Magnetic Materials
Previous Year JEE Problems

5. A soft ferromagnetic material is placed in an external magnetic field. The magnetic domains :

a) may increase or decrease in size and change it's orientation.

b) increase in size but o change in orientation.

c) decrease in size and changes orientation.

d) have no relation with external field.

Sol. Atoms of ferromagnetic material in unmagnetized state form domains inside the ferromagnetic material. These domains have large magnetic moment of atoms. In the absence of magnetic field, these domains have magnetic moment in different directions. But when the magnetic field is applied, domains aligned in the direction of the field grow in size and those aligned in the direction opposite to the field reduce in size and also its orientation changes.

So option (a) is correct.

Sol. For Electromagnet and transformers , we require the core that can be magnetized and demagnetized quickly when subjected to alternating current. From the given graph, B is suitable.