live

# GCSE Physics

## 10th May 2021 – Mixed Questions

## Suitable for ALL exam boards

# MCQs

This session looks at various questions from across physics.

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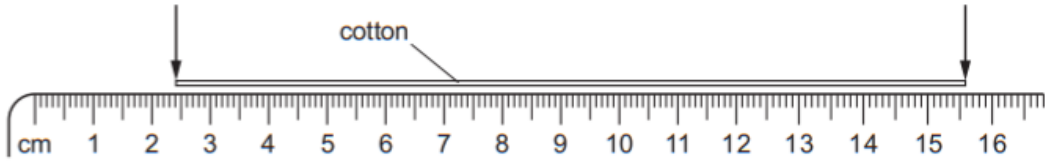
Question taken from:

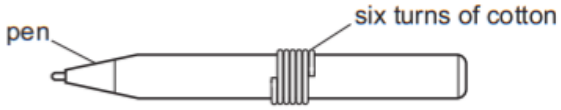
**CIE IGCSE Physics – June 2018 – Paper 1 – Questions 1 to 20**



**1** A length of cotton is measured between two points on a ruler.




When the length of cotton is wound closely around a pen, it goes round six times.



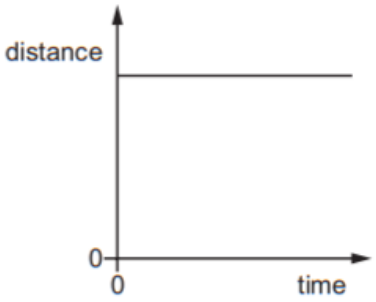

What is the distance once round the pen?

**A** 2.2 cm **B** 2.6 cm **C** 13.2 cm **D** 15.6 cm

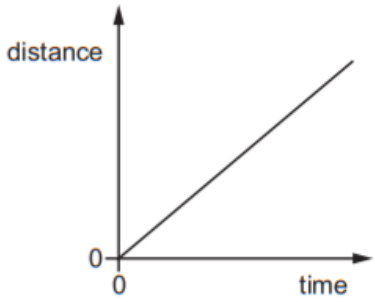
**2** A car is moving along a straight, level road, with a constant acceleration.

Which graph shows the motion of the car?

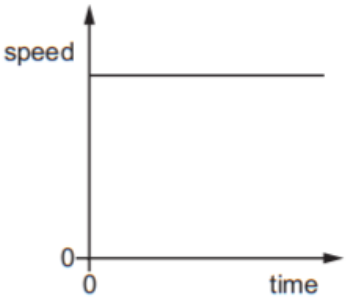
**A**



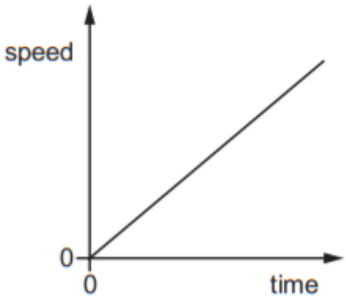

**B**




**C**




**D**




**3** A car takes 15 minutes to travel along a road that is 20 km long.

What is the average speed of the car?

**A** 0.75 km/h **B** 5.0 km/h **C** 80 km/h **D** 300 km/h

**4** Diagram 1 shows a beam balance. A beaker with a wire loop balances the standard masses.

The beaker is then removed and hung from a spring. The spring extends by 5.0 cm, as in diagram 2.

diagram 1

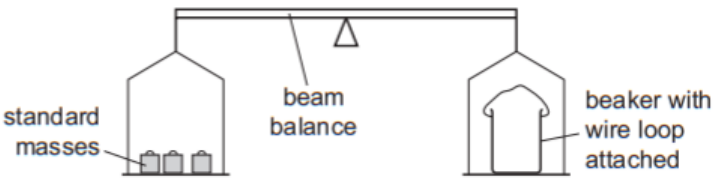
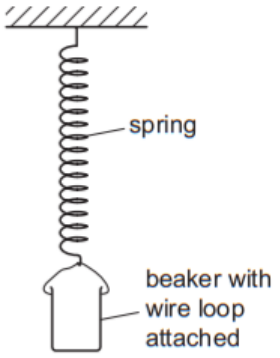



diagram 2




The experiment is repeated with the same apparatus on the Moon, where the acceleration of free fall is less than on Earth.

