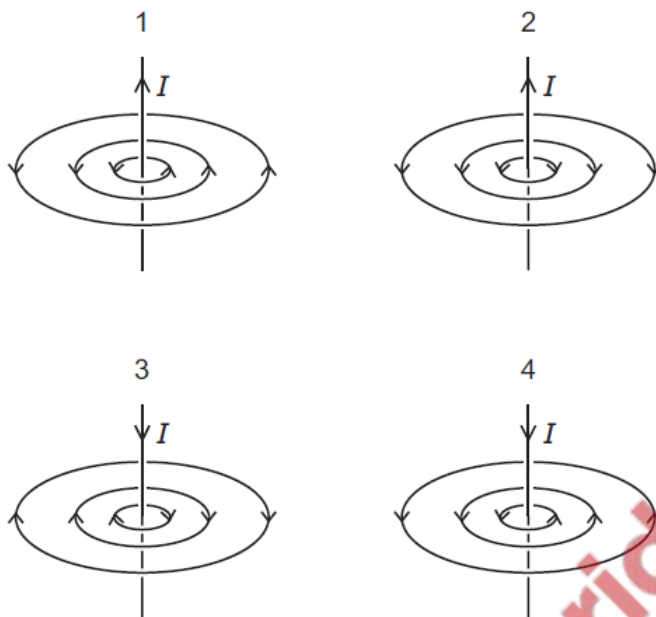


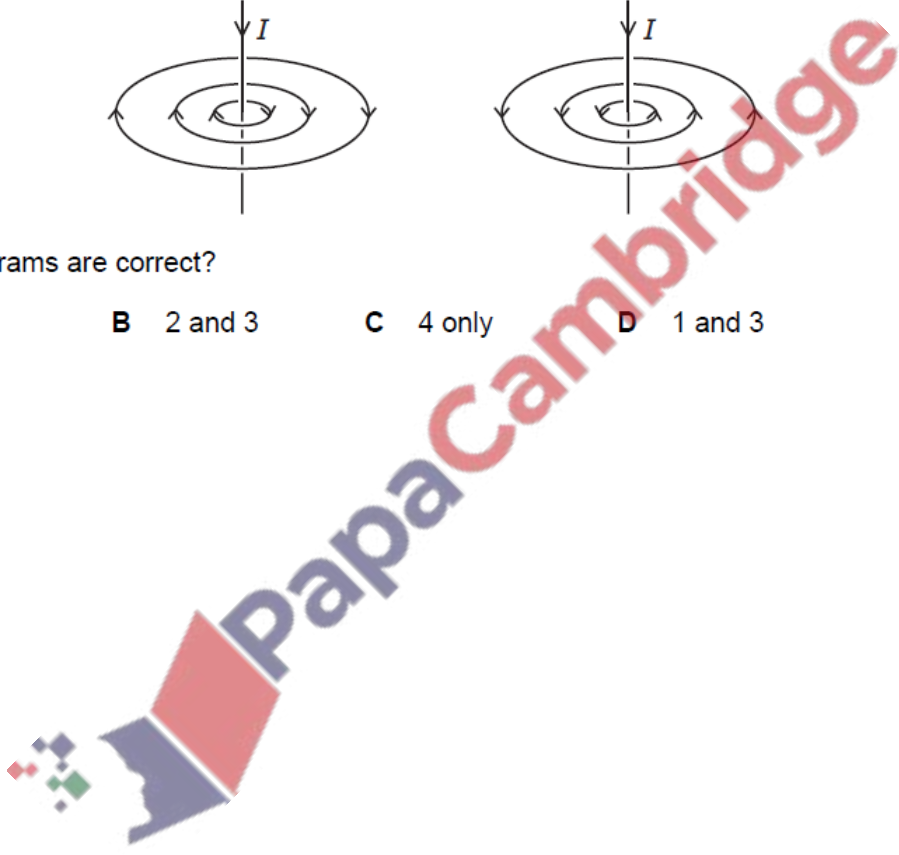
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The diagrams show the magnetic field lines around a wire carrying a current,  $I$ .

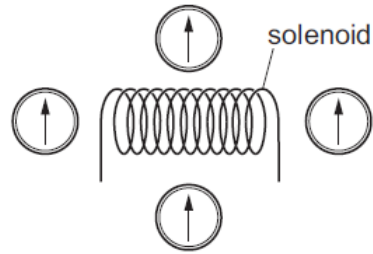


Which diagrams are correct?

- A** 1 only      **B** 2 and 3      **C** 4 only      **D** 1 and 3



Four small compasses are placed around a solenoid.



A current is now switched on in the solenoid.

Which diagram shows possible new directions of the compass needles?

