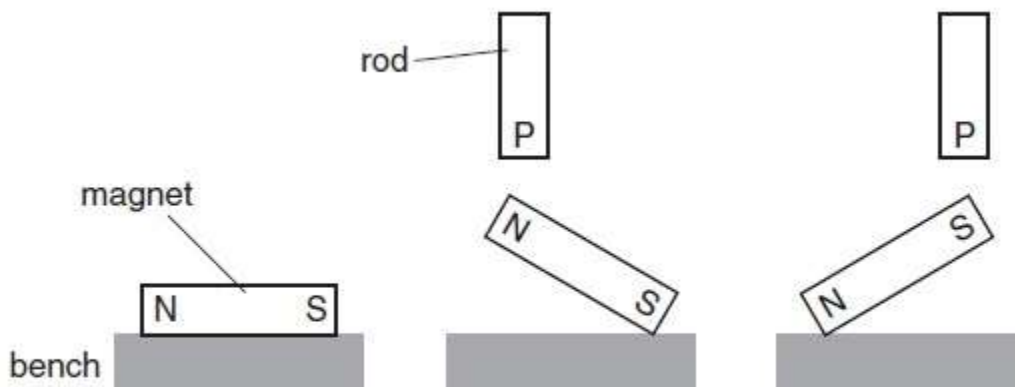


**MAGNETISM**

1. (a) A magnet is placed on a bench, as shown in Fig. 8.1a. End P of a rod is held above each end of the magnet in turn, as shown in Fig. 8.1b and in Fig. 8.1c. One end of the magnet is lifted off the bench in both cases.



**Fig. 8.1a**

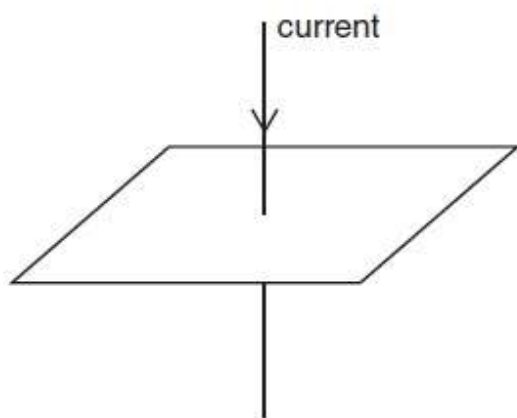
**Fig. 8.1b**

**Fig. 8.1c**

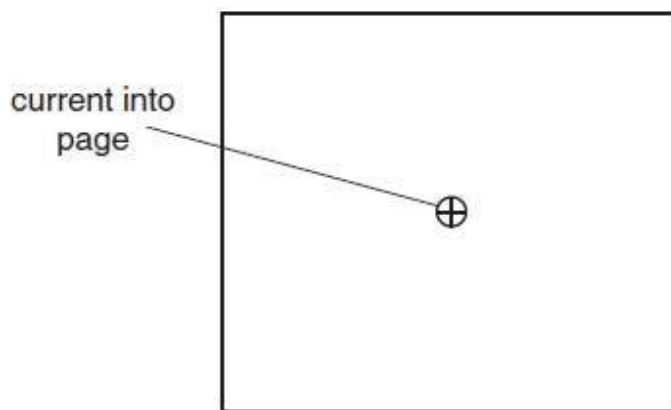
(i) Suggest what material the rod is made from.  
.....[1]

(ii) Explain how the rod lifts each end of the magnet off the bench.

[2]  
(b) Fig. 8.2 and Fig. 8.3 show views of a wire carrying a current downwards through a horizontal board.



**Fig. 8.2**



**Fig. 8.3 (viewed from above)**

- (i) On Fig. 8.3, draw the magnetic field due to the current in the wire. [2]
- (ii) The magnetic field is stronger closer to the wire. State how the magnetic field lines indicate that the field is stronger.

[1]

- 2. (a) Describe an experiment to plot the magnetic field around a bar magnet.

- (b) Describe how a coil of wire may be used [5]
- (i) To make a bar magnet,
  - (ii) To demagnetise a bar magnet.

- (c) State how the magnetic properties of iron make it a suitable material for the core of an electromagnet. [3]

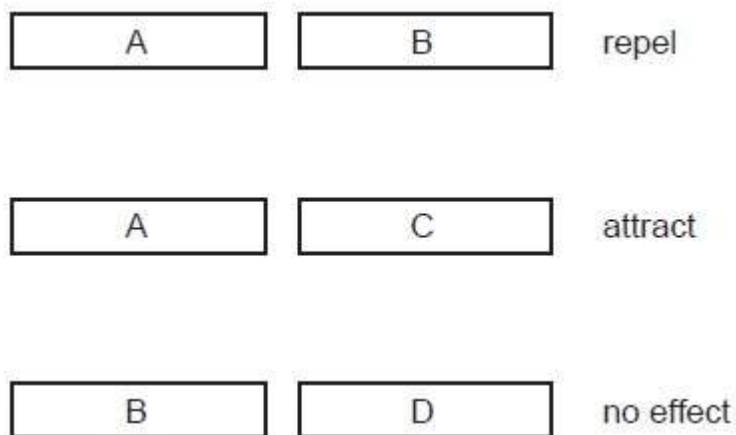
[2]

[Total: 10]

3. (a) State what is meant by a magnetic field.

[2]

4. A, B, C and D are an aluminium bar, an unmagnetised iron bar and two bar magnets. Tests are performed to find out which bar is which.



Which bar is which? Complete the lines below.

Bar A is.....

Bar B is.....

Bar C is.....

Bar D is.....

[4]

5. (a) An iron rod is placed next to a bar magnet, as shown in Figure below.



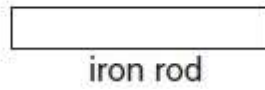
[For each of the following question select the answer from the following words]

- |              |  |
|--------------|--|
| nothing      |  |
| they attract |  |
| they repel   |  |

(i) On figure, mark clearly the north pole and the south pole that are induced in the iron rod.

(ii) What happens to the magnet and the rod?

(b) A second bar magnet is now placed next to the iron rod, as shown in Figure below.

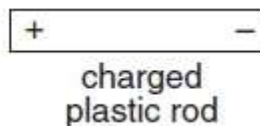


- (i) On Figure, mark clearly the magnetic poles induced in the iron rod. [1]
- (ii) What happens to the iron rod and the second magnet?



What happens to the two magnets?

- (d) The second magnet is removed and replaced by a charged plastic rod, as shown in Figure below.



What happens to the magnet and the plastic rod?

[6m]