

Signature: Name: Marks:

Barometer and Manometer Worksheet

Q1.

The figure shows a barometer. Calculate the pressure at

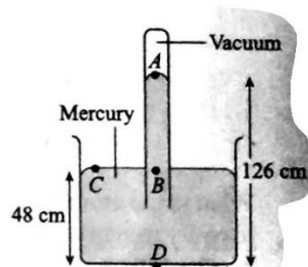


Figure 1.

- point A in cm Hg,
- Point B in cm Hg,
- Point C in cm Hg,
- Point D in cm Hg

Q2. The figure shows a barometer in a slanting position. If the atmospheric pressure is 76 cm Hg. Calculate

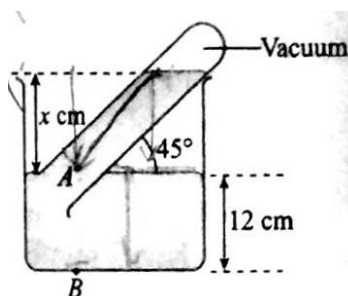


Figure 2.

- the length of x ,
- The pressure at A in cm Hg
- The pressure at B in cm Hg

Q3.

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The figure shows a mercury barometer that is used to measure atmospheric pressure. What is the atmospheric pressure in Pascal? [Density mercury = 13600 kg m^{-3} ; $g = 10 \text{ N kg}^{-1}$]

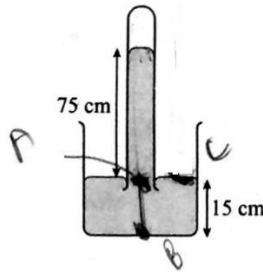


Figure 3.

Q4.

A mercury manometer as shown in the figure is used to measure the pressure of a certain gas.

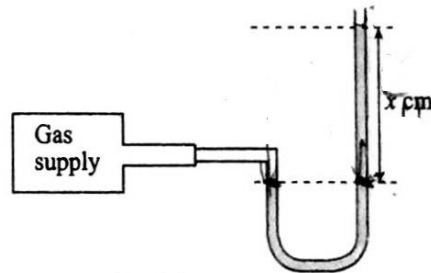


Figure 4.

- What is the length of x if the pressure of the gas is 113 cm Hg ?
- Calculate the gas pressure in Pascal

[Density of mercury = 13600 kg m^{-3} $g = 10 \text{ N kg}^{-1}$]

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Q5. The figure shows a U-tube used to determine the length of the mercury column. Based on the information shown, determine the length of x . [Density of mercury = 13600 kg m^{-3} ; water = 1000 kg m^{-3}]

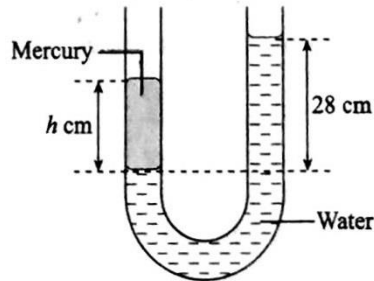


Figure 5.

Q6. The figure shows a manometer connected to a gas supply. Find the gas pressure in Pa. [Density of mercury = 13600 kg m^{-3} ; Atmospheric pressure = $103\,360 \text{ Pa}$; $g = 10 \text{ N kg}^{-1}$]

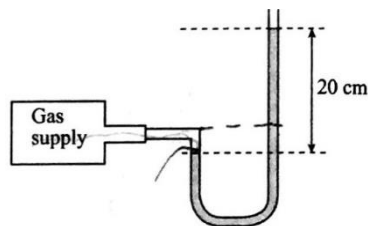


Figure 6.

Signature: Name: Marks: **Q7.**

Diagram 2 shows a manometer being used to measure the pressure of a gas supply.

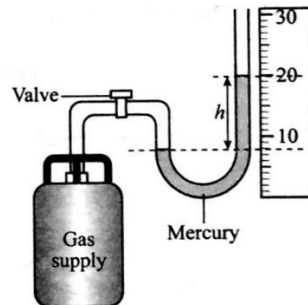


Figure 7.

a) Determine the pressure of gas in

- i) cm Hg
- ii) kPa

[Atm pressure = 76 cm Hg; Density of mercury = $13\,600\text{ kg m}^{-3}$]

b) What will happen to the difference in level of liquid, h in the manometer if

- i) The manometer tube is broader
- ii) A liquid denser than mercury is used in the manometer

c) The density of water is 1000 kg m^{-3} . Explain why water is not used in a manometer.