FAST National University of Computer and Emerging Sciences, Lahore

Course: EE–117: Applied Physics

Session: Fall 2019

Section: F

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) An oscillator consists of a block of mass $0.500\,\text{kg}$ connected to a spring.When set into oscillation with amplitude $35.0\,\text{cm}$, the oscillator repeats its motion every $0.500\,\text{s}$. Find the (a) period, (b) frequency, (c) angular frequency, (d) spring constant, (e) maximum speed, and (f) magnitude of the maximum force on the block from the spring.

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) Show that time period of simple pendulum is

$$T = 2\pi\sqrt{\frac{L}{g}}$$

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