

1. Which one of the following types of cams has either a convex or a concave surface?
 - a. Conjugate cam
 - b. Spherical cam
 - c. Globoidal cam
 - d. Spirral cam
2. A spring –mass system consists of a spring of stiffness 350 N/m. The mass is 0.35 kg. The mass is displaced 20 mm beyond the equilibrium position. And released. The damping coefficient is 14 N.s/m. What is the undamped natural frequency for the system?
 - a. 15.62 rad/s
 - b. 31.62 rad/s
 - c. 61.62 rad/s
 - d. 81.62 rad/s
3. Which one of the following methods/principles makes use of the fact that the maximum kinetic energy in a vibrating system is equal to the maximum potential energy in free longitudinal vibrations system is equal to the maximum potential energy in free longitudinal vibrations system?
 - a. Equilibrium method
 - b. Rayleigh’s method
 - c. Energy method
 - d. D’ Alembert’s principle
4. In a spring-controlled governor, the controlling force curve is a straight line, The balls are 450 mm apart when the controlling force is 1450 N and 250 mm when it is 750 N. The mass of each ball is 8 kg.
 - 4a. What is the speed at which the governor runs when the balls are 300 mm apart?
 - a. 65.1 rpm
 - b. 185.5 rpm
 - c. 265.1 rpm
 - d. 320.5 rpm
 - 4b. What is the isochrous speed.
 - a. 282.47 rpm
 - b. 398.42 rpm
 - c. 433.33 rpm
 - d. 598.52 rpm
5. What is the initial tension to be increased to make the governor isochronous?
 - a. 75 N
 - b. 285 N
 - c. 125 N
 - d. 360 N