

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Final Laboratory Examination for General Physics (3)

PHYS 203

1429/1430H

1st semester

| Mark | |
|-------------|-------|
| Name: _____ | |
| ID# _____ | _____ |

I) Find the gravitational acceleration and the rotational inertia (moment of inertia) for the compound pendulum (Use *only* one value of T for your calculations $T=1.6$ s) Take measurements for 5 points *only* on each side.

II) Calculate the density of the given liquid. Write down the liquid type.

Liquid: _____

I) Find the linear expansion coefficient for the given metal rod.

II) Find the force constant of the spring using Hooke's law.

I) Find thermal conductivity of rubber.

(Note that: $c_w=4180 \text{ J.kg}^{-1}.\text{K}^{-1}$ and $c_{\text{cal}}=385 \text{ J.kg}^{-1}.\text{K}^{-1}$)

II) Find the frequency of the vibrating string using Meld's experiment.

III) Given the following data, calculate the viscosity of glycerol:

Glycerol density (ρ_f) = 1261 kg/m³

Ball's density (ρ_b) = 7874 kg/m³

Ball's diameter: 11.5 mm

The ball falls a distance of 80 cm in 2.5 s.