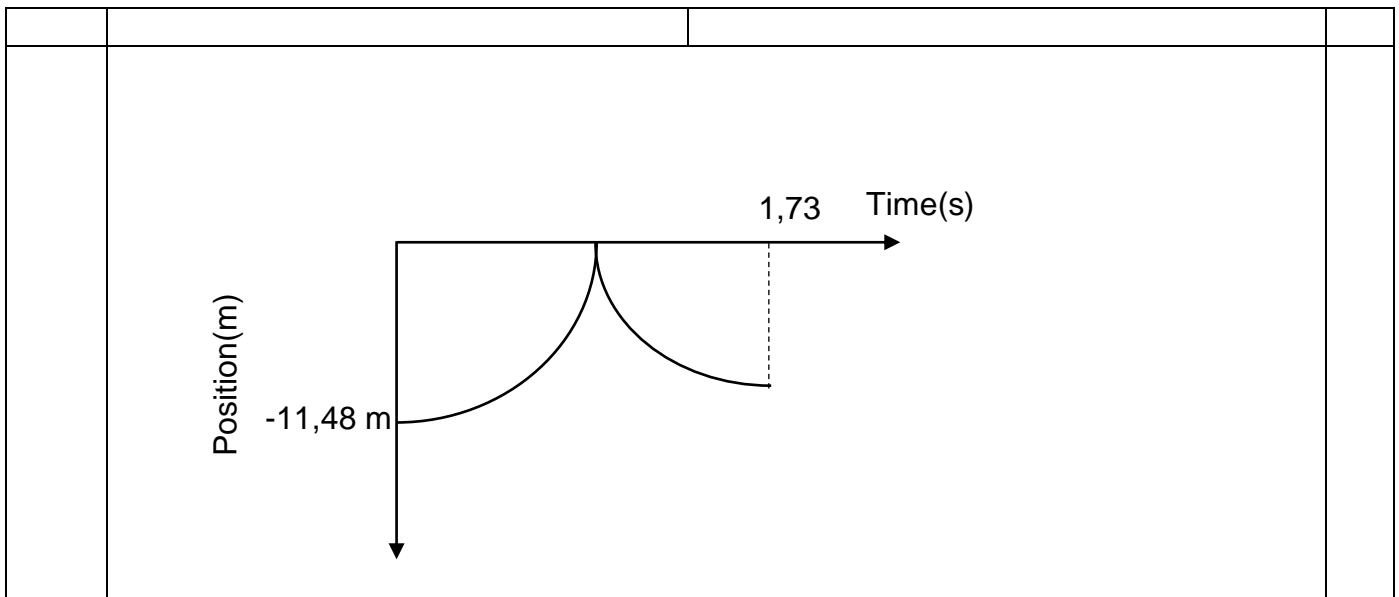


ERRATA – PHYSICAL SCIENCES P1		
AFTER MARKING GUIDELINES DISCUSSION		
QUESTION 2		
2.1	The acceleration is directly proportional to the net force and inversely proportional to the mass of the object. ✓✓ OR The net force is equal to the rate of change in momentum. ✓✓	(2)
2.2	<div style="width: 45%; border: 1px solid black; padding: 5px;"> <p style="text-align: center;">OPTION 1</p> </div> <div style="width: 45%; border: 1px solid black; padding: 5px;"> <p style="text-align: center;">OPTION 2</p> </div>	(5)
	Mark awarded for arrow and label. Do not penalise for length of arrows since drawing is not drawn to scale, Any other additional force(s) $\frac{4}{5}$ If force(s) do not make contact with body. Max $\frac{4}{5}$	
2.4	$F = \frac{Gm_1m_2}{d^2} \checkmark$ $1842,50 \checkmark = \frac{6,67 \times 10^{-11} \times 5,98 \times 10^{24} \times 200}{d^2} \checkmark$ $d = 6579982,80 \text{ m}$ distance from earth surface = $6579982,80 - 6,38 \times 10^3 \checkmark$ distance from earth surface = $6\ 573\ 602,80 \text{ m} (6,57 \times 10^6 \text{ m}) \checkmark$	(5)
		[17]



CRITERIA FOR MARKING	
Correct shape	✓
Height indicated	✓
Time t indicated	✓

QUESTION 5.4 Positive marking from 5.2

$W_{net} = \Delta E_k$ $W_f + W_F + W_{Fg} = \Delta E_k$ $f \times \Delta x \cos \theta + F \Delta x \cos \theta + m g \sin \theta \Delta x \cos \theta = \Delta E_k$ $-852 \checkmark + 62,5 \times 24 \cos 180^\circ + m \times 9,8 \sin 30^\circ \times 24 \cos 0^\circ \checkmark = 0$ $m = 20 \text{ kg} \checkmark$	Any one ✓	(5)
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8.1.3 Conductor A. ✓ It has the lowest resistance. The lower the resistance of a conductor, the more current passes through it. The higher the heat produce in the conductor if potential difference/voltage is constant. ✓ (2)

8.2.3	$R = \frac{V}{I}$ $V = 1,5 \times 3 = 4,5 \text{ V}$ $W = \frac{V^2}{R} \Delta t \checkmark$ $W = \frac{4,5^2}{3} \checkmark \times 180 \checkmark$ $W = 1\ 215 \text{ J} \checkmark$	$R = \frac{V}{I}$ $V = 1,5 \times 3 = 4,5 \text{ V}$ $W = VI \Delta t \checkmark$ $W = 4,5 \times 1,5 \checkmark \times 180 \checkmark$ $W = 1\ 215 \text{ J} \checkmark$	(4)
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9.3	CRITERIA FOR MARKING
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		Correct shape.	✓	
		V _{max} indicated on graph.	✓	
10.2	$E = W_0 + E_{k(max)}$ $hf = W_0 + E_{k(max)}$ $hf = hf_0 + E_{k(max)}$	Any one ✓		
	$6,63 \times 10^{-34} \times 6,16 \times 10^{14} \checkmark = 6,63 \times 10^{-34} f_0 \checkmark + 5,6 \times 10^{-20} \checkmark$ $f_0 = 5,32 \times 10^{14} \text{ Hz}$ $f_0 = \frac{c}{\lambda_0}$ $\frac{1}{\lambda_0} = \frac{5,32 \times 10^{14}}{3 \times 10^8} = 1773333,33 \text{ m}^{-1} \checkmark$			(5)
	$E = W_0 + E_{k(max)}$ $hf = W_0 + E_{k(max)}$ $hf = hf_0 + E_{k(max)}$ $hf = \frac{hc}{\lambda_0} + E_{k(max)}$	Any one ✓		
	$6,63 \times 10^{-34} \times 6,16 \times 10^{14} \checkmark = \frac{6063 \times 10^{-34} \times 3 \times 10^8}{\lambda_0} \checkmark + 5,6 \times 10^{-20} \checkmark$ $\frac{1}{\lambda_0} = 1771784,82 \text{ m}^{-1} \checkmark$			(5)