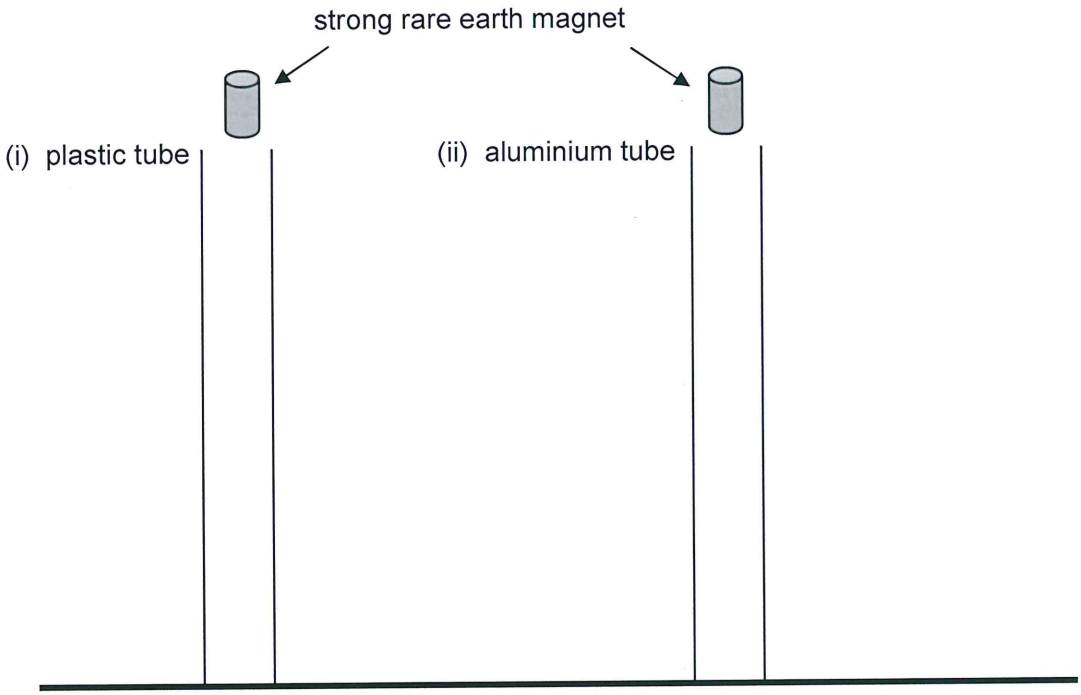
# Exam Questions
# Chapter 5·1 - Electromagnetic Induction
## Question 1 2010:1:10

**(4 marks)**

A physics teacher set up the equipment shown below.

One tube was made of plastic and the other of aluminium. The teacher dropped a strong rare earth permanent magnet down each tube.



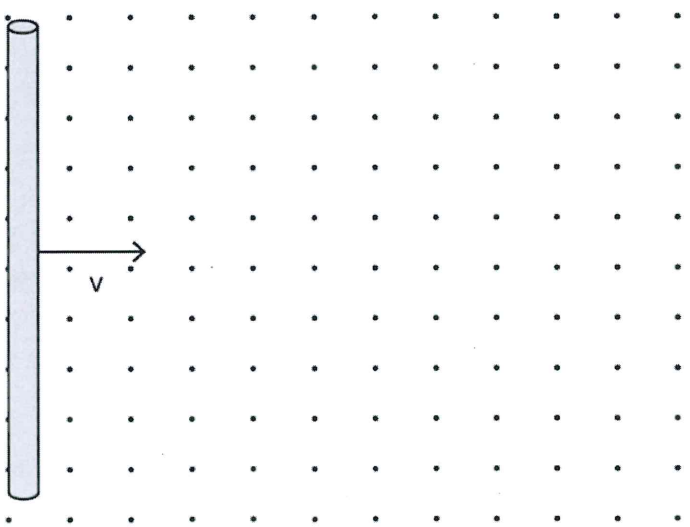

The magnet falling through the plastic tube travelled much faster than the magnet falling through the aluminium tube.

Explain, indicating clearly the physics principles involved. (4 marks)

## Question 2 2011:1:3

**(3 marks)**

A 12.5 cm long piece of copper wire is moved at a constant velocity of 6.56 m $s^{-1}$ through a magnetic field of 0.150 T. Calculate the potential difference between the ends of the wire and indicate on the diagram which end of the wire is positive.

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# Exam Questions
# Chapter 5.1 - Electromagnetic Induction
# Question 3 2011:1:Q1

**(4 marks)**

The diagram below shows a cross-section of a simple dynamic microphone. Describe how a musical note played near the diaphragm of the microphone can be detected by an amplifier. Your description should include an explanation of how the sound is converted to an electrical signal.