| Standard Form Mark Scheme |  |  |
| :---: | :---: | :---: |
| 1(a) | 1,240,000 | [1] |
| 1(b) | $7.42 \times 10^{5}$ | [1] |
| 1(c) | 0.00000063 | [1] |
| 2(a) | 0.00099 | [1] |
| 2(b) | $6.8 \times 10^{-2}$ | [1] |
| 2(c) | $6 \times 9 \times 10^{3} \times 10^{4}=54 \times 10^{7}$ | [1] Correct answer |
|  | $5.4 \times 10^{8}$ | [1] Converted to standard form |
| 3(a) | 50 | [1] |
| 3(b) | 0.027027 | [1] |
| 3(c) | $2 \times 10^{2}$ | [1] Correct answer |
|  | 200 | [1] Converted to a number |
| 4(a) | Four hundred and seventy thousand | [1] |
| 4(b) | $7.2 \times 10^{2}=720$ | [1] Correct conversion |
|  | $\begin{aligned} & 4.66 \times 10^{5}=466,000 \\ & 3.3 \times 10^{-4}=0.00033 \end{aligned}$ | [1] Correct conversions |
|  | $\begin{array}{llllll}0.00033 & 0.87 & 46 & 720 & 6,311 & 466,000\end{array}$ | [1] Correct order |
| 5 | $1.1 \div 1.2=11 \div 12=0.916$ | [1] Correct inference from question. |
|  | $10^{9} \div 10^{3}=10^{6}$ | [1] Multiplication of $10^{n}$ |
|  | $\begin{gathered} 0.91 \dot{6}=9.1 \dot{6} \times 10^{-1} \\ 9.1 \dot{6} \times 10^{-1} \times 10^{6} \\ 9.17 \times 10^{5} \text { times faster (to } 3 \text { s.f.) } \end{gathered}$ | [1] Correct answer |
| 6 | $k=\frac{2 \times 6 \times 10^{4} \times 10^{6}}{6 \times 10^{6}-2 \times 10^{4}}$ | [1] Substitute in values for a and b |
|  | $=\frac{12 \times 10^{10}}{6,000,000-100,000}=\frac{1.2 \times 10^{11}}{5,900,000}$ | [1] Calculation |
|  | $=\frac{1.2 \times 10^{11}}{5.9 \times 10^{6}}$ | [1] Conversion to standard form |
|  | $\begin{gathered} 1.2 \div 5.9 \approx 0.20 \\ 10^{11} \div 10^{6}=10^{5} \end{gathered}$ | [1] Inferred from hint |
|  | $\begin{gathered} 0.20 \times 10^{5} \\ \text { Answer }=2.0 \times 10^{4} \end{gathered}$ | [1] Final answer |
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