12 A 150 g insulated pewter flask contains 100 g water at 30 °C. Ice cubes of mass 400 g at -40 °C is placed into the flask.

Given that
specific latent heat of fusion of water is 3.4×10^5 J kg^{-1}
specific latent heat of vaporization of water is 2.3×10^6 J kg^{-1}
specific heat capacity of water is 4.2×10^3 J kg^{-1} K^{-1}
specific heat capacity of ice is 2.1×10^3 J kg^{-1} K^{-1}
specific heat capacity of pewter is 170 J kg^{-1} K^{-1}

At the final equilibrium temperature, which of the following is correct?

A All water has formed ice.
B All ice has melted.
C Water and ice coexist at 0°C.
D Water and ice coexist at above 0°C.