



MACHAKOS UNIVERSITY

University Examinations for 2024/2025 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DEGREE IN
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 211: ENGINEERING DRAWING II

DATE: 16TH JANUARY, 2025

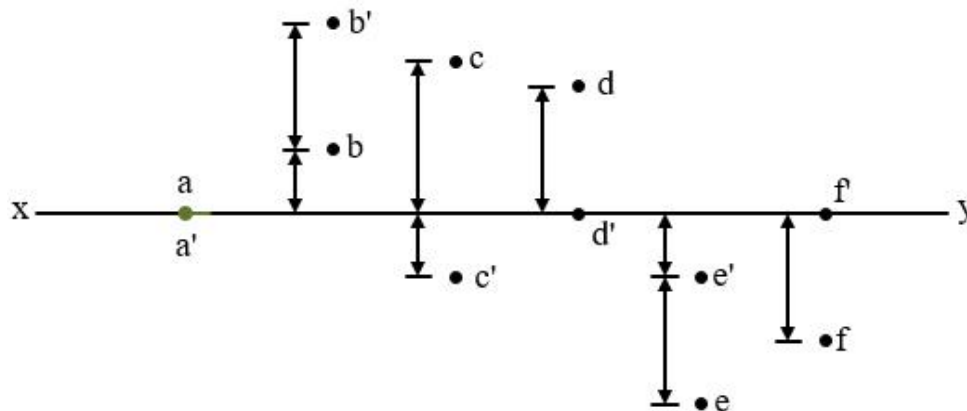
TIME: 11.00 AM – 1.00 PM

INSTRUCTIONS:

Answer question **ONE (Compulsory)** and **any other TWO** questions
All symbols have their usual meaning

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Orthographic projections of the various points are as shown in Figure Q1. Read the views and find out for each point object;
- The quadrant in which the object lies.
 - The distance of the object from the vertical plane (VP) and the horizontal plane (HP).
- (9 Marks)



- b) Find the distance between two points A and B, when B is 40 mm in front of the vertical plane and 25 mm above the horizontal plane. The point A is 25 mm behind the VP and 40 mm below the HP. The distance between the projectors measures along the meeting line of the planes being 50 mm. (10 Marks)
- c) An equilateral triangle of 30 mm sides has a corner in the vertical plane and 20 mm away from the horizontal plane. Draw its projections (front view and top view) when the plane is parallel to the horizontal plane and one of its sides inclined at 45 degrees to the vertical plane. (11 Marks)

QUESTION TWO (20 MARKS)

A T-pipe connection consists of a vertical cylinder of diameter 80mm and a horizontal cylinder of the same size. The axes of the cylinders meet at right angles. Draw the curves of intersection.

QUESTION THREE (20 MARKS)

A square pyramid has a base of 35 mm and height 75 mm. The pyramid rests on its base with one of its base edges inclined at 60 degrees with the vertical plane. Draw the projections (front view, top view and side view).

QUESTION FOUR (20 MARKS)

A right regular pentagonal prism, side of base 30mm and height of axis 75mm rests on horizontal plane on one of its base corners such that its long edge containing the corner is inclined to the horizontal plane at 60°. Draw its projections.