11   An ideal gas is confined in a cylinder fitted with a frictionless piston. When 90 J of heat is supplied and the gas is allowed to expand 2.5 x 10⁻⁴ m³ in volume at a constant pressure of 2.0 x 10⁵ Pa, the temperature rises by 4.5 K.

What is the increase in internal energy during this process?

A   40 J   **B**   50 J   **C**   90 J   **D**   140 J