Name of the Student:_____
Max. Marks : 13 Marks **Time : 13 Minutes**

Q1.

Some forces act at a distance.

One example is the gravitational attraction between the Moon and the Earth.

Describe an example of another type of force acting at a distance, where the force is **not** gravitational.

(2)

.....

.....

.....

.....

(Total for question = 2 marks)

Q2.

Figure 13 shows a drone.

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Figure 13

The drone has four spinning blades.

The upward force produced enables the drone to rise in the air.

The speed at which the blades spin is measured in turns per minute.

Figure 14 shows how the upward force produced by the four blades depends on the speed at which the blades spin.

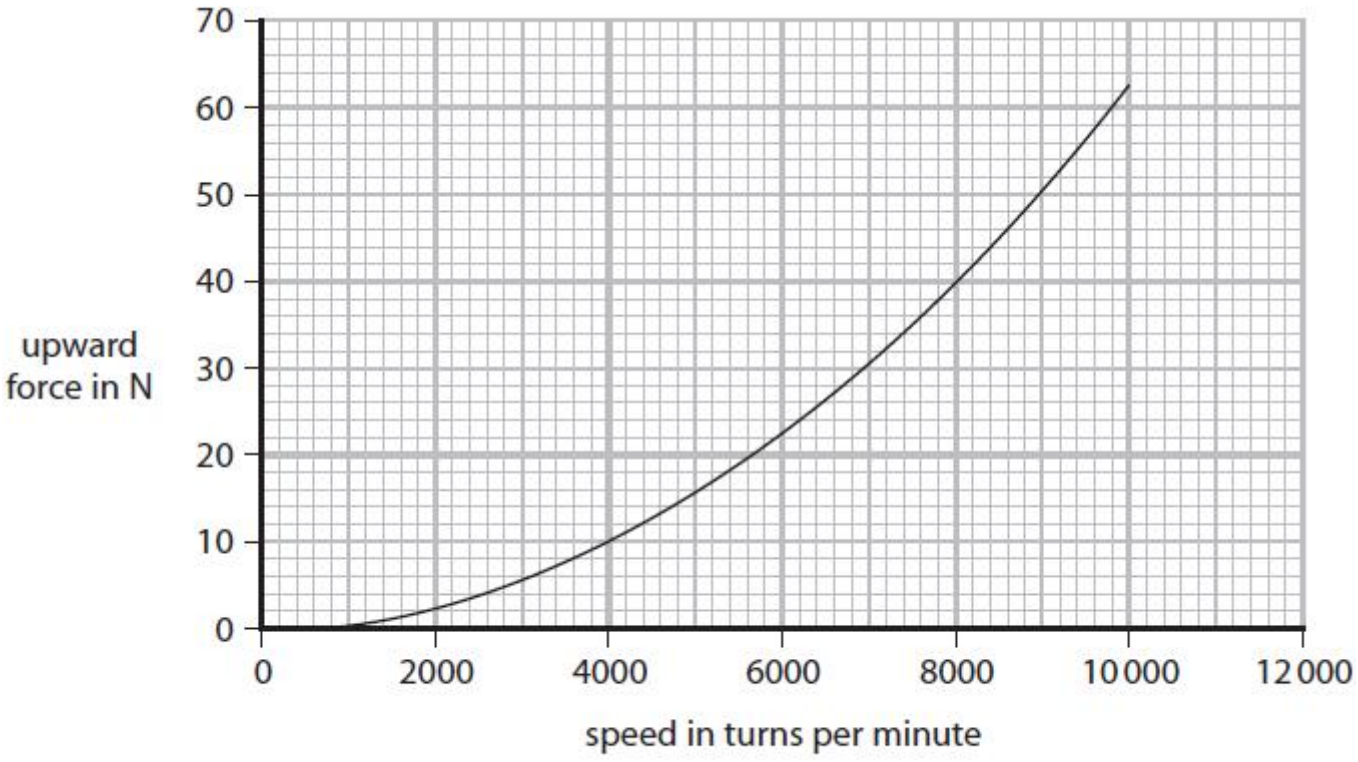


Figure 14

Describe the relationship between upward force and speed shown by this graph.

(2)

.....

.....

.....

.....

(Total for question = 2 marks)

Q3.

(i) Which of these forces keeps the Moon moving around the Earth?

(1)

- ☒ **A** contact
- ☒ **B** electrostatic
- ☒ **C** gravitational
- ☒ **D** magnetic

(ii) Which of these is a scalar quantity?

