Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (High Demand Questions)

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) 48

*allow for **1** mark correct method shown, ie 6 × 8*
***or** correct area indicated on the graph*

2

(b) diagonal line from (0,0) to (6,48) / (6, their (a))

if answer to (a) is greater than 50, scale must be changed to gain this mark

1

horizontal line at 48m between 6 and 10 seconds

accept horizontal line drawn at their (a) between 6 and 10 seconds

1

[4]

Q2.

(a) (i) momentum before = momentum after
or
(total) momentum stays the same

accept no momentum is lost
accept no momentum is gained

1

(ii) an external force acts (on the colliding objects)

accept colliding objects are not isolated

1

(b) (i) 9600

*allow **1** mark for correct calculation of momentum before or after*
ie 12000 or 2400
or
correct substitution using change in velocity = 8 m/s
ie 1200 × 8

2

kg m/s

this may be given in words rather than symbols
or
Ns

1

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(ii) 3 or their (b)(i) ÷ 3200 correctly calculated

*allow **1** mark for stating momentum before = momentum after*

or

clear attempt to use conservation of momentum

2

[7]

Q3.

(a) (i) longer reaction time

accept slower reactions

*do **not** accept slower reaction time unless qualified*

or

greater thinking distance

accept greater thinking time

or

greater stopping distance

accept greater stopping time

greater braking distance negates answer

1

(ii) lines / slopes have the same gradient

accept slopes are the same

or

velocity decreases to zero in same time / in 2.6 seconds

accept any time between 2.3 and 2.8

accept braking distances are the same

1

(iii) 12

*accept extracting both reaction times correctly for **1** mark*

*(0.6 and 1.4) **or** time = 0.8(s) for **1** mark*

*accept 0.8 × 15 for **2** marks*

accept calculating the distance

*travelled by car **A** as 28.5 m **or** the distance travelled by car **B** as 40.5 m for **2** marks*

3

(b) **Z**

1

different force values give a unique / different resistance

*only scores if **Z** chosen*

*do **not** accept force andresistance are (directly) proportional*

accept answers in terms of why

*either **X or Y** would not be the best eg*

***X** – same resistance value is obtained for 2 different force values*

***Y** – all force values give the same resistance*

1

[7]

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