MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL ENGINEERING

ENGINEERING DRAWING

DATE:30/5/2017 **TIME: 8.30-10.30 AM**

INSTRUCTIONS

Answer Question One and Any Other Two Questions

You need the following for this examination;

- **Drawing instruments**
- **Drawing paper(s)**

SECTION A (compulsory)

1. a) Figure 1 shows exploded parts of a belt pulley assembly. Assemble them and draw the following views in First angle projection:-
   i. A front elevation along cutting plane X-X
   ii. A plan.
   iii. An end elevation (20 marks)

   b) Draw an ellipse with major and minor diameters of 100 mm and 60 mm respectively. (5 marks)

   c) Draw an Archimedean spiral to cover a linear distance of 70 mm from the fixed point. . (5 marks)

SECTION B (ANSWER ANY TWO QUESTIONS FROM THIS SECTION).

2. Using the rectangle method, draw an ellipse with a major and minor axes of 110 mm and 70 mm respectively. (20 marks)
3. Figure 2 shows a link mechanism APDBC pin-jointed at D. Crank OA rotates about A as link CP reciprocates through swiveling joint B. Draw the locus of points C and P as crank AD makes a complete rotation (20 marks)
4. Draw an epicycloids of a rolling circle of radius 40 mm and a base circle of radius 100 mm. (20 marks)
5. Construct an involute for a circle of diameter 50 mm. (20 marks)