Which statement describes what happens on the Moon?

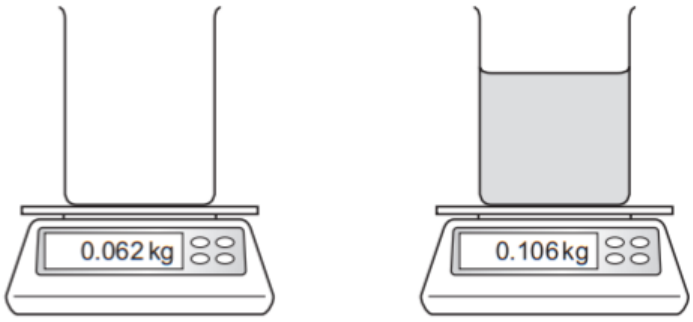
**A** The beam balance is balanced and the spring extends by 5.0 cm.

**B** The beam balance is balanced and the spring extends by less than 5.0 cm.

**C** The right-hand balance pan is higher and the spring extends by 5.0 cm.

**D** The right-hand balance pan is higher and the spring extends by less than 5.0 cm.

**5** An empty beaker is placed on a top-pan balance. Some water is now poured into the beaker.

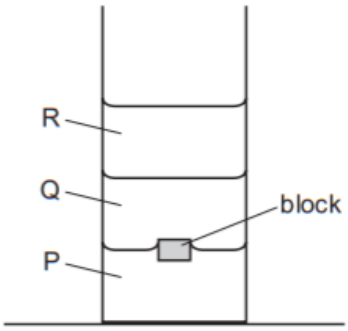



empty beaker beaker + water

What is the weight of the water?

**A** 0.044 kg **B** 0.168 kg **C** 0.0044 N **D** 0.44 N

**6** Three liquids P, Q and R have different densities and do not mix. The liquids are placed in a measuring cylinder and allowed to settle. A small block is then dropped into the measuring cylinder and comes to rest, as shown.




Which statement about the density of the block is correct?

**A** It is equal to the density of Q.

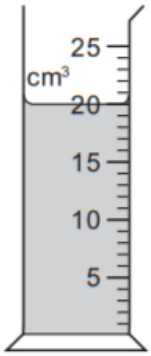
**B** It is greater than the density of P.

**C** It is greater than the density of R.

**D** It is less than the density of Q.

**7** The diagram shows some liquid in a measuring cylinder.

The mass of the liquid is 16 g.




What is the density of the liquid?

**A** $0.80\,g/cm^3$ **B** $1.25\,g/cm^3$ **C** $36\,g/cm^3$ **D** $320\,g/cm^3$

**8** A car is moving in a straight line on a level road. Its engine provides a forward force on the car. A second force of equal size acts on the car due to resistive forces.

Which statement describes what happens?

**A** The car changes direction.

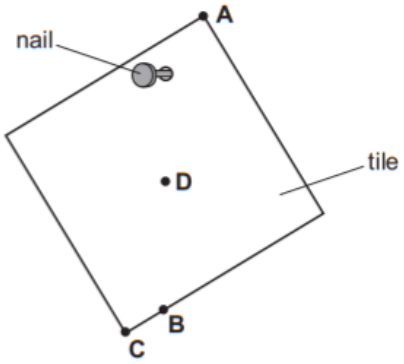
**B** The car moves at a constant speed.

**C** The car slows down.

**D** The car speeds up.

**9** A hole is drilled in a square tile. The diagram shows the tile hanging freely on a nail.

Where is the centre of mass of the tile?



