A. Recall Ni has magnetization of about 0.6 μB per atom. Fe has atomic number 2 less than Ni, i.e., \( M = 1.6 \, \text{μB/atom} \)

Recall \( μ_B = 9.27 \times 10^{-21} \, \text{ergs/μB} \)

\[ M = 1350 \, \text{emu/cm}^3 \quad \text{or} \quad M = 1350 \, \text{kA/m} \]

B.

C. Domain walls will mostly (or completely) be gone. For example, there may be one large domain covering whole sample with magnetization bending at the edge.

D. Recall \( H_{ex} = \frac{-J}{M_s^2} \) → \( H_{ex} = 250 \, \text{Oe} \)

E. \( K_{AV} V = (10^6 \, \text{ergs/cm}^3)(5 \, \text{nm})^3 \cdot π = 3.9 \times 10^{-13} \, \text{ergs} \)

\[ = 0.25 \, \text{eV} \]

\( \therefore \) AF grains are superparamagnetic.

\( \therefore \) Exchange bias vanishes and domains redevelop.