

ENGINEERING CURVES

6

6-1 INTRODUCTION

Roulettes are curves generated by the rolling contact of one curve or line on another curve or line. There are infinite varieties of roulettes. The most common types of roulettes used in engineering applications are cycloidal curves, involutes and spirals.

MULTIPLE CHOICE QUESTIONS

Choose the most appropriate answer out of the given alternatives:

- i) The locus of a point lying on the circumference of the circle which rolls on a straight line is known as
(a) Cycloid (b) Hypocycloid (c) Epicycloid (d) Circle
- ii) Name the curve traced out by a point on the circumference of a circle, which rolls outside another circle of same diameter
(a) Cycloid (b) Hypocycloid (c) Cardioid (d) None of these
- iii) Name the curve traced out by a point on the circumference of a circle, which rolls on another circle of larger diameter
(a) Epicycloid (b) Involute (c) Spiral (d) None of these
- iv) When a circle rolls inside another circle of twice its diameter, the curve traced out by a point on the circumference of the rolling circle will be
(a) Straight line (b) Epicycloid (c) Spiral (d) None of these
- v) The curve traced by a point on a straight line which rolls on a circle, without slipping is called
(a) Cycloid (b) Epicycloid (c) Hypocycloid (d) Involute
- vi) When a straight line rolls on the circumference of a semi-circle, the locus of its end point is called
(a) Cycloid (b) Epicycloid (c) Hypocycloid (d) Involute
- vii) Involute curve is used in
(a) Chains (b) Gears (c) Cams (d) Pulleys

- viii) When a pendulum oscillates, name the locus of a point moving along its string at a constant speed
(a) Cycloid (b) Involute (c) Spiral (d) Helix
- ix) The geometrical name of the curvature of the coil used in spiral binding is
(a) Archimedean Spiral (b) Logarithmic Spiral
(c) Involute (d) None of these
- x) Which of the following methods is **not** used for drawing elliptical curves?
(a) Intersecting arcs method (b) Concentric circles method
(c) Oblong method (d) Tangent method

Answer: (i) a (ii) c (iii) a (iv) a (v) d (vi) d (vii) b (viii) c (ix) d (x) d