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

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

(a) (i) will not fall over (1)
accept will not easily fall over (2)

or
centre of mass will remain above the base (1)
(line of action of the) weight will remain above within the base
accept centre of gravity / c of g / c of m / c m

if the monitor is given a small push (1)
depends on mark above

2

(ii) (total) clockwise moment = (total) anticlockwise moment
***or** they are equal / balanced*

1

(b) the position of the centre of mass has changed (1)
the line of action of the weight is outside the base (1)
producing a (resultant) moment (1)
points may be expressed in any order

3

[6]

Q2.

(a) 38 400
*allow 6.4 × 6000 for **1** mark*

2

Nm **or** newton metres
*do **not** credit 'nm', 'mN' or 'metre newtons'*

1

(b) 16 000 (N) **or** 16 kN
*allow **1** mark for 38 400 ÷ 2.4*
*accept their (a) ÷ 2.4 correctly calculated for **2** marks*
*accept their (a) ÷ 2.4 for **1** mark*

2

[5]

Q3.

Downloaded from www.merit-minds.com

(a) (i) 210

*allow **1** mark for correct substitution i.e. 35 × 6*

2

kg m/s **or** Ns

*do **not** accept n for N*
*accept 210 000g m/s for **3** marks*

1

(ii) 840

if answer given is not 840 accept their (a)(i) in kg m/s ÷ 0.25 correctly calculated for both marks

*allow **1** mark for correct substitution i.e. 210 ÷ 0.25 or their (a)(i) ÷ 0.25*

2

(b) increases the time to stop

accept increases impact time
*do **not** accept any references to slowing down time*

1

decreases rate of change in momentum

accept reduces acceleration/deceleration
reduces momentum is insufficient

1

reduces the force (on the child)

1

(c) any **two** from:

- insufficient range of tests/thicknesses for required cfh

  accept need data for thicknesses above 80 mm/ cfh 2.7 m
  not enough tests is insufficient

- (seems to be) some anomalous data

- (repeats) needed to improve reliability (of data)

  accept data/ results are unreliable
  *do **not** accept maybe systematic/random error*
  *do **not** accept reference to precision*

- need to test greater range/variety of dummies

  accept children for dummies
  accept specific factor such as weight/height/size

2

(d) Tyres do not need to be dumped/burned/ less land-fill/ saves on raw materials

accept less waste
*do **not** accept recycling on its own*

1

[11]

Downloaded from www.merit-minds.com