Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic :15_Forces and their matter

Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

*Figure 28 shows a cross-section of a boat floating in water and the same boat with a load inside.

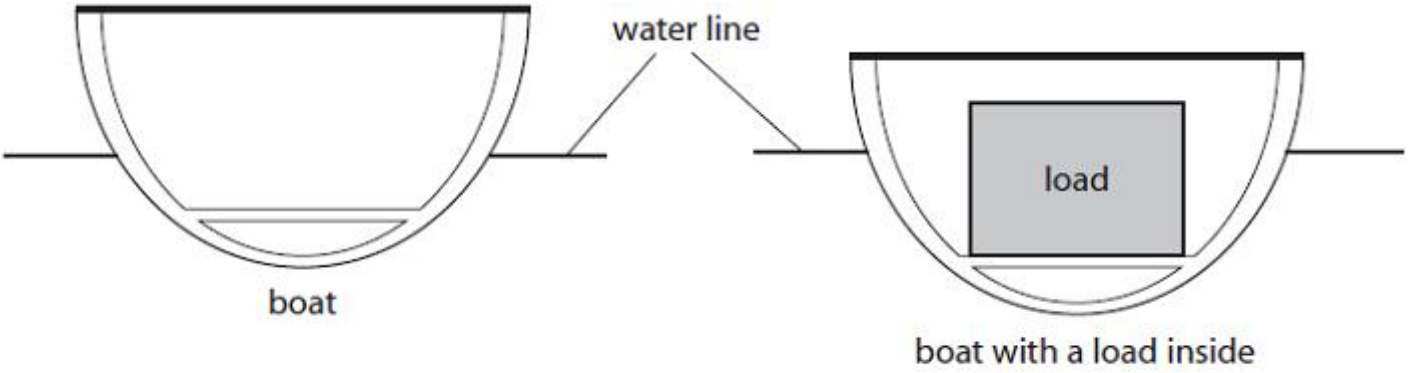

Figure 28

The boat floats lower in the water when there is a load inside the boat.

Explain why the boat floats in water and why the boat floats lower in the water when there is a load inside the boat.

You may add to the diagram to help with your answer.

(6)

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(Total for question = 6 marks)

Q2.

Figure 10 is a graph showing how the atmospheric pressure changes with the height above sea level on the Earth's surface.

