10 Two identical rigid boxes containing different ideal gases are in thermal contact.

Box A	Box B
1 mole argon T_o	2 moles neon $2T_o$

Box A contains 1 mole of argon gas initially at temperature T_o, while box B contains 2 moles of neon gas initially at temperature $2T_o$. Heat flows between the boxes until the gases reach a common final temperature T.

Ignoring the heat capacity of the boxes and assuming there is no heat exchange with the surroundings, what is the value of T?

(Mass of 1 mole of argon atoms = 40 g. Mass of 1 mole of neon atoms = 20 g.)

A $\frac{5}{2}T_o$ **B** $\frac{3}{2}T_o$ **C** $\frac{5}{3}T_o$ **D** $\frac{4}{3}T_o$