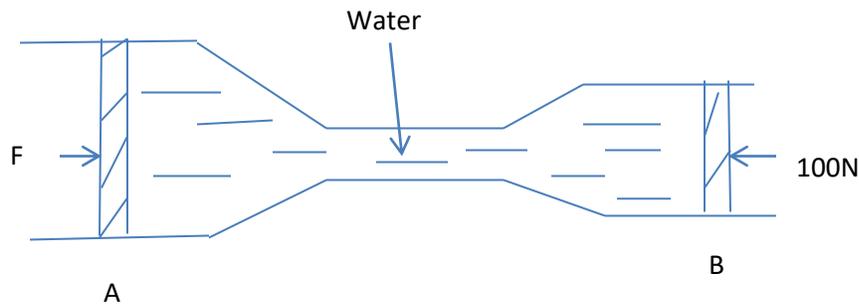


S.3 PHYSICS REVISION QUESTIONS (COVID-19 RECESS PERIOD)

Time allowed : 1 Hour

1.
 - (a) Define density and state its S.I unit.
 - (b) A man digging up a field discovered a large deposit of a glittering metal underground and suspected it to be gold. Describe an experiment the man can perform to identify this metal
 - (c) The mass of an empty density bottle is 10g. When fully filled with water its mass is 60g. The mass of the bottle when partially filled with mercury is 282g. When water is added to fill the rest of the space left by the mercury , the total mass increases to 312g. calculate the density of mercury.
 - (d) An alloy of mass 588g and volume 100cm^3 is made of iron of density 8.0gcm^{-3} and aluminium of density 2.7gcm^{-3} . Calculate the mass of iron in the alloy.
2.
 - (a) Define the term pressure and state its S.I unit.
 - (b) In a certain community, there is need to provide clean water to all homes to minimize health problems associated with contaminated water. To achieve this, water needs to be pumped from underground a reservoir set up at the top of the highest hill within the community from where it can flow by gravity to all parts of the community. As a physics student describe how you can use a simple barometer to help the community identify the highest hill.
 - (c) The diameter of cylinder A in the figure below is two times that of cylinder B.



Determine the force F necessary to keep the system in equilibrium when a force of 100N is applied on cylinder B

- d) A small hole of cross sectional area 4.0cm^2 at the bottom of a tank of height 5.0m is closed with a cork. Determine the force on the cork when the tank is filled with mercury.

(Density of mercury = 13600kgm^{-3})

END