
FAST National University of Computer and Emerging Sciences, Lahore

Course: EE-117: Applied Physics

Session: Fall 2019

Section: B

Date: 16 October, 2019

Instrument: Quiz-2

Instructor: Muhammad Shiraz Ahmad

Total Points: 25

Duration: 20 minutes.

Name: _____

Roll No.: _____

Note: At the slightest suspicion of cheating, your submission will be marked zero.

Q. 1 (12 points) The position function $x = (6 \text{ m}) \cos [(3\pi \text{ rad s}^{-1})t + \pi/3 \text{ rad}]$ gives the simple harmonic motion of a body. At $t = 2.0 \text{ s}$, what are the (a) displacement, (b) velocity, (c) acceleration, and (d) phase of the motion? Also, what are the (e) frequency and (f) period of the motion?



Q. 2 (5 points) A balloon performs SHM in a vertical line with a period of 40 seconds. Its height varies between 800 and 850 meters. Find the speed of the balloon when it is at 820 meters.



Q. 3 (8 points) Derive the general expression for the time period of Torsional Pendulum.