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

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

The diagram below shows an ice skater, Skater A.

(a) Write down the equation that links mass, momentum and velocity.

_____

(1)

(b) Skater **A** travels with a velocity of 3.2 m/s and has a momentum of 200 kg m/s

Calculate the mass of Skater **A**.

_____

_____

Mass = _____ kg

(3)

(c) Skater **A** bumps into another skater, Skater **B**. Skater **B** is stationary.

The skaters move off together in a straight line.

Explain what happens to the velocity of each of the skaters.

Use the idea of conservation of momentum.

_____

_____

_____

_____

_____

_____

(3)

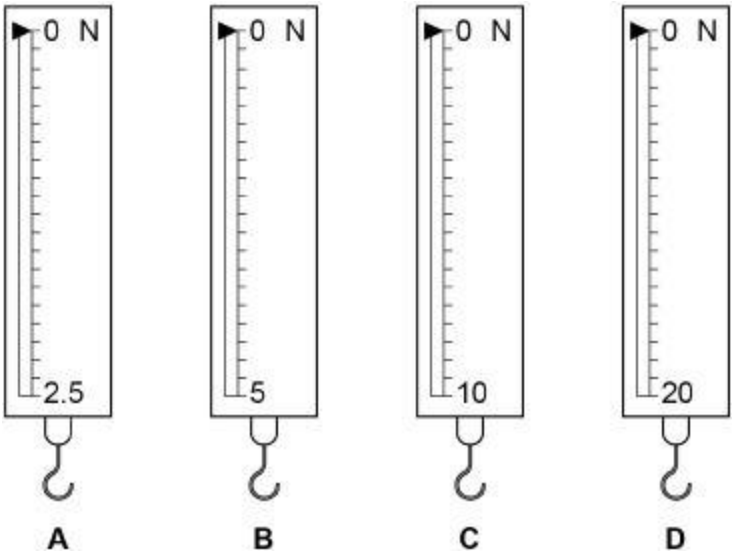
(Total 7 marks)

Q2.

(a) **Figure 1** shows four newtonmeters.

Each newtonmeter contains a spring.

Figure 1



Which newtonmeter has the spring with the greatest spring constant?

Give a reason for your answer.

Newtonmeter _____

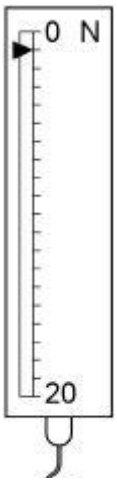
Reason _____

_____

(2)

(b) The newtonmeter in **Figure 2** will give an error when used to make a measurement.

Figure 2



Name the type of error.

Describe how this error can be corrected.

Type of error _____

Correction _____

_____

(2)

(c) A student hangs a weight on a newtonmeter.

The energy now stored in the spring in the newtonmeter is 4.5×10^{-2} J

The student then increases the weight on the newtonmeter by 2.0 N

Calculate the total extension of the spring.

Spring constant = 400 N/m

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Total extension = _____ m

(6)

(Total 10 marks)