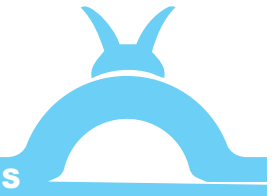
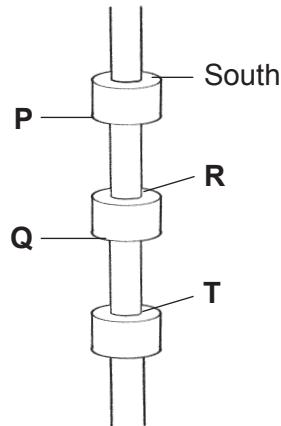


Magnets



For questions 1 – 4, write down your answers in the spaces provided.

1. Study the diagram which shows three magnets on a pole.



(a) The above phenomenon is made possible because of a certain characteristic of magnets. Identify the characteristic. [1m]

(b) Identify the poles of the metal rings with either 'North' or 'South'. [1m]

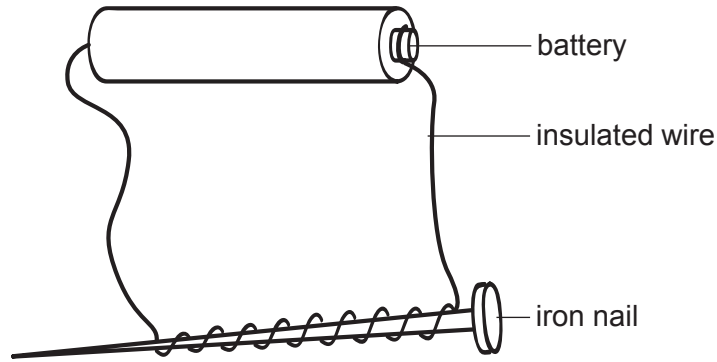
P: _____

Q: _____

R: _____

T: _____

2. Mabel conducts an experiment as shown below.



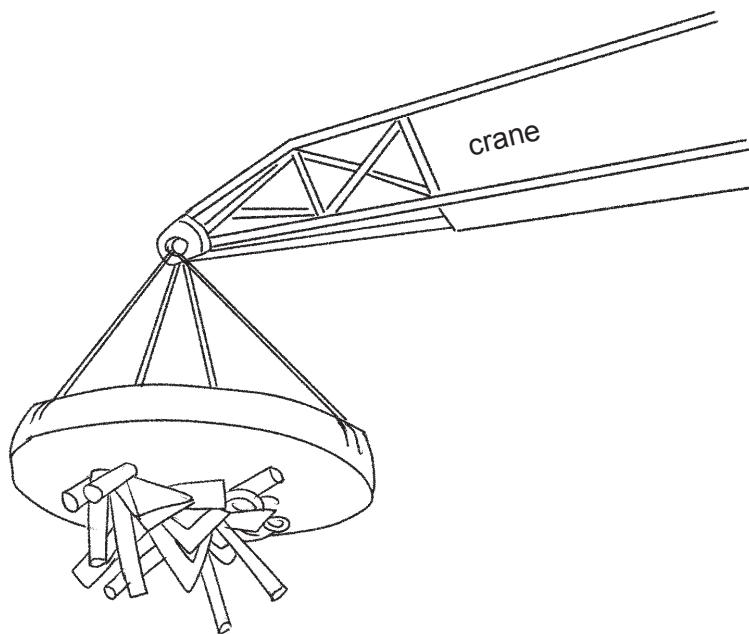
(a) (i) What will happen to the nail? [1m]

(ii) What simple test can Mabel conduct to show what had happened to the nail described in (i)? [1m]

(b) (i) If Mabel added another battery to the set-up shown above, what effect would it have on the nail? [1m]

(ii) Explain your answer given in (i). [1m]

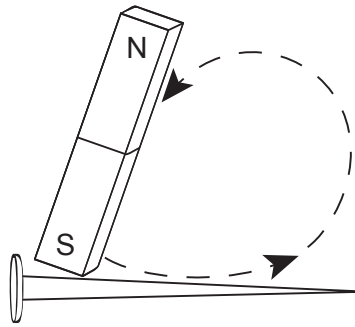
3. The diagram below shows a crane with a magnet at its end. It is commonly seen at a scrap yard.



- (a) What type of magnet does the crane above use? [1m]

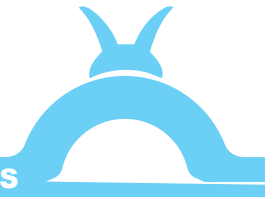
- (b) What is the property of the magnet which makes it different from other magnets? [1m]

4. Joshua used the stroking method to make a temporary magnet. He was told that the strength of the temporary magnet depends on a number of factors.



- (a) List down two factors that would affect the strength of the temporary magnet. [1m]

- (b) In the diagram above, label clearly the North and South poles of the nail after it has been magnetised. Use 'N' for North pole and 'S' for South pole. [1m]



1. (a) For all magnets, like poles repel.
(b) P: North
Q: South
R: North
T: South
2. (a) (i) It will become an electromagnet.
(ii) She can put some metal objects like paperclips or staples near the electromagnet. They will be attracted to the iron nail.
(b) (i) It would become a stronger electromagnet.
(ii) There is more electrical current flowing through the coil to produce a magnetic field and magnetise the nail.
3. (a) It uses an electromagnet.
(b) The electromagnet becomes magnetised only when a current is running through the wire around it. Hence, its magnetism can be turned on and off by a switch.
4. (a) The factors include the number of times Joshua stroked the nail with the magnet and the use of a stronger magnet to stroke the nail.

