

- 12 (a) Photograph 1 shows part of an ammeter that can measure very small currents.



Photograph 1

A student moves a wire between the poles of a strong magnet and uses the ammeter to measure the induced current.

Determine the current reading shown by the ammeter in photograph 1.

(1)

current = mA

- (b) (i) Predict a value for the current if the movement of the wire was repeated with the poles of the magnet reversed.

(1)

current = mA

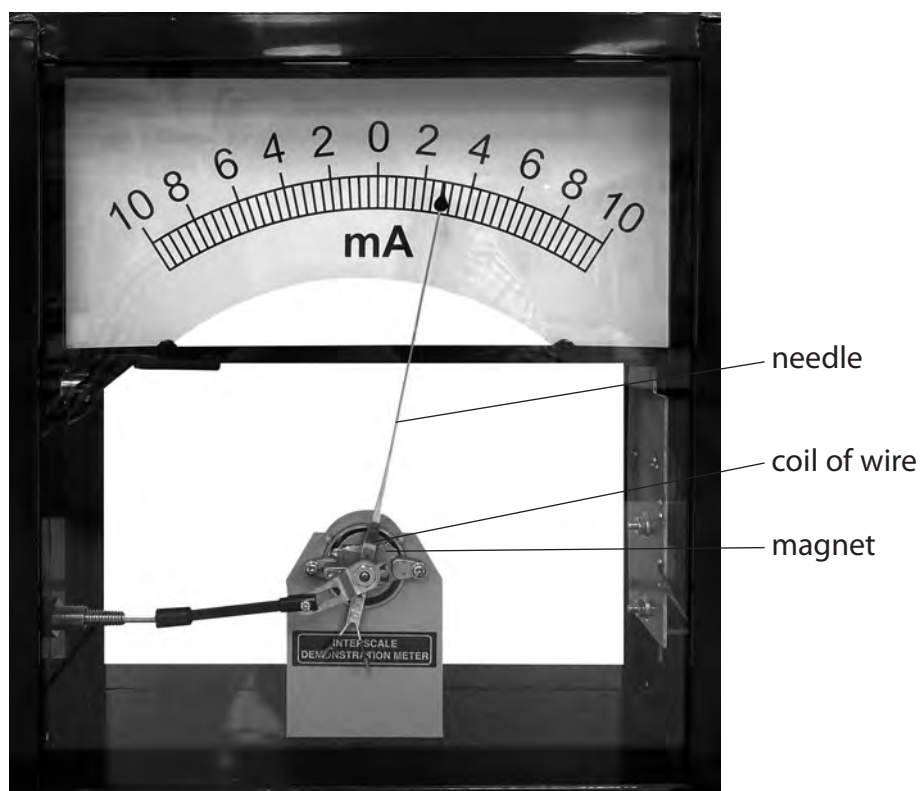
- (ii) Predict a value for the current if the wire is moved faster between the poles of the magnet.

(1)

current = mA



- (c) Photograph 2 shows the structure of the ammeter.
The ammeter has a needle attached to a coil of wire which can move freely around a magnet.
When there is a current in the coil, the needle moves.
The larger the current, the more the coil turns.



Photograph 2

Suggest how the design of the ammeter could be modified to increase its sensitivity.

(1)

QUESTION 12 CONTINUES ON NEXT PAGE



P 7 0 9 5 1 A 0 3 1 3 2

- (d) Photograph 3 shows part of the ammeter after a student has adjusted the ammeter in error.

The needle on the ammeter does not point to zero when there is no current.



Photograph 3

- (i) Which of these factors has been decreased by the student's adjustment? (1)

- ☐ **A** accuracy
- ☐ **B** precision
- ☐ **C** reliability
- ☐ **D** resolution

- (ii) Suggest how the student could correct the readings taken from this ammeter due to this error without adjusting the ammeter. (1)

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(Total for Question 12 = 6 marks)

TOTAL FOR PAPER = 110 MARKS



Pearson Edexcel International GCSE (9–1)**May–June 2022 Assessment Window****Paper
reference****4PH1/1P 4SD0/1P****Physics****UNIT: 4PH1****Science (Double Award) 4SD0****PAPER: 1P****Equation Booklet****Do not return this Booklet with the question paper.***Turn over* ►**P70951A**

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