Question 10 (4 marks)
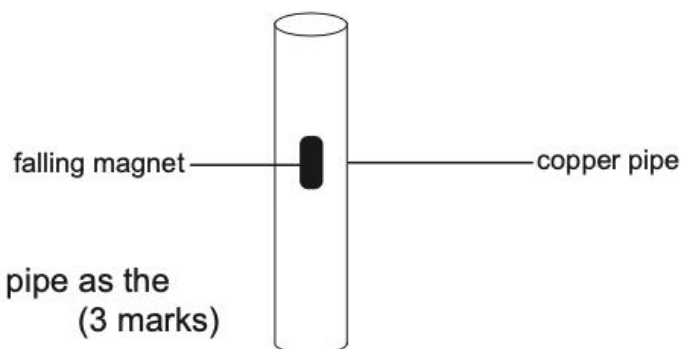
A very strong 55.0 g neodymium magnet is
dropped vertically down a hollow copper pipe.
The eddy currents induced in the copper provide
an upwards force which enables the magnet to
reach a terminal velocity of 8.51 cm s⁻¹.

falling magnet ———■——— copper pipe

(a) Calculate the power supplied as heat to the pipe as the
magnet falls at this velocity. (3 marks)

Answer _____ W

(b) Silver has a higher electrical conductivity than copper. How would your answer to part (a)
change if the pipe was now made of silver? Circle your answer. (1 mark)

(i) Increase (ii) Decrease (iii) No change