



Higher Uncertainties Answers

1. When the measurements are in the same way giving consistently incorrect readings.

2. a) Random variations which can affect consecutive readings.
b) Random Uncertainty = (max reading – min reading)/No. of readings.

3. a) Analogue scale = \pm half of the least scale division.
b) Digital scale = ± 1 in the least significant digit displayed.

4. a) 10.04 s.
b) ± 0.06 s.
c) (10.04 ± 0.06) s.

5. a) 241 m.
b) ± 5 m.
c) (241 ± 5) m.

6. a) 0.89 s.
b) ± 0.02 s.
c) (0.89 ± 0.02) s.

7. a) 5600Ω .

b) $\pm 4\%$.

c) $(5600 \pm 224) \Omega$.

8. a) 1.25 N .

b) $\pm 1\%$.

c) $(1.25 \pm 0.01) \text{ N}$.

9. a) $4 \times 10^{-16} \text{ J}$.

b) $\pm 6.25\%$.

c) $(4.00 \pm 0.25) \times 10^{-16} \text{ J}$.

10. a) 1.41 s .

b) $\pm 0.01 \text{ s}$.

c) $(1.41 \pm 0.01) \text{ s}$.

d) 0.18 ms^{-1} .

e) $\pm 4\%$.

f) $(0.18 \pm 0.01) \text{ ms}^{-1}$.