Answer **all** the questions in the spaces provided.

1 **(a)** Distinguish between *precision* and *accuracy*.

....

....

....

.... [2]

(b) A simple pendulum consists of a mass attached to a light inextensible string of length *L*. The pendulum is secured to a fixed point and made to undergo oscillations when displaced by a small angle.

The acceleration of free fall *g* can be found by the following equation:

$$T = 2\pi\sqrt{\frac{L}{g}}$$

where *T* is the period of oscillation.

The following data is given:
$L = 50.0 \pm 0.2$ cm
$T = 1.42 \pm 0.01$ s

(i) Determine *g* with its associated uncertainty. Give your answer to an appropriate number of significant figures.

g = ………….………… ± …………..………. m s^{-2} [3]

(ii) When finding period *T* using a stopwatch, it is a good practice to time a large number of oscillations such that the total time taken is more than 20 seconds.

Explain why this should be done.

....

....

.... [1]

[Total: 6]

[Turn over