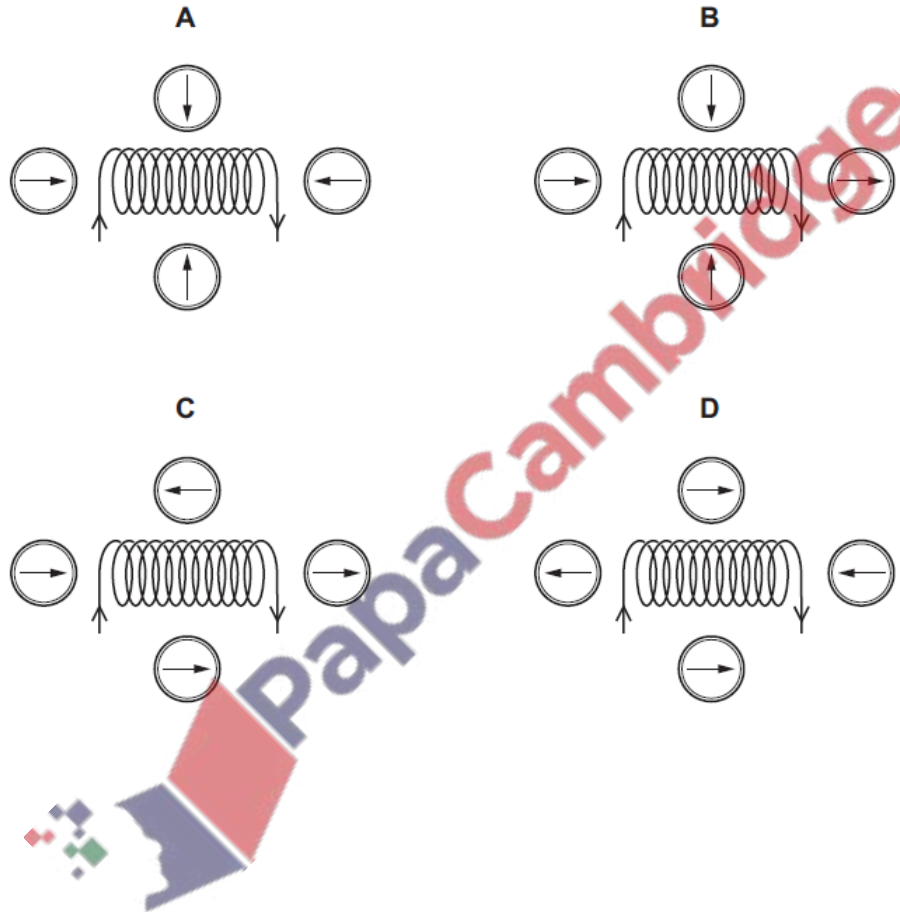


Fig. 7.1 shows an arrangement that can produce a magnet.

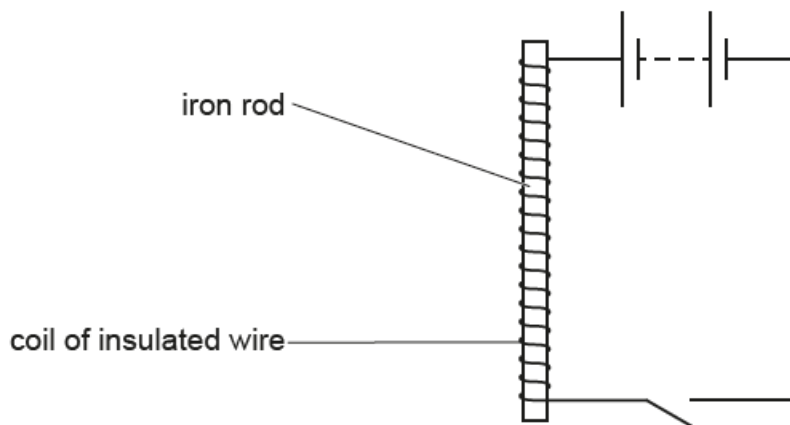


Fig. 7.1

- (a) (i) State the name given to the type of magnet in Fig. 7.1.  
 ..... [1]
- (ii) Suggest an advantage of this type of magnet in comparison with other types of magnet.  
 .....  
 ..... [1]
- (iii) State **two** ways of increasing the strength of the magnet in Fig. 7.1.  
 1. .... [1]  
 2. .... [1]
- (iv) Suggest **one** use for this type of magnet.  
 ..... [1]
- (b) (i) Compare the effect of using a steel rod instead of an iron rod in the arrangement in Fig. 7.1.  
 The steel rod is the same size as the iron rod.  
 .....  
 ..... [1]

- (ii) Compare the effect of using a copper rod instead of an iron rod in the arrangement in Fig. 7.1.  
The copper rod is the same size as the iron rod.

.....

..... [1]

[Total: 7]

