

Question 5 (5 marks)

Figure 5 shows a solenoid consisting of uniformly wound wire with a square coil close to it. The square coil does not move relative to the solenoid. The solenoid is shown with a magnetic field around it for a particular instant.

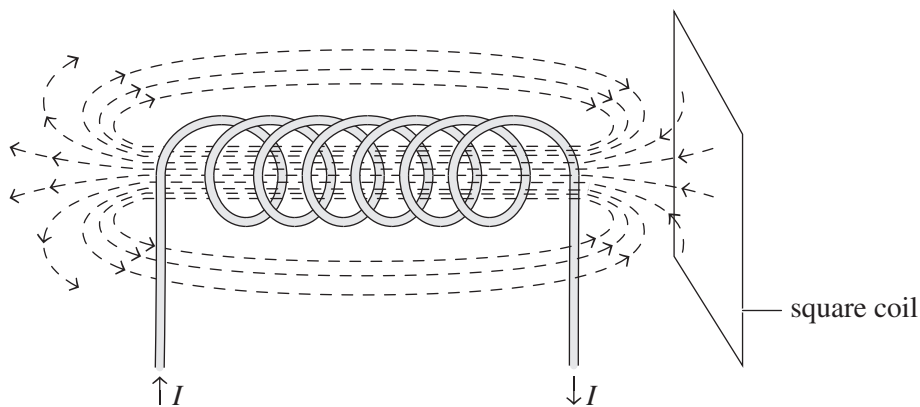


Figure 5

The solenoid is connected to a source of AC current that provides an alternating current, I , at 50 Hz.

- a. Sketch the magnetic flux through the square coil for 40 ms of time on the grid provided below, assuming that at $t = 0$ the current in the solenoid is 0 A. Do **not** include a vertical scale.

3 marks

