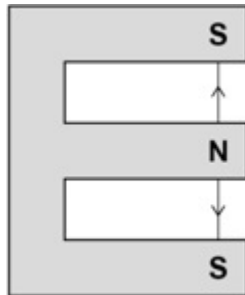Mark schemes

Q1.

(a) current

> *allow charge flow*

or

potential difference

1

(b)

1

(c) an induced magnet is a material that becomes a magnet when it is placed in a magnetic field

> *allow 'when close to another magnet' for 'when it is placed in a magnetic field'*

or

an induced magnet loses most / all of its magnetism (quickly) when removed from a magnetic field

> *allow 'no magnets are nearby' for 'removed from a magnetic field'*
>
> *'temporary magnet' alone is insufficient*

1

(d) motor effect

1

(e)   16 mA = 0.016 A

        allow 1.6 × 10^{-2} (A)

                                                            1

0.013 = B × 0.016 × 6.5

        allow correct substitution using
        incorrectly / not converted current

                                                            1

$$B = \frac{0.013}{0.016 \times 6.5}$$

        allow correct re-arrangement using
        incorrectly / not converted current

                                                            1

B = 0.125 (T)

        allow correct calculation using
        incorrectly / not converted current
        allow 0.13 (T)

                                                            1

                                                                      [8]