



## MURANG'A UNIVERSITY COLLEGE

( A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

**FACULTY; SCHOOL OF ENGINEERING:**

**DEPARTMENT: ELECTRICAL ENGINEERING**

**COURSE: DIPLOMA ; CLASS: EE/P/14DM ; EXAM: MAIN**

**ACADEMIC YEAR: 2014/2015 SEMESTER: I YEAR II**

**UNIT: ENGINEERING DRAWING II; UNIT CODE: SEE1203**

**DATE: 20<sup>TH</sup> APRIL 2015**

**TIME: 2 HOURS**

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### *Instructions to candidates*

1. This exam paper contains section 'A' and 'B' with six (6) questions in total.
2. Answer all questions in section 'A' and any other two questions in section 'B'.
3. You should have the following for this examination;
  - Drawing instruments(drawing board, the standard set squares, eraser, 2H and HB pencils)
  - Drawing papers
  - Mobile phones not allowed in the exam room.

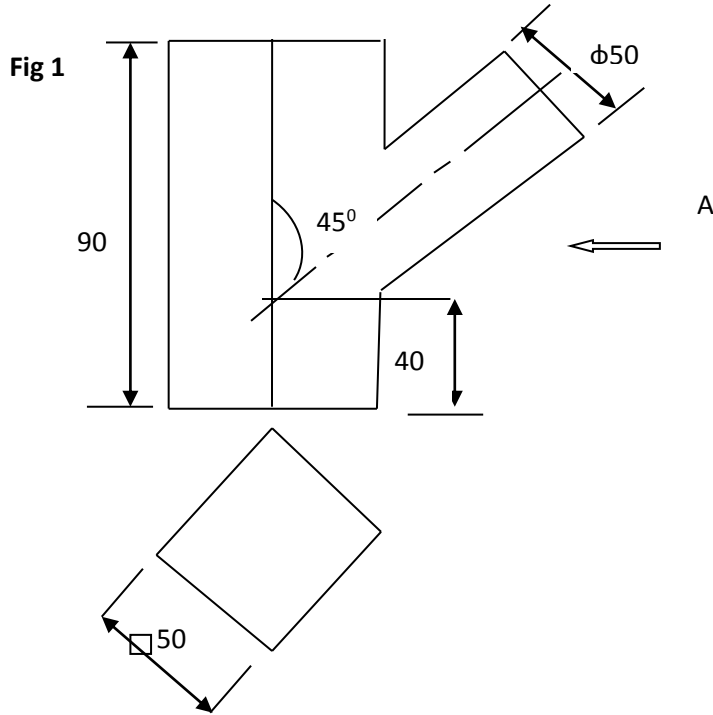
### **SECTION A : Attempt ALL THE questions in this section**

Q1 Fig. I shows incomplete drawings of the plan and end elevation of a junction between a square

sectioned cable trunking and a cylindrical conduit.

Draw;

- (a) The complete plan and front elevation.
- (b) Development of the whole surface of the cylindrical cable conduit section.
- (c) End elevation from the direction of arrow 'A'. (30marks)



Dimensions in mm

**SECTION B :Attempt ANY TWO questions in this section**

Q2 (a). The principle section of the bowl of an aerial of a radio telescope is a parabola. The bowl has a maximum diameter of 5000mm and the focus of the parabola is 1000mm from its vertex. Draw the parabola to a scale of 1: 0.025. (10marks)

(b). Construct a hyperbola whose ratio of eccentricity is 2:1 and the distance between the ends of the hyperbola is 150mm. The distance from the directrix to the focus is 45mm.

(10marks)

Q3 In a cam and an offset knife-edge follower, plot the cam profile given the following specifications.

disc cam, minimum radius 35mm, rotation anticlockwise displacement and motion:

0° -150°, 54mm rise with uniform velocity

150° -180°, dwell

180° - 360° , 54mm fall with simple harmonic motion.

Follower: knife-edge, offset 18mm to the right of the cam centre line. (20marks)

Q4 Fig 2 shows a frustrum of a right cone.

Draw (i) this elevation,

(ii) a plan and an

(iii) End elevation viewed in the direction of arrow 'P'.

(20marks)

