AQA GCSE PHYSICS (HIGHER) · 8463

PHYSICS



MARK SCHEME

4.5.1.4 RESULTANT FORCES (PACK 2)

SCORE	PERCENTAGE
/19	%

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Q1.

ideas that
gravity/weight (downwards)
upwards/opposite force of water **or** upthrust
forces are balanced

any three for 1 mark each

(N.B. All these ideas may be included in a short response)

(If no marks gained but candidate makes reference to forces, award 1 mark)

[3]

Q2.

gravity
newtons
balanced

each for 1 mark

[3]

Q3.

(a) *evidence of* $\frac{\text{change in speed}}{\text{time taken}}$ *or* $\frac{40}{5}$

gains 1 mark

(*credit* 50/10 **or** 5 with *1 mark*) NOT 40/10 or 50/5

but 8 [N.B. negative not required]

gains 2 marks

units metres per second per second **or** (metres per second squared or m/s^2)

for 1 mark

3

(b) (i) *idea that*
accelerates at first due to gravity
air/wind resistance
friction/resistance/drag with air increases with speed
eventually gravity and friction cancel balance
or (no net/accelerating force) [NOT terminal velocity]

each for 1 mark

3

(ii) *idea*
a bigger resistance/friction/drag at any given speed (*credit* a bigger drag (factor))

for 1 mark

1

(c) *evidence of* × 10 / × 9.8 / × 9.81 **or** 750/735(75)

for 1 mark

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1

[8]

Q4.

(a) *idea that* balanced by friction force* / pushing force equals friction force (*note "balanced" by unspecified force)
or
specification of relevant force but no reference to balancing
in both 1(a) and 1(b) gains 1 mark overall
for 1 mark

1

(b) balanced by upwards force of table*
for 1 mark

1

(c) makes it (slightly) warm / hot
or
wears it away (slightly) / damages surface
for 1 mark

1

[3]

Q5.

(a) D
for 1 mark

1

(b) wear it away **or** make it warmer
for 1 mark do not accept 'stops it'

1

[2]

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