CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE AND BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION

AGEN 111: INTRODUCTION TO TECHNICAL DRAWING

STREAMS: BSC (HORT & AGED) Y1S1   **TIME: 2 HOURS**

DAY/DATE:

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION I AND ANY OTHER TWO IN SECTION II

1. (a)   Using relevant examples, highlight three standard conventional lines used in technical drawing.   [6 marks]

    (b)   Using the necessary sketches, show how you can, highlight three standard conventional lines used in technical drawing.   [6 marks]

    (i)   Dimension lines and projection lines

    (ii)   Dimension circles

    (iii) Dimension radius curves

    (iv)   Dimension angles   [8 marks]

2. Isometrically draw a block measuring 70mm long by 50 mm high by 30 mm deep. From one of its end draw a table tenon measuring 25mm by 5mm by 25mm.   [8 marks]

3. (a)   Using necessary tools systematically explain and construct an angle of 60˚.

                                                                                   [2 marks]

    (b)   With aid of a clear sketch show the contents of a title block.   [3 marks]

4. Using a divider and a set squares divide a line measuring 75mm into eight equal parts.

                                                                                   [3 marks]

SECTION II

5.   (a)   Explain isometric drawing, pointing out the two important rules that should be
             followed.   [8 marks]

      (b)   Construct and explain a radius curve of 30mm at an acute angle of 70˚.[4 marks]

      (c)   Construct and explain how a draftman can erect a perpendicular from any point of
             given line AB.   [4 marks]

      (d)   Using a diagram explain how you can bisect angle BAC=49˚ AB=AC=65mm.
                                                                              [4 marks]

6.   (a)   Explain ten basic tools that a drafts person need for his work.   [5 marks]

      (b)   The figure shown below shows three views of shaped block. Using A4 paper size
             draw the block full size in isometric.   [15 marks]

7.   (a)   Draw a cabinet projection of a clock case using oblique projection. The block measures 75 mm long by 65mm high by 35mm deep. The hole has a diameter of 50mm and the thickness around the hole is 5 mm.   [10 marks]

      (b)   The figure shown below shows the pictorial view of an engineering component. Sketch in free hand and in good proportions, suitable front view, end view and plan views of each component using third angle orthographic projection.

                                                                                                    [10 marks]