



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

SECOND YEAR SECOND TERM EXAMINATION FOR

CERTIFICATE IN AUTOMOTIVE/MECHANICAL ENGINEERING.

TECHNICAL DRAWING

MODULE II

DATE: 31/8/2021

TIME: 2:30 – 5:30 AM

INSTRUCTIONS:

ANSWER ALL THE QUESTIONS

1. Two circles are shown in figure 1, find the center of a circle radius R that blends the two circles internally. (20 marks)
2. Draw an INVOLUTE on a circle of radius of 18 mm. (20 marks)
3. Shown in figure 2 is the profile of a template. Enlarge its area by $\frac{7}{4}$ taking A as the center of enlargement. (20 marks)
4. (a) Convert the triangle shown in figure 3 to a square
(b) Draw the isometric block shown in figure 4. (20 marks)
5. A wheel with a point A initially in contact with the ground rolls without slipping on a flat straight path. Draw the locus of point A after ONE convolution of the wheel. (20 marks)