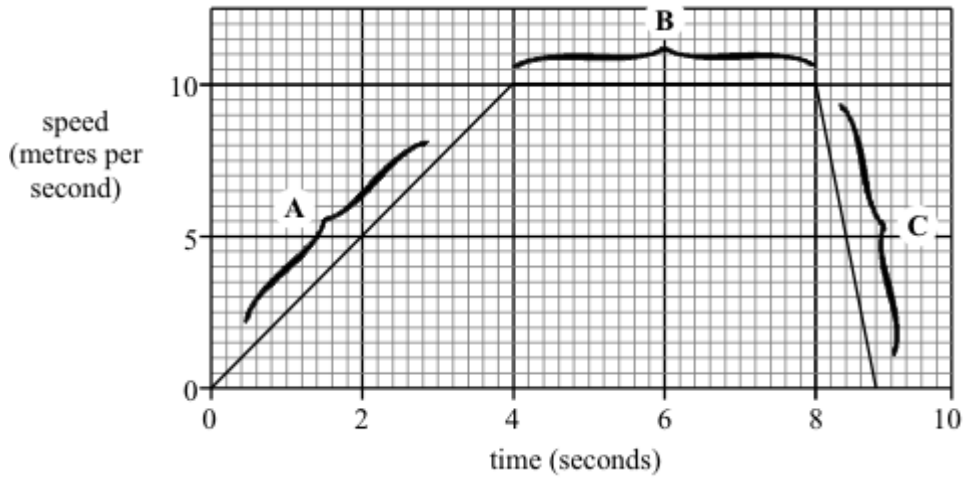
Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (Standard Demand Questions)

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

The graph shows the speed of a runner during an indoor 60 metres race.



(a) Choose words from this list to complete the sentences below.

moving at a steady speed **slowing down**

speeding up **stopped**

Part **A** of the graph shows that the runner is _____

Part **B** of the graph shows that the runner is _____

Part **C** of the graph shows that the runner is _____

(3)

(b) Calculate the acceleration of the runner during the first four seconds.
(Show your working.)

_____

_____

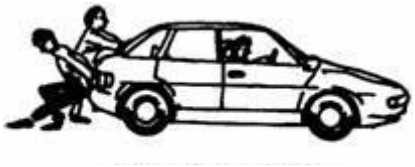
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(3)
(Total 6 marks)

Q2.

A man's car will not start, so two friends help him by pushing it.

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By pushing as hard as they can for 12 seconds they make the car reach a speed of 3 metres per second.

(a) Calculate the acceleration they give to the car.

_____

_____

_____ Answer _____ m/s^2

(2)

(b) Whilst pushing the car the two friends together do a total of 2400 joules of work. Calculate their total power.

_____

_____

_____ Answer _____ watts

(2)

(c) Another motorist has the same problem. The two friends push his car along the same stretch of road with the same force as before.

It takes them 18 seconds to get the second car up to a speed of 3 metres per second.

What does this tell you about the mass of the second car?
(You can ignore forces of friction.)

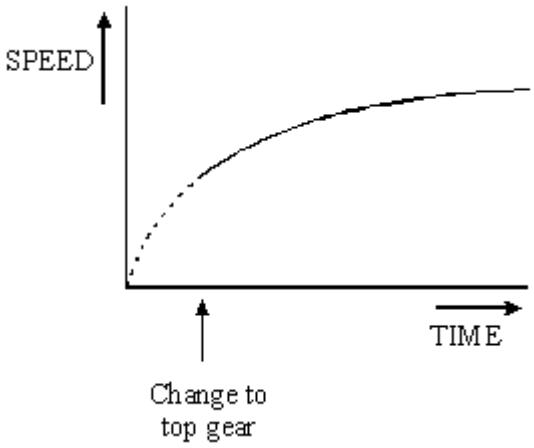
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_____

(2)

(d) On a flat stretch of a motorway a lorry driver changes into top gear. He then makes the lorry go as fast as he can.

The graph shows what happens to the speed of the lorry.



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Explain why the speed of the lorry increases at first but then levels out.

_____

_____

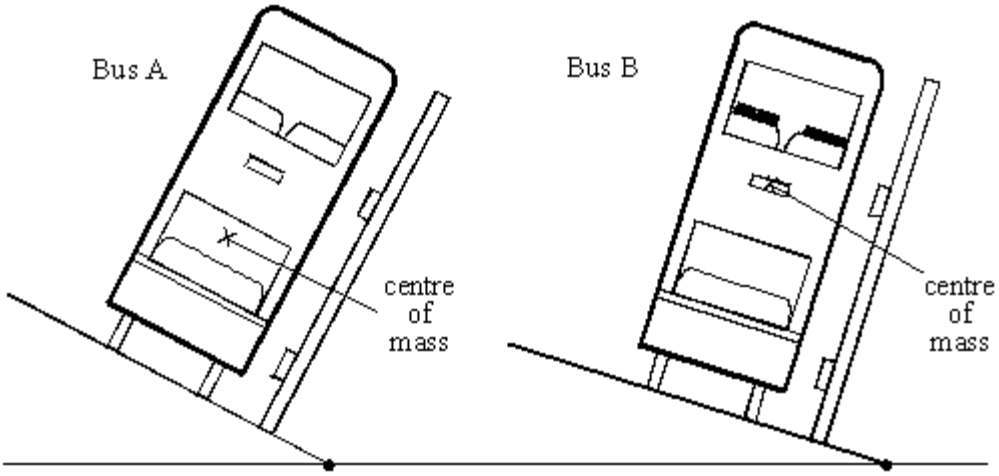
(3)

(Total 9 marks)

Q3.

The diagram shows two buses. Bus A is empty. Bus B contains bags of sand upstairs to represent passengers.

Each bus has been tilted as far as it can without falling over.



(a) Each bus will topple over if it is tilted any further.

Explain, in as much detail as you can, why this will happen.

(You can draw on one of the diagrams as part of your answer if you want to.)

_____

_____

_____

(2)

(b) What difference does it make to the stability of the bus when the upper deck is full of "passengers"? Explain your answer as fully as you can.

_____

_____

_____

(3)

(c) Why are the bags of sand in bus B only put upstairs?

_____

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(1)

(Total 6 marks)

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