

UNITS AND MEASUREMENT

1. What is the difference between 4.0 & 4.000?
2. Which of the distance measurements is most precise & why?
(i) 500.0 m (ii) 0.0005 m (iii) 6.00 m
3. Find the number of significant figures in the following results:
(i) 2.924927×10^8 m/s (ii) 3.0120 s
4. The mass of a body is 275.32 g & its volume is 36.61 cm^3 . Express its density upto appropriate significant figures.
5. If Energy, velocity & Time are the fundamental units, find the dimension of surface tension?
6. For the determination of 'g' using simple pendulum which of either L or T have larger effect on the value of 'g' thus obtained & why?
7. If a unit of force, velocity & energy are 100 dyne, 10 cm/s & 400 ergs. What will be the units of mass, length & time?
8. Force (F) & density (d) are related as : $F = A / (B + Vd)$. Find the dimensions of A & B.
9. A physical quantity Q is given by $Q = (A^2 \cdot B^{3/2}) / C^4 \cdot D^{1/2}$
The percentage error in A, B, C & D are 1%, 2%, 4% & 2%. Find the percentage error in Q.
10. Assuming that the mass (m) of a stone that can be moved with flowing water depends only on the velocity v, the density d of water & g. Show that m varies with the sixth power of the velocity of flow.