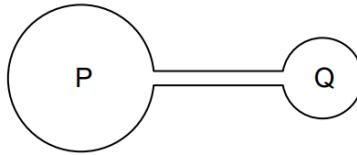**12** Two flasks P and Q contain an ideal gas and are connected with a tube of negligible volume compared to that of the flasks. The volume of P is triple the volume of Q.

P is held at a temperature of 200 K and Q is held at a temperature of 600 K.

What is the $\dfrac{\text{mass of gas in P}}{\text{mass of gas in Q}}$?

A $\dfrac{1}{9}$ **B** $\dfrac{1}{3}$ **C** 3 **D** 9