(a) An object is moving in a straight line at constant speed. A resultant force begins to act upon the object.

State the ways in which the force may change the motion of the object.

It may accelerate the object
or it may change the direction of the object

.....

.....

.....[2]

(b) State **one** other effect a force could have on the object.

It can change the shape of the object .....[1]

(c) The mass of a car is 1400 kg. The car, initially at rest, is moved along a level road by a resultant force of 3500 N. The car reaches a speed of 30 m/s.

(i) Calculate the average acceleration of the car.

a= F/m
= 3500/1400

acceleration = 2.5m/s^2 .....[2]

(ii) Calculate the time for which the force is applied.

2(c)(ii) | $a = (v - u) / t$ in any form OR $(t =) (v - u) / a$ OR $(t =) (30 - 0) / 2.5$ OR $30 / 2.5$

$(t =)$ 12 s

time = ...[2]

(iii) State the name of a force which opposes the motion of the car.

frictional force .....[1]

[Total: 8]