MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CERTIFICATE IN MECHANICAL ENGINEERING

CERTIFICATE IN AUTOMOTIVE ENGINEERING

1503/104: TECHNICAL DRAWING

DATE: 15/4/2019   **TIME: 2.30-5.30 PM**

INSTRUCTIONS:

   Answer Question One (Compulsory) and Any Other Two Questions

QUESTION ONE (40 MARKS)

Shown in figure 1 is a machined block drawn in isometric projection. Draw the following in first angle projection:

a)   A front elevation in the direction of arrow F

b)   A sectional end elevation on cutting plane X-X

c)   A plan.

Include SIX major dimensions.

QUESTION TWO (20 MARKS)

Construct the following:

a)   Archimedean spiral whose radius will increase from zero to 90 mm.

b)   Epicycloid of rolling circle of radius of 30mm on a curved surface of radius 100mm.

QUESTION THREE (20 MARKS)

Draw the isometric block shown in figure 2.

QUESTION FOUR (20 MARKS)

Figure 3 shows orthographic views of a machine block. Draw the block with corner X at the lowest point.

QUESTION FIVE (20 MARKS)

Draw:

a)   An ellipse with major and minor diameters of 110 mm and 70 mm respectively using any method.

b)   A parabola whose focus to directrix distance is 50 mm.