

- 13** Two vessels A and B of volume  $V$  and  $8V$  respectively are connected by a tube of negligible volume and contain an ideal gas at an initial temperature of  $10^\circ\text{C}$ .

Vessel A initially contains  $n$  moles of the ideal gas. Its temperature is then raised to  $80^\circ\text{C}$  while the temperature of B is maintained at  $10^\circ\text{C}$ .

How many moles of gas will be transferred between the vessels when steady state is reached?

**A**  $0.18 n$

**B**  $0.21 n$

**C**  $0.82 n$

**D**  $0.86 n$



[Turn over]