

Q1. (2018)

a)

03.2		an answer of 833 (N) or 830 (N) scores 2 marks		AO2 6.5.1.3
	weight = 85×9.8		1	
	weight = 833 (N)	allow weight = 830 (N)	1	

b)

03.3		an answer that rounds to 525 (J) scores 2 marks		AO2 6.5.2
	work done = 833×0.63	allow their calculated value from question 03.2 $\times 0.63$	1	
	work done = 525 (J)	allow an answer that is consistent with their calculated value from question 03.2	1	

c)

03.4	work done = 0 (J)		1	AO2 6.5.2
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Q2. (2019)

02.5	Level 2: Scientifically relevant facts, events or processes are identified and given in detail to form an accurate account.	3–4	AO1 6.1.1.1	E
	Level 1: Facts, events or processes are identified and simply stated but their relevance is not clear.	1–2		
	No relevant content.	0		
	Indicative content <ul style="list-style-type: none"> as height changes gravitational potential energy changes gravitational potential energy decreases when moving to the lower bar as speed changes kinetic energy changes kinetic energy increases when moving to the lower bar transfer from gravitational potential energy to kinetic energy as height decreases the sum of the kinetic energy and gravitational potential energy is constant 			

Q3. (2019)

04.7	work done = force $\times$ distance (along the line of action of the force)	allow $W = F s$ allow any correct re-arrangement	1	AO1 6.5.2
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Q4. (2019)

04.8		an answer of 450 000 scores 3 marks		AO2 6.5.2
	$F = 6000 \text{ N}$		1	
	$W = 6000 \times 75$	allow a correct substitution using an incorrectly / not converted value of F	1	
	$W = 450\,000 \text{ (J)}$	allow a correct calculation using an incorrectly / not converted value of F	1	

Q5. (2020)

01.6	increases		1	AO2 6.1.1.2
	stays the same		1	6.5.4.1.3
	increases		1	

Q6. (2020)

a)

04.3	$W = 30 \times 250$		1	AO2
	$W = 7500$		1	AO2
	J		1	AO1 6.5.2

b)

04.4	frictional		1	AO1 6.5.2
	kinetic		1	
	chemical		1	

Q7. (2021)

03.4	decreases	this order only	1	AO1 6.5.4.3.4
	increases		1	

Q8. (2021)

05.4	work done = force $\times$ distance		1	AO1 6.5.2
	or			
	$W = Fs$			

Q9. (2021)

05.5	$54\,000\,000 = F \times 270$		1	AO2 6.5.2
	$F = \frac{54\,000\,000}{270}$		1	
	$F = 200\,000 \text{ (N)}$		1	

Q10. (2022)

a)

07.1	work done = force $\times$ distance (along the line of action of the force) or $W = F s$		1	AO1 6.5.2
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b)

07.2	$3\,360\,000 = F \times 42\,000$ $F = \frac{3\,360\,000}{42\,000}$ $F = 80 \text{ (N)}$		1 1 1	AO2 6.5.2
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Q11. (2023)

a)

05.2	$W = 710 \times 0.30$ $W = 213 \text{ Nm}$	allow ecf from question 05.1	1 1	AO2 6.5.2

b)

05.3	force / weight is greater		1	AO3 6.5.2
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c)

05.4	gravitational potential thermal		1 1	AO2 6.5.2
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Q12. (2024)

a)

05.4	work done = force $\times$ distance or $W = Fs$		1	AO1 6.5.2
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b)

05.5	$300\,000 = 6000 \times s$ $s = \frac{300\,000}{6000}$ $s = 50 \text{ (m)}$		1 1 1	AO2 6.5.2
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