Full Name : …….. **Date: 15 December 2025**

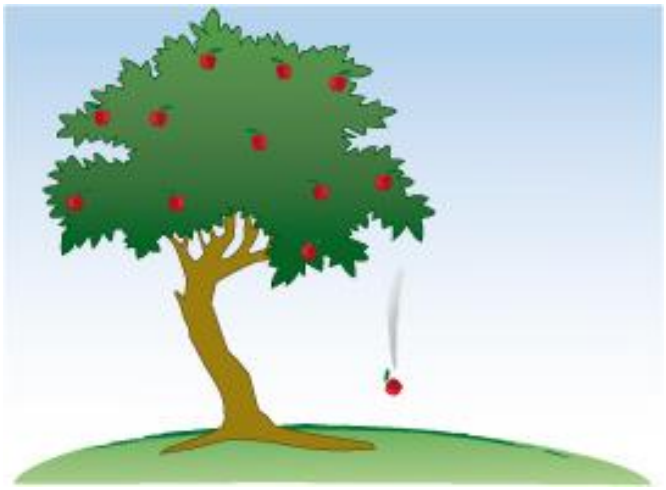
Test

Time Allowed: 15 minutes **Total Marks: 20**

1. In this question you are asked to mark with arrows and label the forces acting on different objects.

   If you are writing your answers on a different sheet of paper or on your notebook, you should make a rough sketch of the diagrams given below to answer the questions.

   (a) An apple falls from a tree. Mark and label the forces acting on the apple while it is falling.

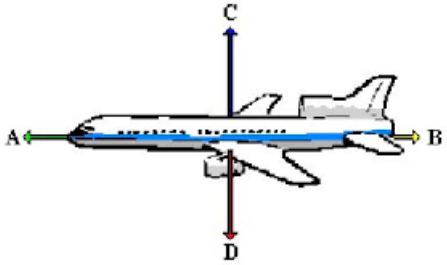


   (b) An apple floats in a pond. Mark and label the forces acting on the apple.

(4 marks)

2. An aeroplane is flying horizontally along a straight line with a constant speed.

The diagram given bellow shows the forces acting on the aeroplane.



(a) State the names of the four forces shown on the diagram.

Force A:…….

Force B:…….

Force C:…….

Force D:…….

(4 marks)

(b) Given that the size of force D shown on the diagram is 30 000 N, circle the correct statement about the size of force C.

(i) Force C is smaller than force D.

(ii) Force C is of the same size as that of force D.

(iii) Force C is bigger than force D.

(1 mark)

Reason:

……..

……...

……...

……...

(2 marks)

(c) Which of the following statements about forces A and B is correct? Circle the correct answer and give a reason for your answer quoting one of Newton's laws.

(i) Force A is smaller than force B.

(ii) Force A is of the same size as that of force B.

(iii) Force A is bigger than force B.

(1 mark)

Reason:

……..

……...

……...

……...

(2 marks)

3.

The figure given above shows a boy pushing a trolley along a floor.

The floor is horizontal.

The mass of the trolley and its contents is 8 kg.

(a) State the equation linking weight, mass and gravitational field strength.

……..

(1 mark)

(b) Calculate the weight of the trolley and its contents.

Weight = ……. N

(1 mark)

The trolley moves horizontally with an acceleration of 4 m/s^2.

(c) Work out the resultant force acting on the trolley.

Resultant Force = ……N

(2 marks)

(d) Given that the trolley and its contents experience a total resistive force of 40 N opposing the motion, work out the size of the forward pushing force on the trolley.

Forward pushing force = …… N
(2 marks)

- End of Test -