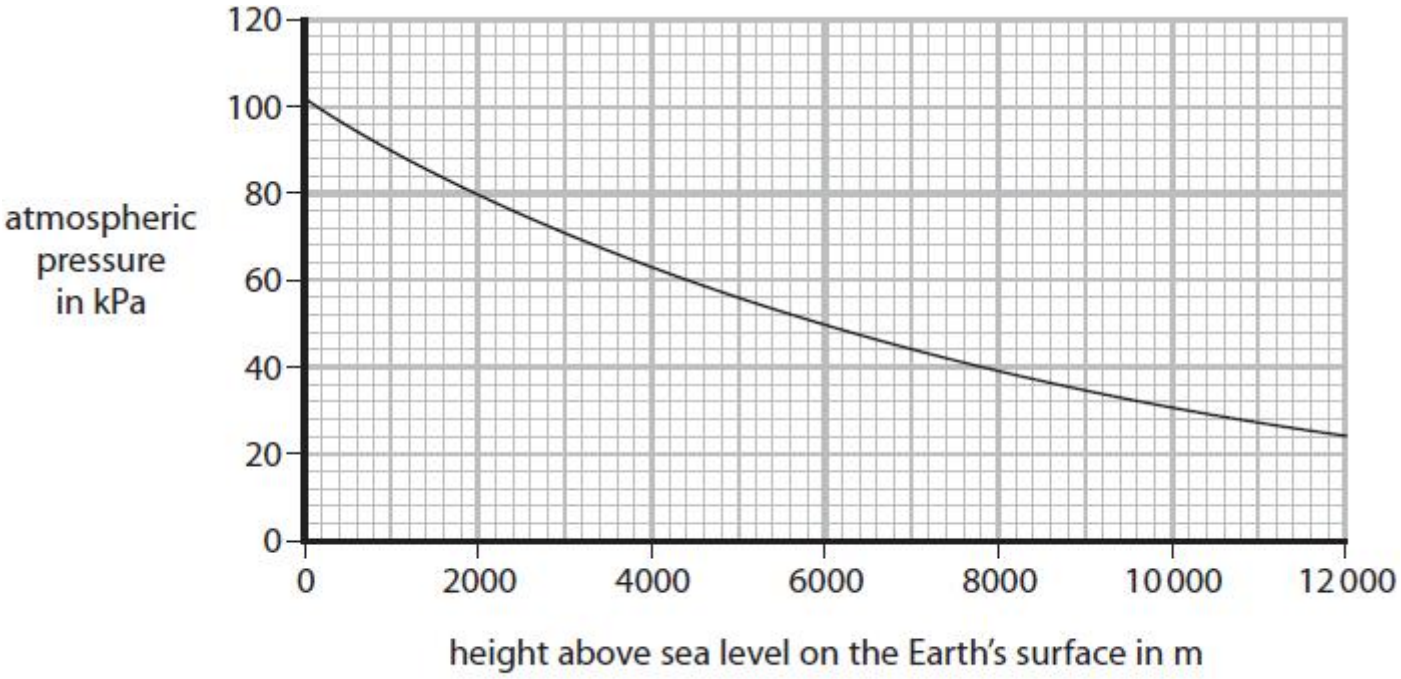

Figure 10

(i) An aeroplane descends from 6000 m to 2000 m.

Use the graph to find the change in atmospheric pressure as the aeroplane descends.

(2)

change in pressure = ... kPa

(ii) Suggest **one** reason why the atmospheric pressure is greater at 2000 m than at 6000 m.

(1)

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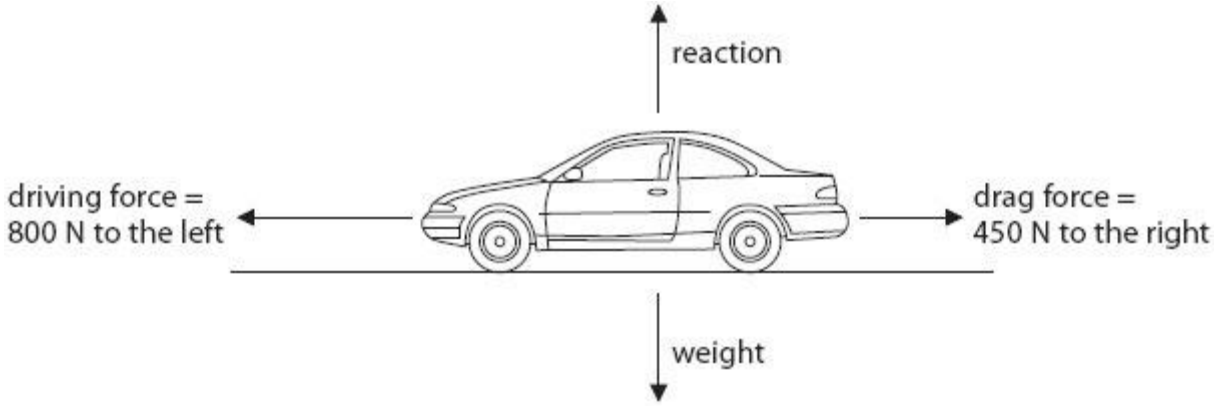
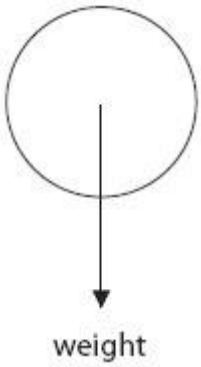
(Total for question = 3 marks)

Q3.

The diagram shows the forces acting on a car which is travelling along a flat straight road.



Forces also act on objects when they fall through the air.
There are two forces acting on this ball as it falls through the air.
The weight is shown on the diagram.



(i) Draw and label an arrow on the diagram to show the other force acting on the ball.

(2)

(ii) Use words from the box to complete the sentences.

(2)

balanced	changing	greater	smaller	zero

After a short time the ball falls at a steady speed.

The forces acting on the ball are now .....**.**

The acceleration of the ball is now .....**.**

Q4.

Figure 13 shows a diagram of a device for lifting heavy loads.

