

0 8

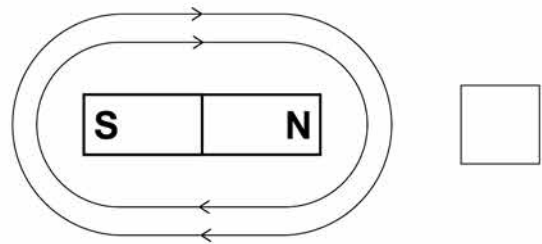
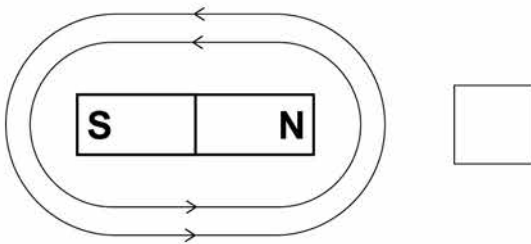
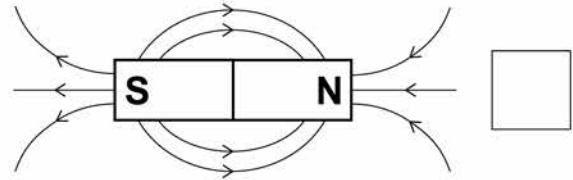
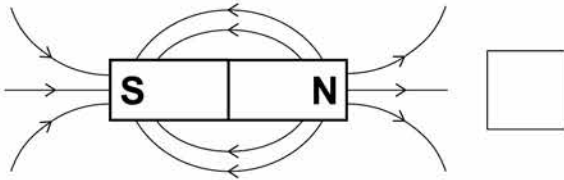
A magnet produces a magnetic field.

0 8 . 1

Which diagram shows the magnetic field pattern around a bar magnet?

[1 mark]

Tick **one** box.



0 8 . 2

Figure 13 shows three metal blocks.

The blocks are not labelled.

One block is a permanent magnet, one is iron and one is aluminium.

Figure 13

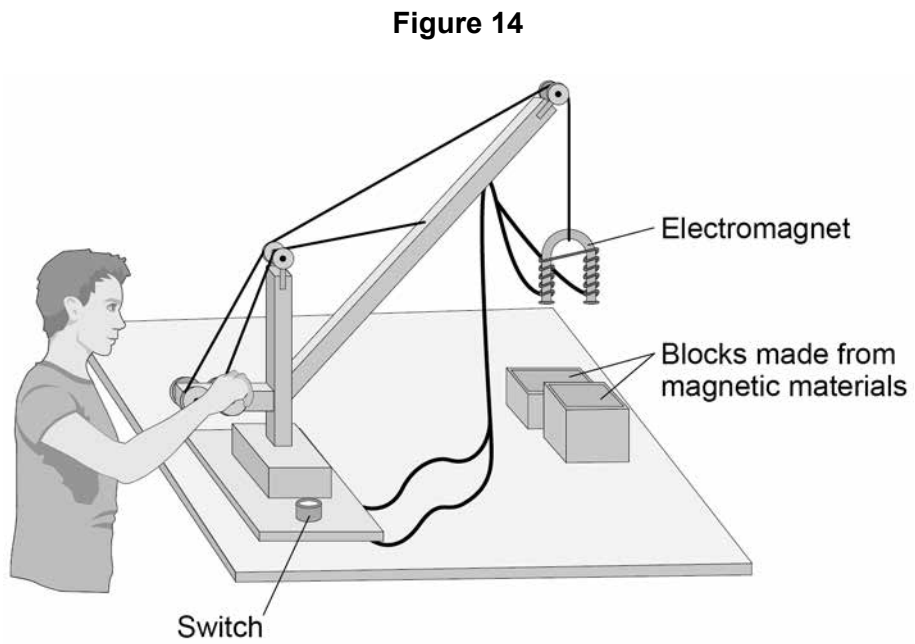


Describe how another permanent magnet can be used to identify the blocks.

[3 marks]



08.3 Figure 14 shows a toy crane.



The toy crane uses an electromagnet to pick up and move the blocks.
Explain how this electromagnet is able to pick up and move the blocks.

[6 marks]

END OF QUESTIONS

10

Turn over ►



| Question | Answers | Extra information | Mark | AO / Spec. Ref. |
|----------|---|-------------------|---------------------|---------------------------|
| 08.1 | 1st box ticked | | 1 | AO1 6.7.1.2 |
| 08.2 | (permanent magnet) has no effect on the aluminium iron is attracted (to the permanent magnet) (only) the (permanent) magnet can be repelled (by the permanent magnet) | | 1 1 1 | AO2 6.7.1.1 6.7.1.2 |

| Question | Answers | Mark | AO / Spec. Ref. |
|--------------|---|-----------|-----------------|
| 08.3 | Level 3: Relevant points (reasons / causes) are identified, given in detail and logically linked to give a clear account. | 5–6 | AO2 |
| | Level 2: Relevant points (reasons / causes) are identified, and there are attempts at logically linking. The resulting account is not fully clear. | 3–4 | AO2 |
| | Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking. | 1–2 | AO1 |
| | No relevant content | 0 | |
| | Indicative content <ul style="list-style-type: none"> • completing the circuit • turns the electromagnet on • there is a current in the coil • a magnetic field is produced around the coil • the iron core becomes magnetised • move electromagnet towards the blocks • the block is attracted to the electromagnet • moving the crane moves the block • switching off the current switches off the electromagnet • releasing the block | | 6.7.2.1 |
| Total | | 10 | |