



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR DEGREE IN
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION**

AGEN 111: TECHNICAL DRAWING

DATE: 6/6/2017

TIME: 8:30 – 10:30 AM

Instructions:

- 1. This paper contains FIVE questions**
- 2. Answer Question one and any other two questions**
- 3. All dimensions are in millimeters unless otherwise stated**
- 4. Construction lines should be faint and should not be erased**
- 5. A title block, accuracy and neat line work are essential**

QUESTION ONE (30 MARKS)

- a) Construct a circle whose diameter is 50 mm. Given point P is 60 mm away from the centre of the circle, construct a tangent from point P to any point of the circle
(10 marks)
- b) Given that, two straight lines meet at a right angle, construct an arc to blend the two lines smoothly
(10 marks)
- c) Construct a circumscribed circle to an equilateral triangle FGH whose sides measure 65 mm
(10 marks)

QUESTION TWO (20 MARKS)

- a) A piece of wire 165 mm long is bent to form a regular **octagon**. Construct this octagon and show its distance across corners (10 marks)
- b) On the same base of 30 mm, construct a **square** and a regular **hexagon** (10 marks)

QUESTION THREE (20 MARKS)

Draw an ellipse whose major axis is 120 mm and minor axis 70mm

- a) Using concentric circles method (10 marks)
- b) Using rectangular method (10 marks)

QUESTION FOUR (20 MARKS)

A footballer stands at point C, 4 meters from goal post A and 5 meters from goal post B. If the two goal posts are 6 meters apart, choose a suitable scale and construct:

- a) A triangle to show the position of the footballer in relation to the goal posts (10 marks)
- b) The line showing the shortest distance from the footballer to the goal line. State this length in meters (10 marks)

QUESTION FIVE (20 MARKS)

- a) Figure 1 shows pictorial views A to J and orthographic views 1 to 9 which correspond to these pictorial drawings are shown in the next page. Draw a table to match line answers. An Example (4 marks)

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- b) i) Using third angle projection, trace the given views in figure 2 below and complete the missing views (8 marks)
- ii) Using first angle projection, trace the given views in figure 3 and complete the missing views in your answer booklet. (8 marks)