



United International University

School of Science and Engineering

Quiz#03; Year 2020; Semester: Fall

Course: PHY 105; Title: Physics

Full Marks: 20; Section: A; Time: 20 minutes

Name:	ID:	Date:
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1. What is Longitudinal wave? Draw figure, if necessary. Give three examples. **1.5**
2. Write down differential equation of DHM. How many types of damped harmonic motion? Write down their name. How can you get SHM from DHM? Write down the mathematical equation for α in a DHM equation which exhibits mechanical system. **1.5**
3. The equation of travelling wave is $y = 10 \sin(10t - \frac{\pi}{6}x)$. Calculate the (i) amplitude of the vibrating particle, (ii) wave velocity, (ii) wave length, (iv) frequency and (v) time period. **3**
4. A body oscillates with SHM according to the progressive equation $x = 10 \cos(3\pi t + \frac{\pi}{3})$. Find the wavelength. **1**
5. A condenser of capacity $1 \mu\text{F}$, an inductance of 0.2 H and a resistance of 700Ω are joined in series. Is the circuit oscillatory? Which type of oscillation it is? What is its resonant frequency f_o ? **3**