24 A wire with resistance $8.66\ \Omega\ m^{-1}$ and diameter 0.050 mm is closely wound in a single layer to for a hollow solenoid. The resulting solenoid resembles a tube of length 200 mm and diameter 30 mm. The solenoid is connected in series to a battery of e.m.f. 6.0 V and negligible resistance as shown.

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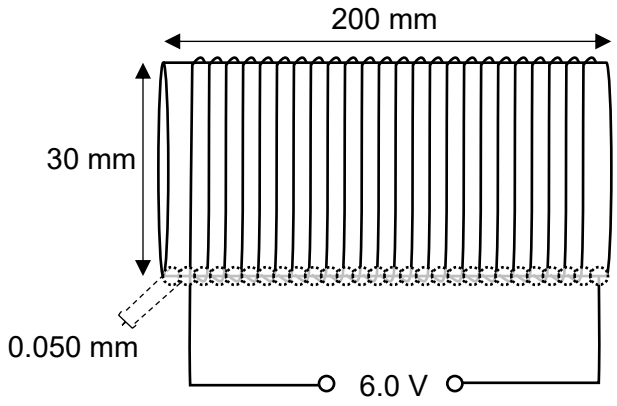

What is the largest possible magnetic flux density generated by the solenoid?

A 9.2×10^{-6} T
B 4.6×10^{-5} T
C 3.5×10^{-3} T
D 1.7×10^{-2} T