

Question number	Answer	Notes	Marks
9 (a)	(i) elastic (potential) / EPE;		1
	(ii) mechanically/mechanical (working);		1
	(iii) the person/the hand/the fingers;	allow chemical (energy of the student)	1
(b)	(i) curve/variable gradient/not linear;	accept 'unloading and loading are different' ignore reference to proportionality	1
	(ii) line returns to {origin/start/(0,0)/no extension}; when the force is removed/ unloaded;	ignore reference to shape allow returns to original length condone 'when unloading'	2
(c)	(i) substitution into given equation "$v^2 = u^2 + 2as$"; re-arrangement; evaluation; answer to 2 sig figs; e.g. $0^2 = (13)^2 + (2 \times -10 \times s)$ height = $169 / 20$ (height =) 8.45 (m) (height =) 8.5 (m)	ignore sign accept $mgh = \frac{1}{2} m v^2$ independent mark	4
	(ii) any five from: MP1. band has weight; MP2. no drag at highest point; MP3. resultant force is downwards; MP4. band accelerates; MP5. (once band is moving) there is drag MP6. drag increases (while accelerating); MP7. resultant force decreases; MP8. (so) acceleration decreases;	allow 'has gravitational force' ignore 'has gravity' allow 'air resistance' for 'drag' allow 'speed increases' MP6 automatically scores MP5	5

Total for Question 9 = 15 marks