

V.P. & R.P.T.P.Science College

Vallabh Vidyanagar 388 120

Physics Department

Course: US01CPHY21

Unit-2

Waves and Oscillations

Assignment

Multiple Choice Questions:

- (1) Ultrasonics waves are _____
 - (a) Longitudinal waves
 - (b) Progressive wave
 - (c) Transverse waves
 - (d) Inverse waves
- (2) Ultrasonic waves move faster than the sound waves. The sentence is _____
 - (a) True
 - (b) False
 - (c) Irrelevant
 - (d) None of these
- (3) In 1917, _____ has designed a piezoelectric generator.
 - (a) Pierre Curie and Jacques Curie
 - (b) Langevin
 - (c) G W Pierce
 - (d) Piezo
- (4) The magnetostriction effect is also known as _____.
 - (a) Peltier effect
 - (b) Sibac effect
 - (c) Joule effect
 - (d) Compton effect
- (5) Ultrasonic waves produce _____ in liquid.
 - (a) Interference
 - (b) Diffraction
 - (c) Non- disruptive effects
 - (d) Disruptive effects
- (6) The time period of simple pendulum having infinite length is _____.
 - (a) zero
 - (b) one
 - (c) infinite
 - (d) half
- (7) The equivalent simple pendulum length is always greater than _____.
 - (a) Length of body
 - (b) Simple pendulum length
 - (c) Breadth of the body
 - (d) Height of the body
- (8) The periodic time of the compound pendulum will be _____ when the axis of rotation passing through CG.
 - (a) remains same
 - (b) maximum
 - (c) none of these
 - (d) minimum
- (9) The time period of compound pendulum donot depend on _____ of the body
 - (a) size
 - (b) shape
 - (c) length
 - (d) mass
- (10) The Kater's pendulum is also known as _____pendulum.
 - (a) simple
 - (b) conical
 - (c) reversible
 - (d) Torsional

Short Questions:

- (1) Define audible, infrasonic and ultrasonic waves.
- (2) Define piezoelectric effect.
- (3) Explain function of SONAR.
- (4) State the drawbacks of a Simple Pendulum.
- (5) What is centre of Percussion?

Long Questions:

- (1) Describe the Ultrasonic generator using a magnetostriction oscillator.
- (2) What is a compound pendulum? Deduce an expression for its periodic time.
- (3) Obtain the collinear points with the centre of gravity about which the time period is same.
- (4) What is Bar Pendulum? Describe the experiment for determination of g and k . Also give Ferguson correction for the determination of k .
- (5) Calculate the capacitance to produce ultrasonic waves of 10^6 Hz with an inductance of 1 henry.