جامعة بيرزيت

BIRZEIT UNIVERSITY

Physics Lab 211

Experiment No. 1

Newton's Laws of Motion

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Data Sheet:

$No.$	E $(dynes)$	R $(dynes)$	Q $(dynes)$	θ_1	θ_2
1	80000	50000	50000	37	35
2	120000	100000	70000	35	54

$Rcos(\theta_1) + Qcos(\theta_2)$	$Rsin(\theta_1) - Qsin(\theta_2)$	U_1	U_2
80889	1412	1412	889
123060	726	726	3060

Calculations:

First Graph:

$Rcos(\theta_1) + Qcos(\theta_2) = (50000 \times \cos(37^\circ)) + (50000 \times \cos(35^\circ)) = 80889\ dynes$

$Rsin(\theta_1) - Qsin(\theta_2) = (50000 \times \sin(37^\circ)) - (50000 \times \sin(35^\circ)) = 1412\ dynes$

$U_1 = Rsin(\theta_1) - Qsin(\theta_2) = 1412\ dynes$

$U_2 = E_{meas} - |[Rcos(\theta_1) + Qcos(\theta_2)]| = |80000 - 80889| = 889\ dynes$

Second Graph:

$Rcos(\theta_1) + Qcos(\theta_2) = (100000 \times \cos(35^\circ)) + (70000 \times \cos(54^\circ) = 123060\ dynes$

$Rsin(\theta_1) - Qsin(\theta_2) = (100000 \times \sin(35^\circ)) - (70000 \times \sin(54^\circ)) = 726\ dynes$

$U_1 = Rsin(\theta_1) - Qsin(\theta_2) = 726\ dynes$

$U_2 = E_{meas} - |[Rcos(\theta_1) + Qcos(\theta_2)]| = |120000 - 123060| = 3060\ dynes$

Result & Conclusion:

1) $U_1 = 1412\ dynes, U_2 = 889\ dynes$

2) $U_1 = 726\ dynes, U_2 = 3060\ dynes$

3) $T_1 =, T_2 =$