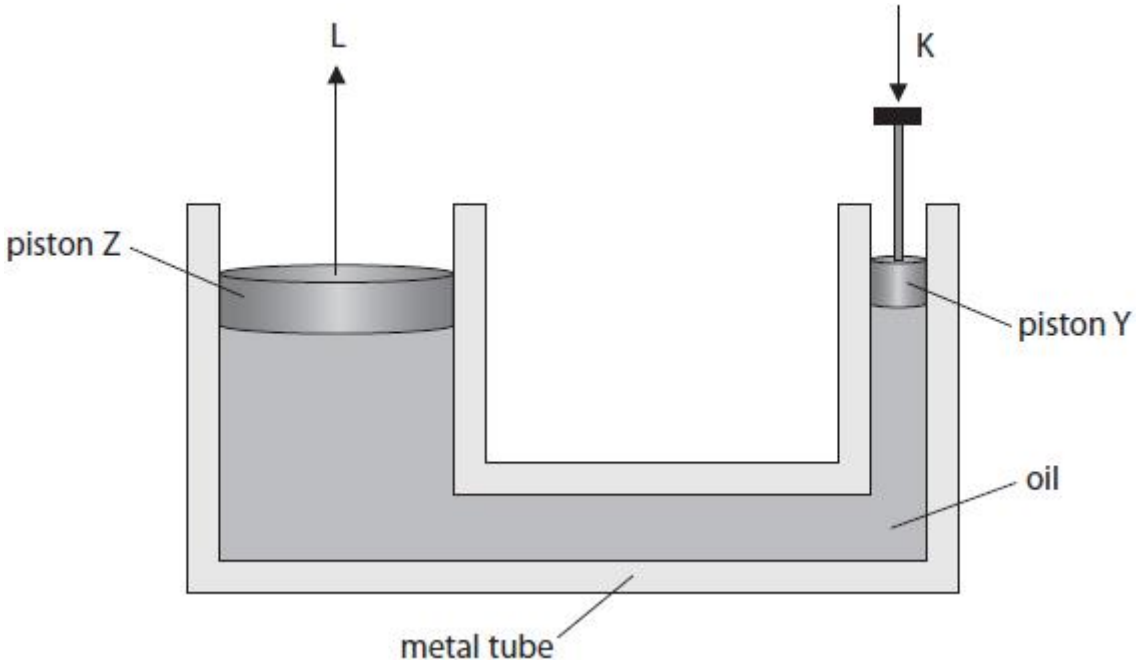


Figure 13

The metal tube is filled with oil.

The piston Y is pushed down with a force K.

This produces a force L on piston Z.

The pressure exerted on the oil by piston Y is the same as the pressure exerted by the oil on piston Z.

Explain the difference between the size of force K and the size of force L.

(3)

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(Total for question = 3 marks)

Q5.

Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Figure 9 shows an object at the bottom of a beaker of water.

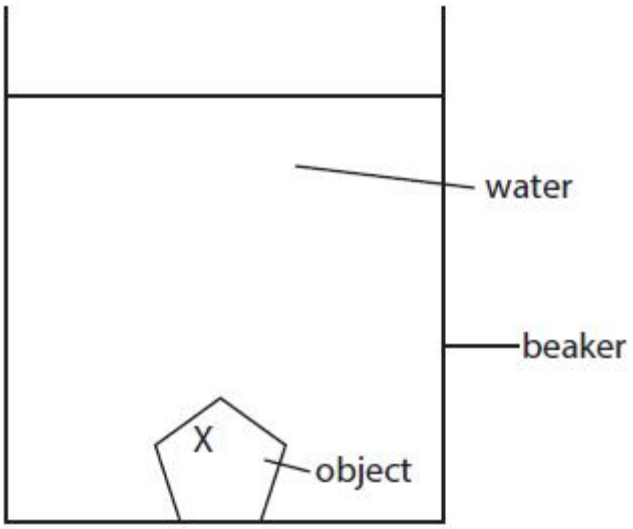
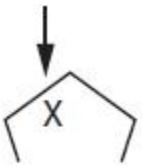


Figure 9

Which diagram shows the direction of the force exerted by the water on the object at point X?

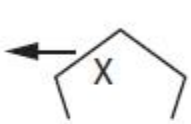
(1)

☐ **A**

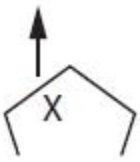


☐ **B**

☐ **C**



☐ **D**



(Total for question = 1 mark)

Q6.

Figure 2 shows a tank for holding water.