(1)

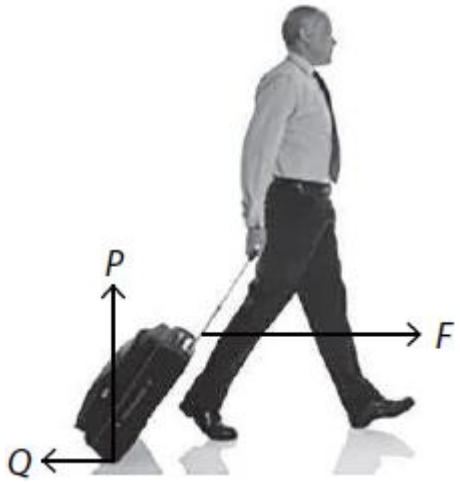
- ☒ **A** velocity
- ☒ **B** momentum
- ☒ **C** energy
- ☒ **D** acceleration

(Total for question = 2 marks)

Q4.

A man pulls a suitcase with a horizontal force, *F*, as shown in Figure 10.

Two other forces acting on the suitcase are labelled *P* and *Q*.



Not to scale

Figure 10

(i) Which of these gives the correct names for the forces *P* and *Q*?

(1)

		name of	
		force *P*	**force *Q***
☐	**A**	upthrust	reaction
☐	**B**	reaction	friction
☐	**C**	reaction	reaction
☐	**D**	friction	upthrust

(ii) Draw an arrow on the diagram to represent the weight of the suitcase.

(1)

(Total for question = 2 marks)

Q5.

Figure 8 shows part of a cart.

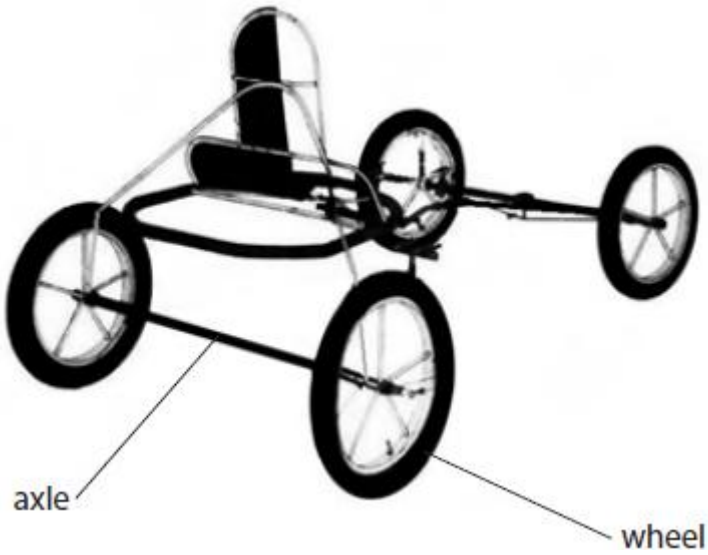


Figure 8

When the wheels turn the axles become warm.

(i) Explain why the axles become warm when the wheels turn.

(2)

.....

.....

.....

.....

(ii) Give **one** way of reducing the heating of the axles when the wheels turn.

(1)

.....

.....

(Total for question = 3 marks)

Q6.

Figure 7 shows a box at rest on a floor.

The force that the floor exerts on the box is shown by the vector in Figure 7.

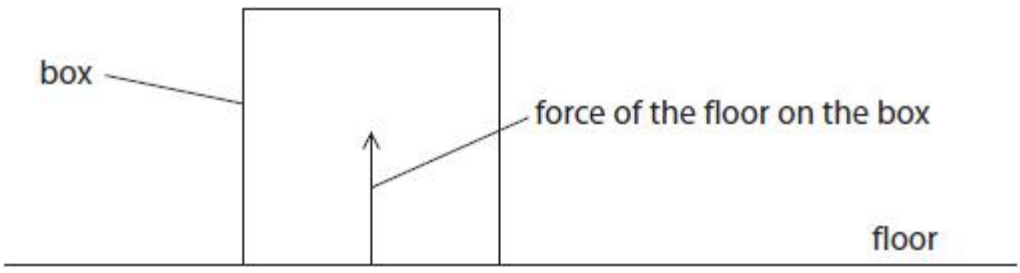


Figure 7

Add another vector to the diagram in Figure 7 to show the weight of the box.

(2)

(Total for question = 2 marks)