



General Certificate of Secondary Education

Separate Science Physics 4451

PHY3F Unit Physics 3

Mark Scheme

2008 examination - January series

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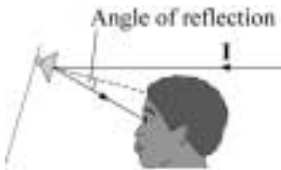
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Question 1

question	answers	extra information	mark
(a)	centre of X at the point where the axes cross	to within 1 mm in any direction	1
(b)(i)	(at / in the) centre (of the tyre)	or unambiguously shown on the diagram	1
(ii)	(this is) where axes of symmetry (of the tyre) cross / intersect / meet	or point at which the mass of the tyre seems to be (concentrated)	1
total			3

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Question 2

question	answers	extra information	mark
(a)(i)	I correct r correct	only credit if unambiguously correct ously correct 	1 1
(ii)	(the) normal	do not credit 'perpendicular' / 'vertical'	1
(b)	both lines correctly connected one line correctly connected gains 1 mark	if two lines from any in list A to any in list B then both incorrect	2
total			5

PHY3F**Question 3**

question	answers	extra information	mark
(a)	tension	accept any unambiguous method of indication eg it's underlined or ticked	1
(b)(i)	speed of the ball is increased		1
(b)(ii)	the direction of the ball		1
(c)	centripetal	accept any unambiguous method of indication eg it's underlined or ticked	1
total			4

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Question 4

question	answers	extra information	mark
(a)(i)	more than	accept any clear indication eg the other two lines crossed out	1
(ii)	less than	accept any clear indication eg the other two lines crossed out	1
(b)	any two from: <ul style="list-style-type: none"> • above the equator • takes / period of 24 hours • (remains) above the same point 	<p>or 'rotates with the Earth' do not credit 'stays in the same place' but accept '<u>appears</u> to stay in the same place'</p> <p>do not credit just 'one like satellite X's'</p>	2
(c)	<u>low</u> polar		1
total			5

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Question 5

question	answers	extra information	mark
(a)	Venus	accept Mercury	1
(b)	any negative number or range in the range -75 to -150 inclusive	do not credit any positive number or positive range	1
(c)	either ... increases ... increases or ... decreases ... decreases	both required for the mark	1
(d)	Today's about Mars.	accept any unambiguous method of indication for the correct answer eg it's underlined or ticked	1
total			4

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Question 6

question	answers	extra information	mark
(a)	increase the current	(1) credit increase the p.d./voltage credit reduce the resistance credit have thicker wiring credit add extra / more cells	1
	increase the magnetic field (strength)	(1) credit 'have stronger magnet(s) do not credit 'bigger magnets' either order	1
(b)	either reverse polarity or connect the battery the other way round		1
	either reverse direction of the magnetic field or put the magnet the other way round / reverse the magnet		1 do not give any credit to a response in which both are done at the same time either order
(c)	either conductor parallel to the magnetic field or lines of magnetic force and path of electricity do not cross		1
total		5	

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Question 7

question	answers	extra information	mark
(a)	converging or convex		1
(b)	(principal) focus or focal point		1
(c)	either (\times)1.5 or (\times)1½ or 150%	unambiguous evidence of appropriate measurements for 1 mark only eg 4 and 6 or 8 and 12 or 0.8 and 1.2	2
(d)	real rays cross to form it / formed at the intersection of real rays	accept 'image on the opposite side of the lens to the object' accept 'can be put onto a screen'	1
total			5

