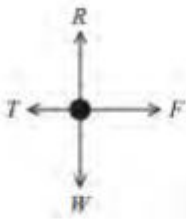


Forces MCQ MS 1

1	<p>C drag + weight – upthrust = 0</p> <p>Incorrect Answers: A – incorrect re-arrangement of correct equation B – incorrect re-arrangement of correct equation D – incorrect re-arrangement of correct equation</p>	1
2	<p>A increase but then remain constant</p> <p>Incorrect Answers: the reading on the scales (assuming it is in newtons) = $ma + mg$. There is only a change in the reading as the lift starts its motion i.e. the reading goes from mg to $mg + ma$ B – reading increases from mg to $mg + ma$ at the instant it starts to accelerate only C – reading will increase and not decrease (and then remain constant) D – reading will increase and not decrease</p>	1
3	<p>D</p>  <p>Incorrect Answers: A – Tension and friction the wrong way round but the relative sizes are correct B – Tension and friction the wrong way round and the relative sizes are incorrect C – Tension and friction the correct way round but the relative sizes are incorrect</p>	1
4	<p>D – N, as upthrust is a force.</p> <p>Incorrect answers: A – $N\ m^{-2}$ is a unit of pressure. B – $N\ m^{-1}$ is a unit of spring constant. C – $N\ m$ is a unit of work.</p>	1
5	<p>D – $mg - U - D = ma$ as this is $\Sigma F = ma$</p> <p>Incorrect Answers: A – since this equation assumes the acceleration is zero. B – since this equation gives the total upward force while the acceleration is downwards. C – since this equation assumes the acceleration is zero.</p>	1
6	<p>A – since $R = W\cos\theta$ and when θ increases $\cos\theta$ decreases.</p> <p>Incorrect Answers: B – because $\sin\theta$ is incorrect. C – because R actually decreases. D – because R actually decreases and $\sin\theta$ is incorrect.</p>	1
7	<p>C – as it shows a constant acceleration for the constant resultant force.</p> <p>Incorrect Answers: A – since this graph shows a constant velocity. B – since the graph is plotted against distance, not time. D – since this shows an increasing acceleration.</p>	1