

University of Information Technology & Sciences
B.Sc. Engineering Program (CSE, 1st Semester)
Spring-2024 (January-June)
Class Test-1

Course Title: Engineering Physics

Total marks : 10

Course Code: (PHY -0533111)

Time: 30 minutes

(Even ID will answer ques no-1 & Odd ID ques no-2)

1. (a) Define time period and frequency of SHO. 2
- (b) Write the characteristics of simple harmonic oscillation. 3
- (c) Derive differential equation of simple harmonic oscillator and write its solution. 5
2. (a) What is meant by wave and oscillations? 2
- (b) Derive an expression for average kinetic energy of oscillating particle 5
- (c) A particle performs simple harmonic motion by $x = 20 \sin(\omega t + \delta)$; if time period is 30 seconds then find the phase angle at $t = 5$ seconds. 3

$$\omega = 2\pi n$$
$$= \frac{2\pi}{T}$$
$$T = \frac{1}{n}$$