**11** Which energy resource is **not** renewable?

**A** fossil fuel

**B** sunlight

**C** tides

**D** wind

**12** A student does work by pulling a box across a horizontal floor.

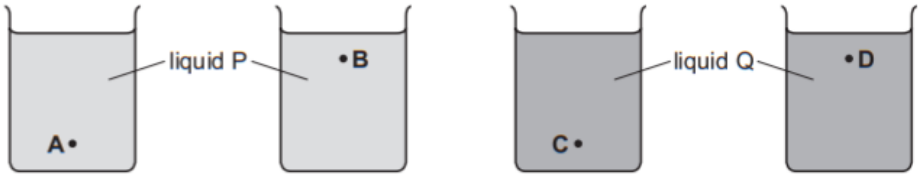
She now pulls a second box along the same floor.

Which row indicates that the student is now doing twice as much work?

| | force used to pull box | distance the box is pulled |
|---|---|---|
| **A** | is doubled | is doubled |
| **B** | is doubled | is halved |
| **C** | stays the same | is doubled |
| **D** | stays the same | is halved |

**13** Four identical beakers are filled with equal volumes of liquids P or Q, as shown. Liquid P is more dense than liquid Q.

At which point is the pressure the least?




**14** A woman has a weight of 600 N. She stands on a horizontal floor. The area of her feet in contact with the floor is 0.050 $m^2$.

What is the pressure she exerts on the floor?

**A** $1.2 \times 10^3 N/m^2$

**B** $2.4 \times 10^3 N/m^2$

**C** $1.2 \times 10^4 N/m^2$

**D** $2.4 \times 10^4 N/m^2$

**15** On a warm day, a carton of fresh milk is covered with a wet cloth.

Why does this help to reduce the temperature of the milk?

**A** Some water evaporates from the cloth so the remaining water becomes cooler.

**B** The water has a very high thermal capacity.

**C** The water insulates the milk from the warm air around it.

**D** Water is always colder than the air around it.

**16** Air is trapped in a cylinder by a piston.

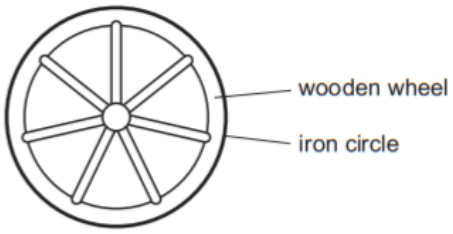
The piston is pushed inwards and the volume of the air is reduced.

The temperature of the trapped air remains constant.

Which row describes how the average speed of the air molecules and the average distance between them changes?

| | average speed of molecules | average distance between molecules |
|---|---|---|
| **A** | increases | decreases |
| **B** | increases | unchanged |
| **C** | unchanged | decreases |
| **D** | unchanged | increases |

**17** A wooden wheel can be strengthened by putting a tight circle of iron around it.




Which action would make it easier to fit the circle over the wood?

**A** cooling the iron circle

**B** heating the iron circle

**C** heating the wooden wheel and cooling the iron circle

**D** heating the wooden wheel but not heating or cooling the iron circle

**18** A student wishes to calibrate a mercury-in-glass thermometer with a °C scale.

Which values should she use for the lower fixed point and for the upper fixed point?

| | lower fixed point | upper fixed point |
|---|---|---|
| **A** | melting point of ice | boiling point of mercury |
| **B** | melting point of ice | boiling point of water |
| **C** | melting point of mercury | boiling point of mercury |
| **D** | melting point of mercury | boiling point of water |

**19** Which row gives the correct name for each change of state shown?

| | change of state | | |
|---|---|---|---|
| | gas to liquid | liquid to solid | solid to liquid |
| **A** | condensation | melting | solidification |
| **B** | condensation | solidification | melting |
| **C** | evaporation | melting | solidification |
| **D** | evaporation | solidification | melting |

**20** On a cold day, a metal front-door knob X and a similar plastic knob Y are at the same temperature.

Why does X feel cooler to the touch than Y?

**A** X convects thermal energy better than Y.

**B** X is a better thermal conductor than Y.

**C** X is a better insulator than Y.

**D** X is a better radiator of thermal energy than Y.