LOKMANYA TILAK COLLEGE OF ENGINEERING

MECHANICAL ENGINEERING DEPARTMENT

ASSIGNMENT NO.: 2 (Sketch Book) Div.: C

Title: Engineering Curves (Involutes, Cycloid and Helix)

Submission Schedule: From 18th **April 2022 TO** 21st **April 2022**

Q 1. Draw a cycloid of a point on the generating circle of 40 mm diameter. The initial position of the point is 25 mm above the straight line and towards the right of the center. Draw the normal and tangent to the curve at a point on it 30 mm above the straight line.

Q 2. A circle of 50 mm diameter rolls on a horizontal line for half a revolution and then on a vertical line for another half revolution without slipping. Draw the curve traced out by point P on the circumference of the circle considering the initial position of point p is contact with the horizontal line.

Q 3. A point P is moving along the curved surface of a cylinder with a uniform speed and parallel to the axis. The cylinder is rotating about its axis with a uniform angular velocity in clockwise direction. From bottom of the cylinder, point 'P' is covering a distance of 60 mm in one rotation of the cylinder(Pitch). Plot the locus of 'P' for one and half complete rotation of the cylinder. Take cylinder diameter equal as 50 mm. Name the plotted curve.

Q4. Draw an involute of a regular pentagon having side 30 mm. Also draw tangent and normal through any point on the curve.

D.O.C: 15/04/2022

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