EXPERIMENT - 4

Aim → To find the value of g in lab.

Apparatus Required → Simple Pendulum, stopwatch and centimeter scale

Formula Used → $T = 2\pi\sqrt{\frac{l}{g}}$

$$T^2 = \frac{4\pi^2 l}{g}$$

$$g = \frac{4\pi^2 l}{T^2}$$

S.N	Length l	No. of oscillations	time of t 25 oscillations	$T = t/25$
1.	60.0cm	25	40 sec	$T = \frac{40}{25} = 1.6$
2.	70.0cm	25	45 sec	$T = \frac{45}{25} = 1.8$
3.	80.0cm	25	45 sec	$T = \frac{45}{25} = 1.8$
4.	90.0cm	25	50 sec	$T = \frac{50}{25} = 2.0$

$g_1 = 9.26\ ms^{-2}$
$g_2 = 9.86\ ms^{-2}$
$g_3 = 9.86\ ms^{-2}$
$g_4 = 8.88\ ms^{-2}$

mean $g = \frac{9.26 + 9.86 + 9.86 + 8.88}{4}$

$= 9.465\ ms^{-2}$ Ans

Teacher's Signature .....