

- 5 A model for a braking system is shown in Fig. 5.1. A large thin horizontal aluminium disc spinning about a vertical axle through its centre slows down as the poles of two magnets are brought near to it.

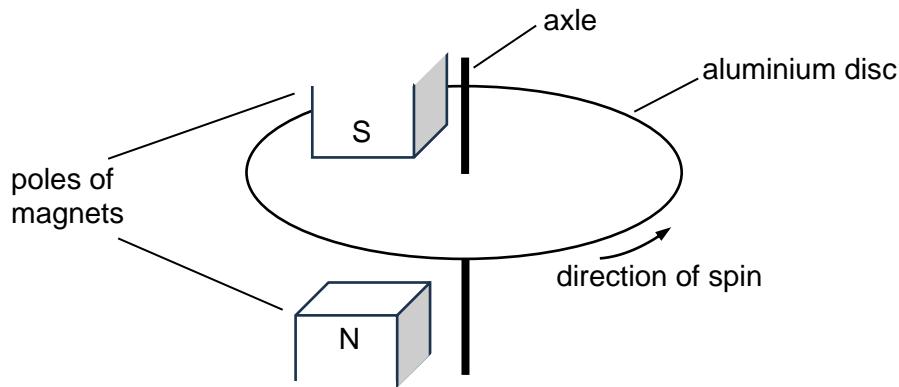


Fig. 5.1

- (a) Explain how the model of the braking system shows that Lenz's law is an example of the law of conservation of energy.

.....
.....
.....
.....
.....

[2]

- (b) Fig. 5.2 shows the top view of the disc.

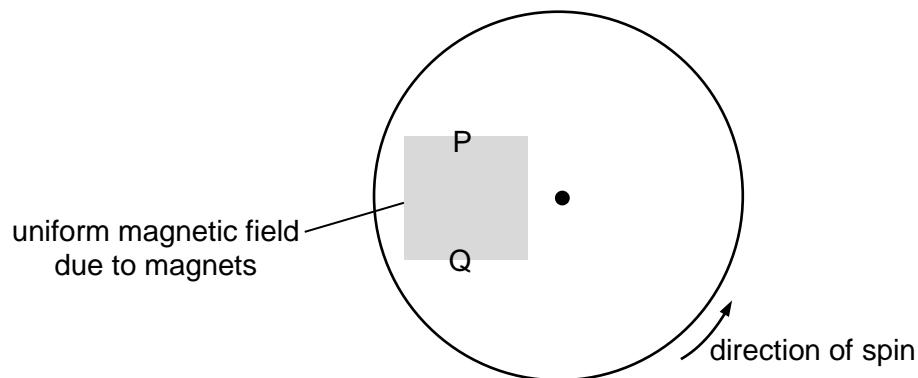


Fig. 5.2

On Fig. 5.2, draw the directions of the eddy currents induced at regions P and Q of the disc.

[1]

- (c) Explain why the angular velocity of the disc does not decrease linearly with time.

.....

.....

.....

.....

.....

.....

.....

.....

[3]