Practical 5 – Topic 5

Electromagnetic induction

Criteria assessed

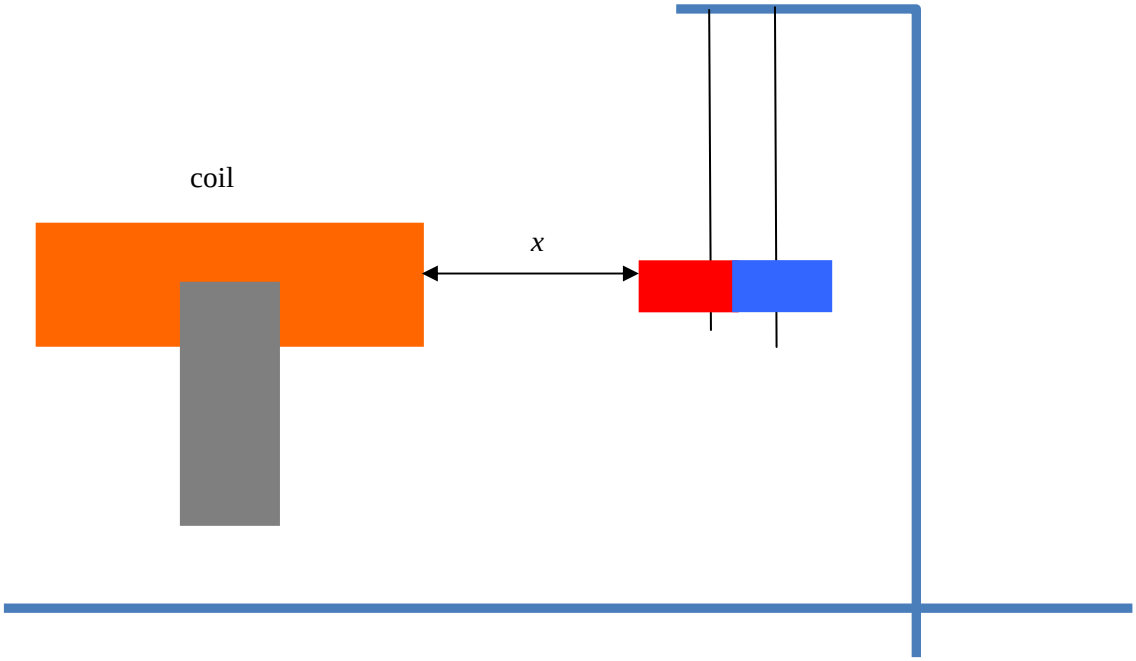
- DCP
- CE

Materials needed

- Coil
- Bar magnet
- Stand and clamps
- Strings
- a.c. voltage sensor

What to do

- Place the coil on the bench and attach the a.c. voltage sensor to the coil.
- Attach the magnet to two strings and hang it from a stand so that the magnet is right in front of the coil when the magnet is in equilibrium. Now displace the magnet from equilibrium by an angle θ (move out of plane of paper so that it swings in and out of the page).



- Record the voltage as the magnet swings past the coil for a fixed distance x.
- Repeat for different distances x and the same value of θ. How does the maximum reading of the sensor for the induced emf depend on x?
- Now keep x the same and vary θ. Hoes does the maximum induced voltage depend on θ?