Practice Question Set For GCSE
**Subject : Physics**
**Paper-2 Topic: GCSE Triple Science_Magnetism And Electromagnetism(LDQ)**

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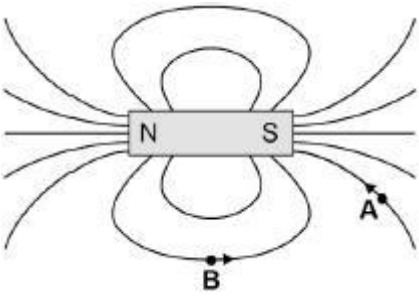
**Name of the Student**:_____
**Max. Marks : 24 Marks** **Time : 24 Minutes**

Mark Schemes

## Q1.

(a) both arrows correct

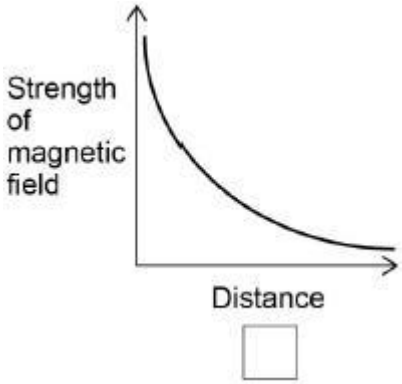



**1**

(b) a permanent magnet

**1**

(c) third box ticked




**1**

any **one** from
- (the only graph) that shows the magnetic field getting weaker (as distance increases)
- both other graphs show the magnetic field getting stronger (as the distance increases)

*only scores if correct box is chosen*

**1**

(d) steel cans are attracted to the electromagnet and are transferred to the container (by the conveyor belt)

**1**

aluminium cans are not attracted to the electromagnet and are left behind on the table

*If no other mark scored: Steel cans are attracted (to the electromagnet) but aluminium cans are not – scores one*

*mark*

**1**

(e) raise the height of the table

*allow longer legs on the table*

*allow put a (non-magnetic) box on top of the table*

*allow lower the electromagnet*

**1**

use a larger potential difference / current

**or**

use a stronger electromagnet

*allow more turns on the coil (of the electromagnet)*

*do **not** accept insert a (soft) iron core*

**1**

(f) distance travelled = speed × time

**or**

$s = v\,t$

**1**

(g) $3.3 = 1.7 \times t$

**1**

$t = \frac{3.3}{1.7}$

**1**

$t = 1.941$ (s)

**1**

$t = 1.9$ (s)

*allow a calculation using the given data incorrectly but correctly rounded to 2 sig figs*

**1**

**[13]**

## Q2.

(a) (the north pole of the floating magnet is) repelled from the north pole (of the fixed magnet)

**1**

and attracted to the south pole (of the fixed magnet)

*allow following a magnetic field line for **1 mark** if no other marks scored*

**1**

(b) it was attracted (to the fixed magnet)

*allow it sticks / joins to the (fixed) magnet*

*allow it becomes an induced magnet*

*allow it becomes magnetised*

**1**

(c) **Level 2:** The design/plan would lead to the production of a valid outcome. All key steps are identified and logically sequenced.

**3–4**

**Level 1**: The design/plan would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.

**1–2**

**No relevant content**

**0**

**Indicative content:**

- mark where the compass points on the paper
- move the compass to the marked point
- repeat until you go back to the magnet
- join up the points
- add an arrow pointing from the north pole to the south pole
- repeat for positions (above and below the bar magnet)

(d) C B A

*allow **1** mark for one letter in the correct box*

**2**

(e) $E_e = 0.5 \times 200 \times 0.040^2$

**1**

$E_e = 0.16$ (J)

**1**

**[11]**