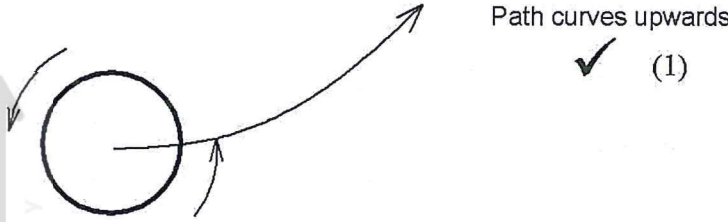
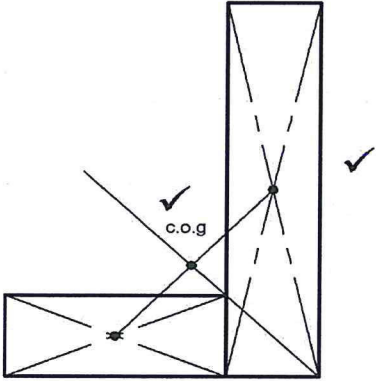
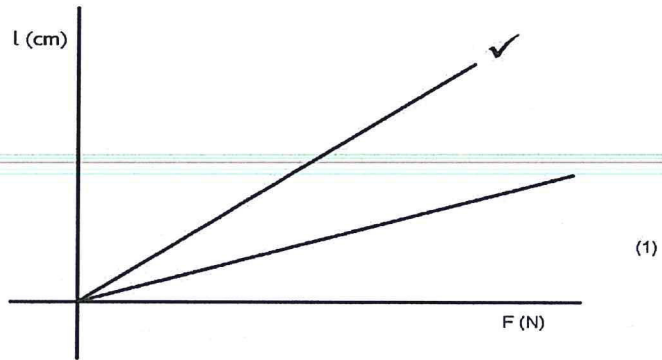


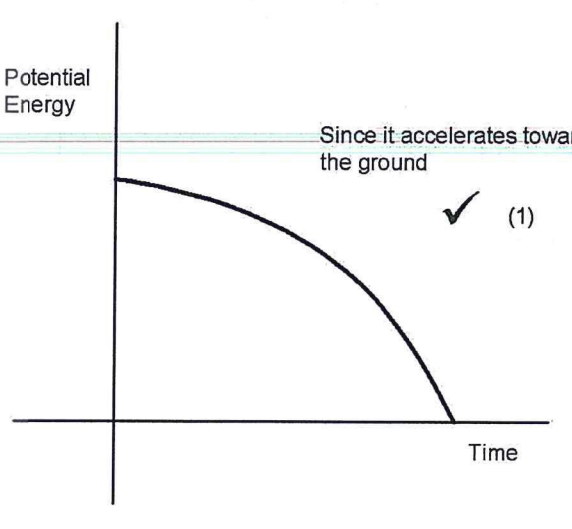
4.6 PHYSICS (232)

4.6.1 Physics Paper 1 (232/1)

SECTION A (25 MARKS)

1.	Earth's gravity is higher than the moon's gravity.	(1 mark)
2.	$7.3 - 6.0 = 1.3\text{cm}$	(1 mark)
3.	<ul style="list-style-type: none"> - Using the same oil spilled, to measure a known volume. - Determine the area of spread of the measured volume (on the same water (sample)). - Estimate the area of spread on the sea. 	(3 marks)
4.	The tube will be very long ✓ since water has much lower density ✓ than mercury.	(2 marks)
5.	Milk particles move to occupy the spaces between the water particles through diffusion. ✓	(1 mark)
6.	Brass contracts more ✓ than invar hence contracts leaving the side with invar longer ✓ hence the curve.	(2 marks)
7.	<p>Volume of water displaced = $0.5 \times 0.5 \times 0.5$</p> <p style="padding-left: 100px;">$= 0.125\text{m}^3$</p> <p>W of cube. $=$ weight of water displaced</p> <p>(a floating body)</p> <p style="padding-left: 100px;">$= 1 \times 125000\text{g}$ ✓</p> <p style="padding-left: 100px;">$= 125\text{kg}$</p> <p style="padding-left: 100px;">$= 1,25 \times 10^3\text{N}$ ✓</p>	(2 marks)
8.	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> </div> <div style="flex: 1; padding-left: 20px;"> <ul style="list-style-type: none"> ✓ Not touching O on y axis & x axis ✓ Maximum tension at B ✓ Equal tension at A & C <p>Allow straight line (3)</p> </div> </div>	(3 marks)

9.	<p>(a)</p>  <p>Path curves upwards ✓ (1)</p> <p>(b) Because of Bernoulli's effect caused by difference in air pressure due to the streamlines. As the ball moves ✓ to the right airstreams move to the left ✓. Spin is anti-clockwise, a region of low pressure forms above ✓ lifting the ball.</p>	(1 mark)
10.	Boyle's law.	(1 mark)
11.		(2 mark)
12.		(1 mark)
13.	<ul style="list-style-type: none"> - Making the bulb thinner. ✓ - Making the bore narrower ✓ 	(2 marks)

16. (a)	<p>(i) (I) power = $\frac{\text{Work done}}{\text{time}}$ ✓ $= \frac{80000}{4}$ $= 20000\text{W}$ ✓</p> <p>(II) $d = \frac{\text{work}}{\text{force}}$ ✓ $= \frac{80000}{20000}$ $= 4 \text{ m}$ ✓</p> <p>(III) Efficiency = $\frac{\text{Workoutput}}{\text{Workinput}} \times 100\%$ ✓ $= \frac{20000}{25000} \times 100$ $= 80.00 \%$ ✓</p>	(2 marks)
(b)	<p>(ii) Mechanical energy → heat and sound.</p>	(2 marks)
	<p>(b)</p>  <p>Since it accelerates towards the ground ✓ (1)</p>	(1 mark)

18. (a)	<ul style="list-style-type: none"> - Mass - Temperature 	(2 marks)
(b)	<p>(i) The gas is less dense than the water. ✓</p> <p>(ii) As it rises the pressure around the bubble reduces and since the temperature is the same, the volume increases. ✓</p>	<p>(1 mark)</p> <p>(1 mark)</p>
(c)	<ul style="list-style-type: none"> - The size of the molecules is assumed to be negligible. ✓ - Intermolecular forces are also assumed to be negligible. ✓ - Real gases can never have zero volume yet the gas laws assume presence of zero volume. <p>(Any two correct)</p>	(2 marks)
(d)	<p>(i) - The pressure law. ✓</p> <ul style="list-style-type: none"> - Has ability to measure the temperature and the pressure while keeping the volume constant. ✓ <p>(ii) - Source of heating for the temperature to be changed. ✓</p>	<p>(2 marks)</p> <p>(1 mark)</p>
(e)	$\frac{V_1}{T_1} = \frac{V_2}{T_2} \quad \checkmark$ $T_2 = \frac{300 \times 90}{500} \quad \checkmark \checkmark$ $= 54\text{k}$	(3 marks)