Question number	Answer	Notes	Marks
7 (a) (i)	momentum = mass x velocity;	in words or accepted symbols e.g. p = m x v	1
(ii)	substitution; evaluation; unit; e.g. (p =) 0.000 035 x 8.8 (p =) 0.00031 kg m/s	-1 for power of ten (POT) error kg m/s or Ns 3.08×10^{-4}, 0.000308 N s allow 0.308 g m/s for 3 marks	3
(b) (i)	gravitational (potential) energy = mass x g x height;	allow in standard symbols or in words e.g. GPE = m x g x h reject 'gravity' for g	1
(ii)	substitution; evaluation; e.g. (GPE =) 0.000 035 x 10 x 1200 (GPE =) 0.42 (J)	allow use of g=9.8 / 9.81 420 (J) gets 1 mark max. allow 0.4116, 0.41202	2
(iii)	same answer as (b)(ii);	allow 0.42 (J)	1
(c) (i)	KE = ½ x m x v^2;	allow in accepted symbols or words	1
(ii)	substitution; rearrangement; evaluation; e.g. $0.42 = \frac{0.000\,035 \times v^2}{2}$ $v^2 = 24000$ (v =) 155 (m/s)	ECF from (b)(iii) answer must be seen to at least 3 s.f. award 2 marks max. for reverse calculation of KE = 0.394 (J) 154.919…	3
(iii)	any 2 of: MP1. (raindrop reaches) terminal velocity; MP2. drag / air resistance / friction acts; MP3. energy lost to surroundings / eq.; MP4. (resultant) downwards force is less;	 ignore unqualified "it loses energy" allow 'acceleration is less'	2

Total for question 7 = 14 marks