## Handling Large/Small Number

Although many of you may think this seems like a trivial exercise, each year a large number of marks are lost because students fail to handle numbers correctly and end up with ridiculous answers. Please try the sums below and make sure you get the right answers.

$$\frac{1500nm^2 \times 4.63 \times 10^{-9}}{3 \times 10^8} = 3.47 \times 10^{-29} m^2$$

$$154nm \times 12GHz \times 90\mu m = 0.166Hz.m^2$$

$$10 \text{ Log } (4 \pi \text{ d } /\lambda)^2 = 136 \text{ dB}$$

where d=25km, f= 6000, $\gamma$=1, $\lambda$=0.05

$$L = (P_t - S - P_r - m)/X = 162.5\text{km}$$

where $P_t$: +3 dBm, X= 0.2 dB/km, S= 0.5 dB, $P_r$ = -32 dBm, m=2 dB