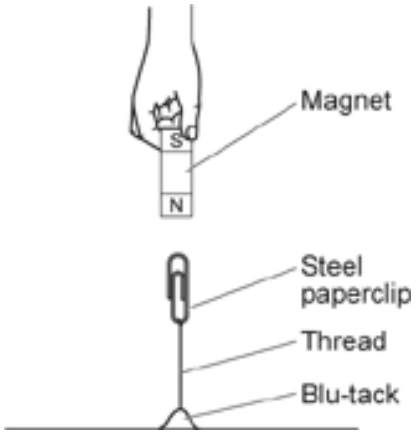
1. A student holds a bar magnet above a paperclip. The paperclip is attracted to the bar magnet.

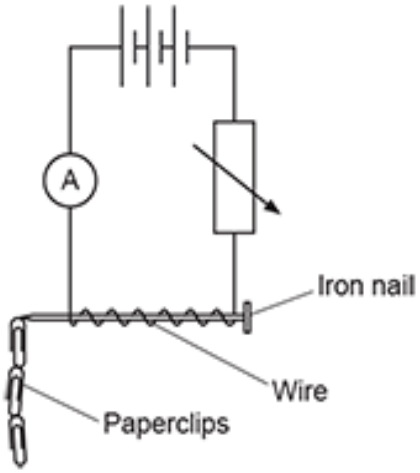


Which row of the table correctly describes the bar magnet and paperclip?

	Bar magnet	Paperclip
A	induced magnet	induced magnet
B	induced magnet	permanent magnet
C	permanent magnet	induced magnet
D	permanent magnet	permanent magnet

Your answer ☐ **[1]**

2(a). A student makes a solenoid by wrapping wire around an iron nail as shown in the diagram.



The student investigates how the current in the wire affects the magnetic field of the solenoid.

The student varies the current in the wire and uses the number of paperclips picked up by the solenoid as a measure of the strength of the magnetic field.

The results of this experiment are shown in the table.

Current (A)	Number of paperclips picked up
1	5
2	11
3	17
4	22
5	28
6	32

Describe the trend shown by these results.

Suggest what the student should have done in their method to obtain accurate and valid results.

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[6]

(b). Suggest why the student uses an iron nail in the centre of the solenoid.

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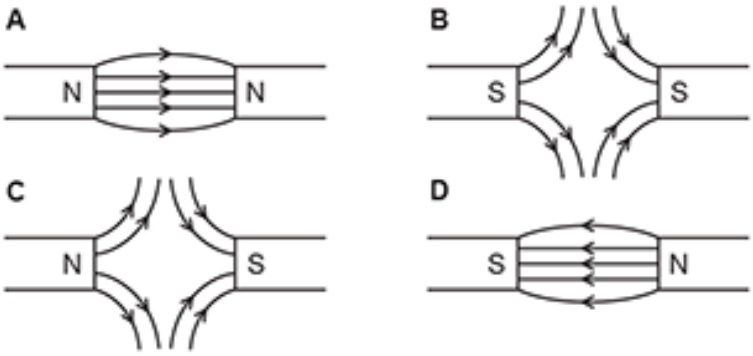
[1]

3. A student draws the magnetic field lines between the poles of two magnets.



Which magnetic field line diagram is correct?

Your answer ☐ **[1]**

END OF QUESTION PAPER