7 A bar magnet is suspended from a spring. One pole of the magnet oscillates freely in a coil of wire, as shown in Fig. 7.1.

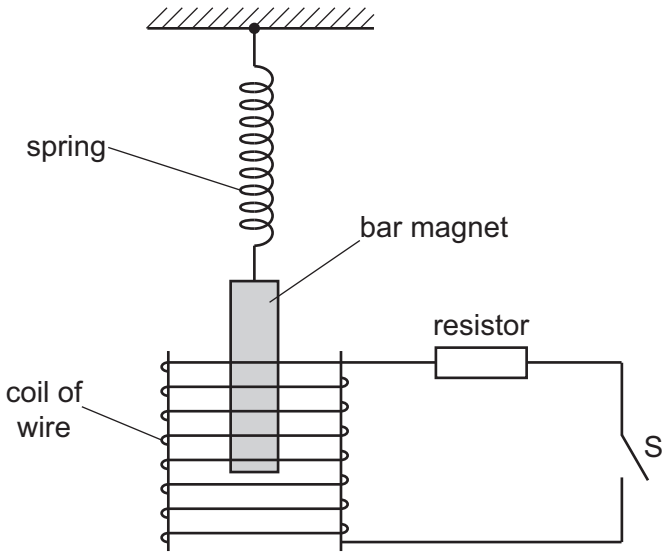

Fig. 7.1

The switch S is initially open.

(a) The switch S is now closed. As a result, the oscillations of the magnet are lightly damped.

(i) State what is meant by damping.

.....

.....

..... [2]

(ii) Describe what is observed to indicate that the damping is light.

.....

..... [1]

(iii) By reference to electromagnetic induction and to conservation of energy, explain why the oscillations are damped.

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.....

.....

..... [3]

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(b) The procedure in **(a)** is repeated after replacing the resistor with one of greater resistance.

Suggest, with a reason, the effect of this change on the oscillations.

.....

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..... [2]

[Total: 8]