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

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Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

(a) (i) gpe = weight × height
accept Ep = mgh
accept pe= mgh
1

(ii) 1200
accept values using 9.8 (1)
*allow **1** mark for correct substitution*
2

(b) (i) 120
accept $\frac{\text{their (a)(ii)} \times 6}{60}$
1

(ii) 300
allow b(i) ÷ 0.4 for both marks
*allow **1** mark for correct transformation*
2

[6]

Q2.

(a) (i) gravity/weight
1

(ii) 2193750000000 or 2.19×10^{12}
***not** 2.19^{12}*
allow 1 mark for the correct conversion to 7500 (m/s)
allow one mark for answer 2193750(J)
2

transferred to heat
ignore extras of sound and light
accept changed to heat
accept lost due to friction
1

(b) (i) acceleration = $\frac{\text{change in velocity}}{\text{time (taken)}}$

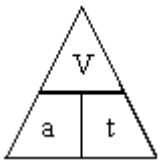
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accept word speed instead of velocity

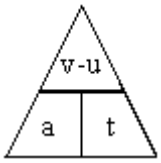
accept $a = \frac{v-u}{t}$

or *correct rearrangement*

do not accept



even if subsequent calculation correct



can gain credit if subsequent calculation correct

1

(ii) 2

ignore + or – signs

m/s^2 1

accept m/s/s or ms^{-2}

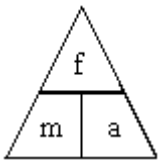
2

(c) (i) force = mass × acceleration

accept correct rearrangement

accept F = m × a

do not accept



unless subsequent calculation correct

1

(ii) 156 000

accept 78 000 × their (b)(ii)(only if (b)(i) correct)

1

[9]

Q3.

(a) Total momentum (of a system of bodies) remains constant

accept momentum before (a collision) = momentum after (a collision)

1

Provided no external force acts

1

(b) (i) rotate the compressor

1

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(ii)
- fuel is mixed with the air and ignited
- causing an increase in the pressure **or** temperature **or** speed of the gases
  accept air out faster than air in
  accept gases have momentum ***or***
- force backwards
- exhaust gases have momentum (backwards) **or** force (backwards)
  if the answer is in terms of force then this third point must be scored before the fourth can be credited
- engine **or** aircraft has (equal) momentum forwards **or** force forwards

4

(c) m = 350

answer 0.35 one mark only

allow one mark if 105 000 ***or*** *475-175* ***or*** *300 have been used*

2

[9]

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