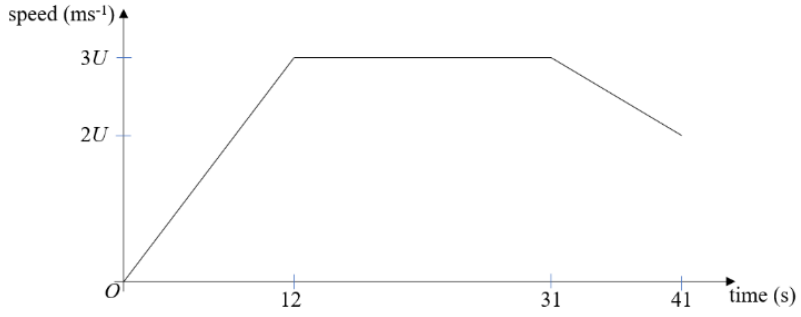
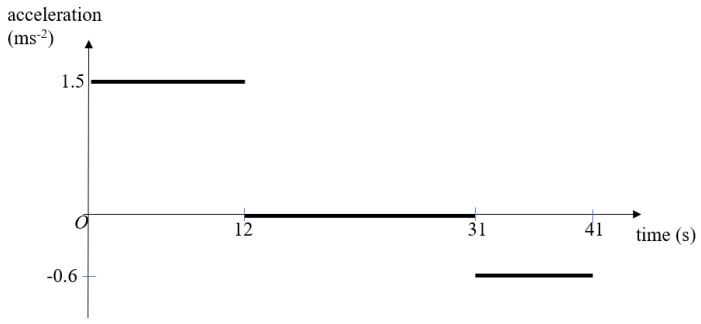
Question Number	Scheme	Marks
2		
(a)	Method to find U	M1
	$600=\frac{12\times 3U}{2}+(19\times 3U)+\left(\frac{3U+2U}{2}\right)10$	A1
	$U=6$ *	A1*
		(3)
(b)	Method to find required distance: $\frac{4\times 6}{2}$	M1
	12 (m)	A1
		(2)
(c)	$1.5\left(\text{ms}^{-2}\right)$	B1
		(1)
(d)	Method to find deceleration, $\pm\frac{6}{10}$	M1
	$0.6\left(\text{ms}^{-2}\right)$	A1
		(2)
(e)		B1 (shape) B1ft (vertical labels)
		(2)
		(10)
	Notes for Question 2	
2(a)		
M1	Complete method using distance of 600 to form an equation in U only. Correct structure of areas. Accept verification approach (i.e. numerical areas sum to 600)	
A1	Correct unsimplified equation.	

A1*	Obtain given answer from complete and correct working. Must be at least one line of working in addition to an equation and the given answer. Must reach "$U = 6$" or "$6 = U$". If using verification, must conclude $U = 6$.	
2(b)		
M1	Complete method to find the distance travelled in the first 4 seconds. May find acceleration and use *suvat*. Eg • $18 = 0 + 12a \quad (\Rightarrow a = 1.5)$ then $6^2 = 0^2 + 2"a"s$ • Area in 12s is 108m, $SF = \frac{1}{9} \Rightarrow Dist = "108" \div 9$	
A1	Correct answer.	
2(c)		
B1	Correct answer.	
2(d)		
M1	Correct method to find the deceleration.	
A1	Correct answer, must be positive.	
2(e)		
B1	Correct shape of acceleration-time graph. Three solid horizontal lines correctly positioned relative to an axis representing positive, negative and zero acceleration. BOD if section $12,, t,, 31$ is difficult to see. B0 if there is a solid vertical line.	
B1ft	Both values present on the vertical axis. Follow through their constant acceleration but must have one above the time axis and one below the time axis (representing a positive and negative acceleration). However, B0 if any graph sections are not horizontal.	