國立東華大學

Department of Physics
National Dong Hwa University, 1, Sec. 2,
Da Hsueh Rd., Shou-Feng, Hualien, 97401, Taiwan

General Physics-I, Quiz 4
PHYS1000AA, AB, AC, Fall Semester-106
2017-12-26

St. ID:_____,   Name:_____

Chapter15-16, Serway; ABSOLUTELY NO CHEATING!
Please write down the answers on the blank space or on the back of this paper. Answer should be in english. [ ] indicates the question points.

Q1. (a) Write down the equation of motion (second order differential) for damping oscillation of a spring and its possible solution. (b) It is well known that most cars have the shock absorber used as a damped oscillator to balance the car while you travel through a zigzag path. For a strong jerking if the spring is in damped oscillation, calculate the frequency for that oscillation. Let the damping coefficient b = 3N.s/m, the mass of the spring m= 20 kg and spring constant k= 2.0×10^5 N/m. [10+10+30=50]

Path of motion
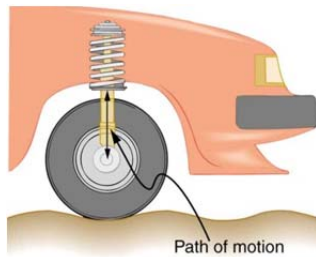
Q2. (a) What is the difference between transverse and longitudinal wave? Give an example for each of the wave. (b) When you play a Guitar, you produce the transverse wave in the string. Suppose a string length is 1 m and for your plucking at the end of the string if a transverse pulse is produced and it makes 4 trips down and back along the string by 1s, what will be the tension in the string? Let the string has the mass of 0.2 kg. [10+10+ 30=50]

General Physics I Quiz 4 (106/ 2017).
Dept. of Physics, NDHU.

1