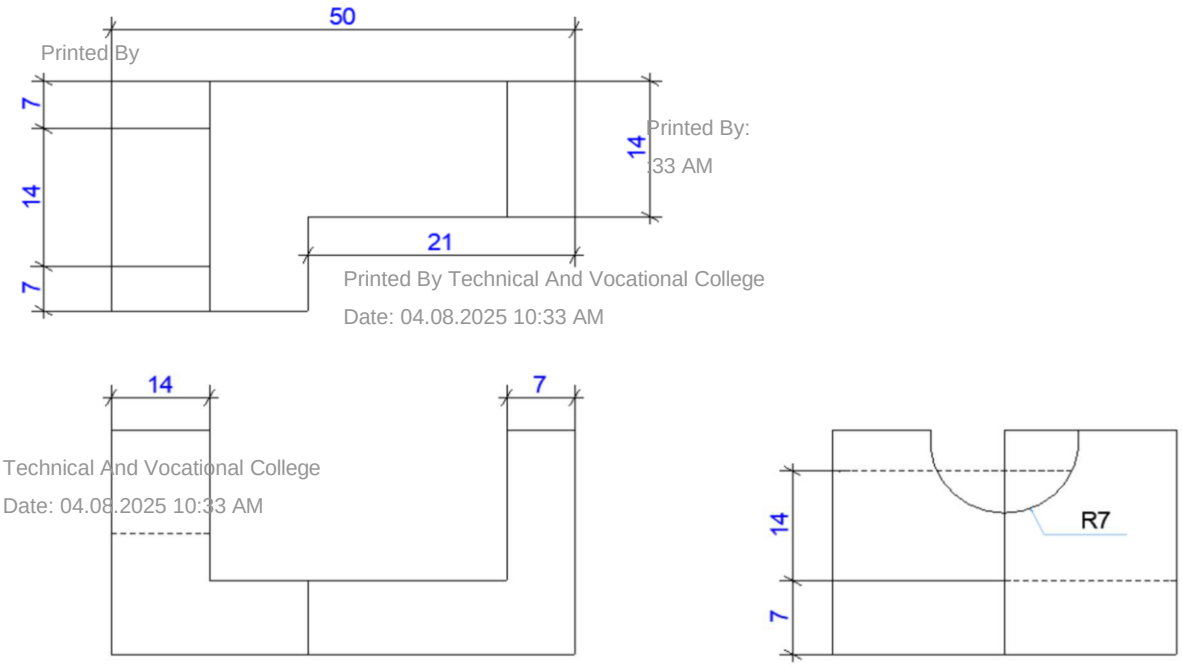


FIG 2

14. The figure 3 below shows a cone intersecting a cylinder at right angle. (20 Marks)

Draw in first angle orthographic projection the:

a. Plan
b. Curve of intersection
c. Surface development of the cylinder.

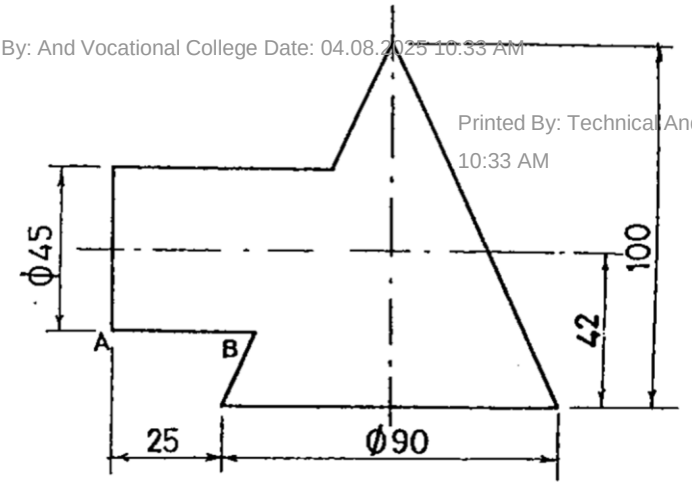


FIG 3