

Chapter 10 Linear motion. (Revision Questions page 302). Multiple Choice Answers

Q	Ans	Explanation
1	B	Distance = area under $v-t$ graph. Hence area = $4 \times \frac{20}{2}$ = 40 m
2	D	Distance = area under graph; acceleration is gradient
3	C	Displacement is just change in position from P to Q which is 8 m. You don't have to work out the perimeter of the semicircle as you are not working out distance.
4	C	Because for the upward and downward journeys the magnitude of the acceleration, and the distance are the same, and the final speed up is the same as the starting speed down, so the initial speed up = final speed down. It is all very symmetrical.
5	B	Use $v = u + at$, with $a = 2 \text{ m s}^{-2}$, $u = 0 \text{ m s}^{-1}$, $v = 20 \text{ m s}^{-1}$. Calculate t . $t = \frac{v-u}{a} = \frac{20-0}{2} = 10 \text{ s}$

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