

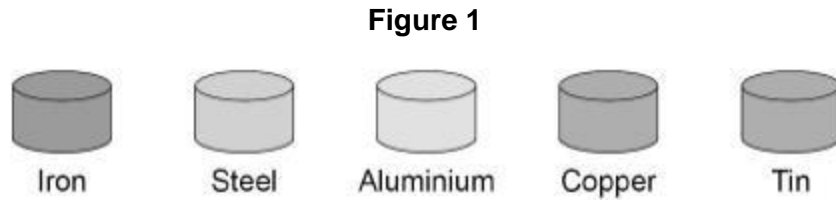
Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Q1.

Figure 1 shows five different metal samples.



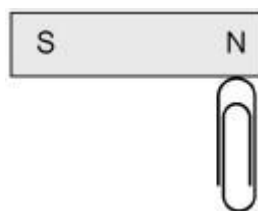
(a) A student placed a magnet close to each metal sample.

Describe what happened.

(2)

Figure 2 shows a paper clip being attracted to a permanent magnet.

Figure 2



(b) The paper clip in **Figure 2** is not a permanent magnet.

Explain what would happen if the paper clip was removed and brought close to the south pole of the permanent magnet.

(2)

(c) Write down the equation that links gravitational field strength (g), mass (m) and weight (W).

(1)

(d) The student added more paperclips to one end of the magnet.

The maximum number of paperclips the magnet could hold was 20

Each paper clip had a mass of 1.0 g

gravitational field strength = 9.8 N/kg

Calculate the maximum force the magnet can exert.

Force = _____ N

(3)

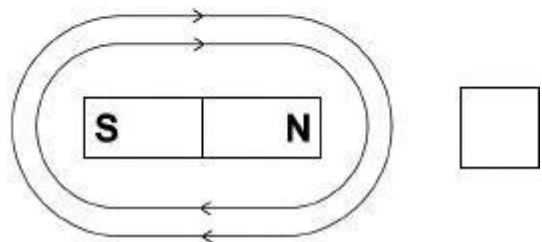
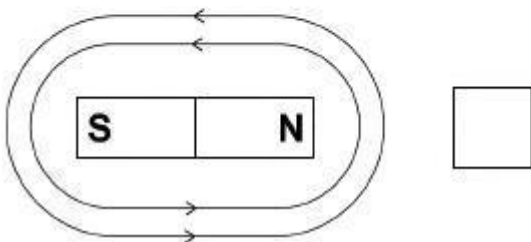
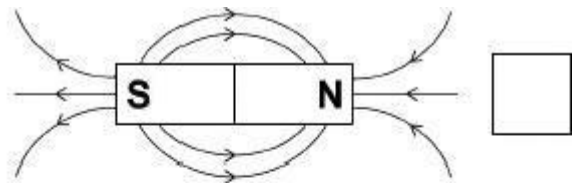
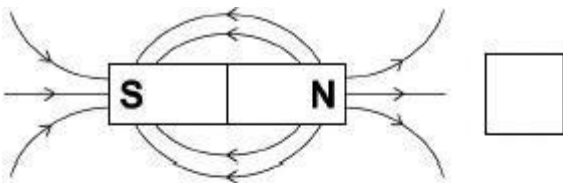
(Total 8 marks)

Q2.

A magnet produces a magnetic field.

(a) Which diagram shows the magnetic field pattern around a bar magnet?

Tick **one** box.



(1)

(b) **Figure 1** shows three metal blocks.

The blocks are not labelled.

One block is a permanent magnet, one is iron and one is aluminium.

Figure 1

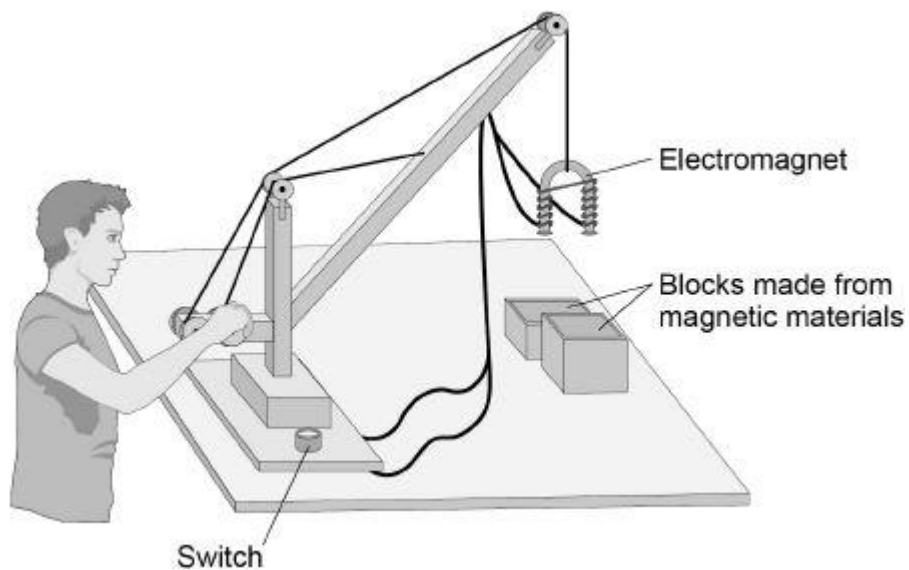


Describe how another permanent magnet can be used to identify the blocks.

(3)

(c) **Figure 2** shows a toy crane.

Figure 2



The toy crane uses an electromagnet to pick up and move the blocks.

Explain how this electromagnet is able to pick up and move the blocks.

(6)
(Total 10 marks)