| Velocity - Time Graphs Mark Scheme |  |  |
| :---: | :---: | :---: |
| 1(a) | $A$ or $D$ or $E$ | [1] Sections of acceleration |
| 1(b) | $B$ or $F$ or $H$ | [1] Sections of constant velocity |
| 1(c) | D | [1] Section of greatest acceleration |
| 1(d) | $C$ and $G$ | [1] Two sections with the same magnitude and direction of acceleration |
| 2(a) | $\frac{6}{10 \times 60}=\frac{6}{600}=\frac{1}{100}=0.01$ | [1] Steepest section of the graph |
|  | $0.01 \mathrm{~m} / \mathrm{s}$ | [1] Correct units |
| 2(b) |  | [1] Split graph into appropriate sections |
| $\begin{aligned} & A: \frac{1}{2} \times 12 \times 30 \times 60=10800 \\ & E: \frac{1}{2} \times 20 \times 10 \times 60=6000 \end{aligned}$ |  | [1] Area of first and last triangle |
| B: $10 \times 12 \times 60=7200$ |  | [1] Area of rectangular section |
| $\begin{aligned} & C: \frac{1}{2} \times 10 \times(12+4) \times 60=4800 \\ & D: \frac{1}{2} \times 20 \times(10+4) \times 60=8400 \end{aligned}$ |  | [1] Area of parallelograms |
| Total distance $=37200 \mathrm{~m}$ |  | [1] Sum of all areas |
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