

Ex 6

- Q1
- (a) $3.0 \times 10^{-2} = 0.03$
 - (b) $4.12 \times 10^{-4} = 0.000412$
 - (c) $3.57 \times 10^5 = 357000$
 - (d) $2 \times 10^6 = 2000000$
 - (e) $5.6 \times 10^{-7} = 0.00000056$
 - (f) $6 \times 10^{-5} = 0.00006$
 - (g) $1 \times 10^{-4} = 0.0001$
 - (h) $1 \times 10^5 = 100000$
 - (i) $3.3 \times 10^0 = 3.3$ [$10^0 = 1$]
 - (j) $7.8 \times 10^8 = 780000000$

Q2

(a) order of Magnitude = 15

(b) " " " = 100

Q3 (a) $E = mc^2$ $E = (7.2 \times 10^{-27}) \times (3 \times 10^8)^2 = 21.6 \times 10^{-19}$
 $= 2.16 \times 10^{-18}$ [-20]

(b) $f = \frac{E}{h}$ $f = \frac{6.4 \times 10^{-19}}{6.6 \times 10^{-34}} = 0.96 \times 10^{15} = 9.6 \times 10^{14}$ [15]

(c) $\frac{5.98 \times 10^{24}}{5.9 \times 10^9} \rightarrow 25$ Diff is [15]

Q4

(a) (i) $4357 = 4.357 \times 10^3 \approx 1000$

(ii) order of Magnitude = 3

(iii) $270134 = 2.70134 \times 10^5 \rightarrow 5$

(b) $4357 \times 0.62 = 2701.34$

(i) It is 100 times too big

(ii) Mult by 62

(iii) 2701.34 miles

Q5 $649739 = 6.49739 \times 10^5$
order of Magnitude = 6.
minus as is negative.

Q6 Box = $200\text{cm} \times 200\text{cm} \times 200\text{cm}$
 $= 2 \times 10^2 \times 2 \times 10^2 \times 2 \times 10^2 = 8 \times 10^6$
[7]

Notes: $13\text{cm} \times 7.2\text{cm} \times 10^{-2}\text{cm}$
 $= 1.3 \times 10^1 \times 7.2 \times 10^0 \times 1 \times 10^{-2} = 9.36 \times 10^{-1}$
[0]

Order of Magnitude = 7

$10^7 = 10,000,000$ Notes.