Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: GCSE Triple Science_Forces (High Demand Questions)

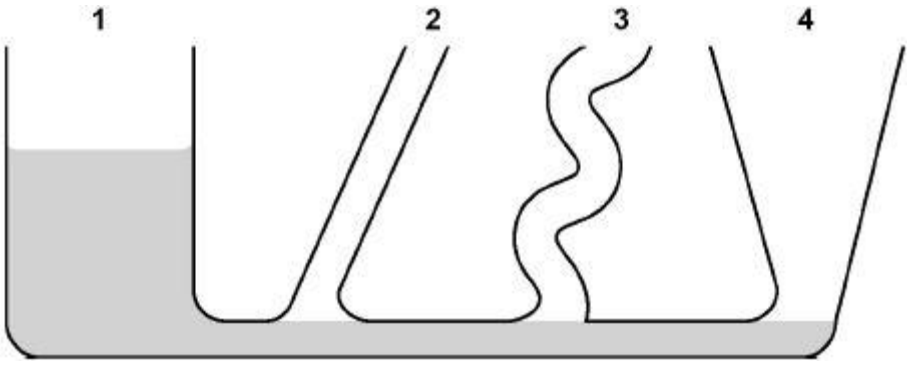
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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

The diagram below shows an unusually shaped container.

The container has four vertical tubes of different shape and size.



Water is poured into the container up to the level shown in tube **1**.

(a) Complete the diagram above to show the height of the water in tubes **2**, **3** and **4**.

(1)

(b) The further a swimmer dives below the surface of the sea, the greater the pressure on the swimmer.

Explain why.

_____

_____

_____

_____

(2)

(c) A person swims from a depth of 0.50 m to a depth of 1.70 m below the surface of the sea.

density of the sea water = 1030 kg/m^3

gravitational field strength = 9.8 N/kg

Calculate the increase in pressure on the swimmer.

Give the unit.

Use an equation from the Physics Equation Sheet.

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_____

_____

_____

_____

Increase in pressure = _____ Unit _____

(4)

(Total 7 marks)

Q2.

(a) **Figure 1** shows an aircraft flying at a constant velocity and at a constant height above the ground.

Figure 1



Complete the free body diagram in **Figure 2** to show the other two forces acting on the aircraft.

Figure 2



(2)

(b) A small aircraft accelerated down a runway at 4.0 m/s^2

The aircraft started from rest and reached a speed of 34 m/s just before take-off.

Calculate the distance the aircraft travelled while accelerating.

Give your answer to 2 significant figures.

_____

_____

_____

_____

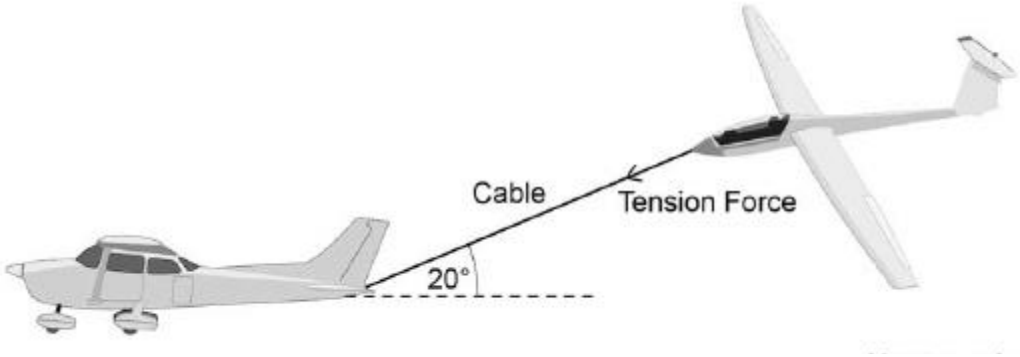
Distance = _____ m

(4)

(c) **Figure 3** shows the small aircraft being used to tow a glider.

Figure 3

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The tension force in the cable can be resolved into a horizontal component and a vertical component.

The tension in the cable is 2000 N

The cable makes an angle of 20° with the horizontal.

Draw a vector diagram to determine the magnitude of the two components of the tension force in the cable.

Magnitude of the horizontal component = _____ N

Magnitude of the vertical component = _____ N

(1)

(Total 10 marks)

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