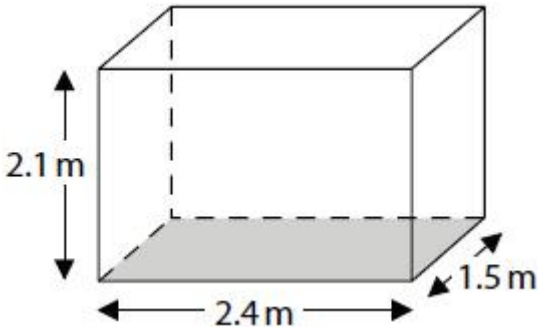
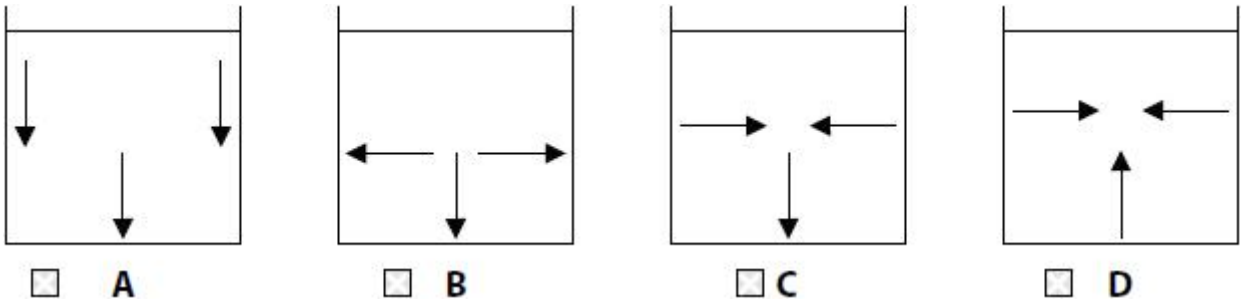


Figure 2

Which diagram shows the direction of the forces from the water on the inside of the tank?

(1)



(Total for question = 1 mark)

Q7.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Figure 18 shows a different spring hanging from a hook fixed to the ceiling.

A block hangs from the other end of the spring.

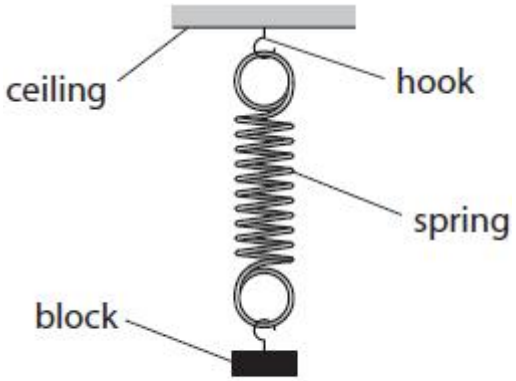


Figure 18

The weight of the spring is 1 N.
The weight of the block is 5 N.

The force exerted on the top of the spring by the hook is

(1)

- ☒ **A** 4 N down
- ☒ **B** 4 N up
- ☒ **C** 6 N down
- ☒ **D** 6 N up

(Total for question = 1 mark)

Q8.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

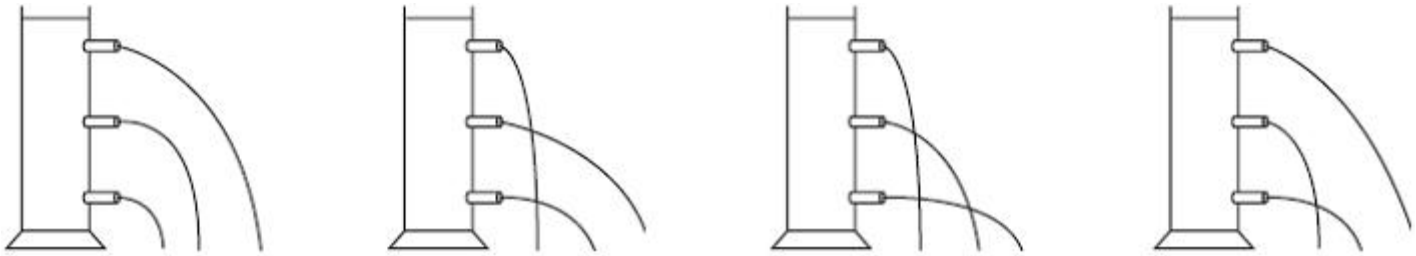
Figure 25 shows four identical metal cans, each filled with water to the same level.

Each can has three tubes.

Water comes out of each tube.

Which of these shows the correct pattern of water coming out of the tubes?

(1)



☐ **A** ☐ **B** ☐ **C** ☐ **D**

(Total for question = 1 mark)