

NAME:

DATE:

CLASS:

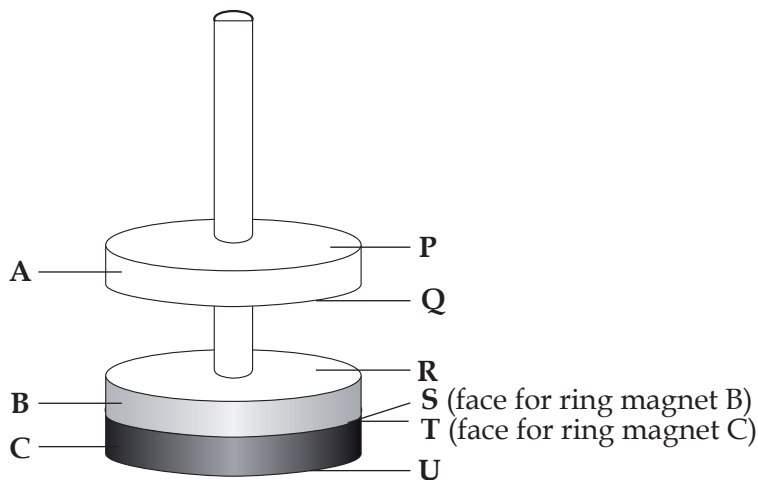
MARKS

10

Magnets



1. Study the diagram below and answer the questions that follow.
A, B and C are ring magnets.



- (a) Why is ring magnet A able to float above ring magnet B? [2m]

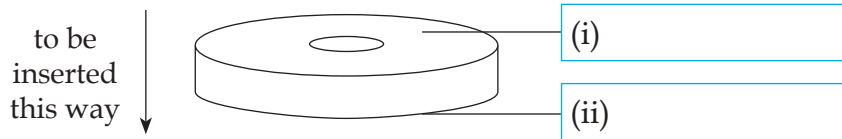
- (b) Complete the table below to indicate the polarities of faces P, Q, R, S, T and U of the three ring magnets.

Write 'N' to indicate a North pole and 'S' to indicate a South pole in the respective boxes. [3m]

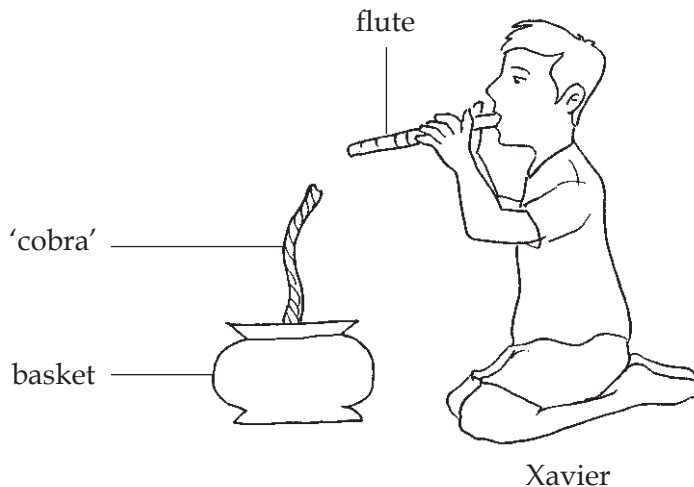
Face	P	Q	R	S	T	U
Polarity						

- (c) A fourth ring magnet is to be inserted above magnet A. Indicate the polarity of both faces of this magnet if it is to float above magnet A.

[1m]



2. Xavier performed a 'magic trick' in front of his classmates. By blowing a tune on his flute and moving to the music, he made a 'cobra' (actually a piece of rope) rise up from inside a basket.



How did Xavier make the 'cobra' rise from the basket?

[4m]

Magnets



1. (a) The faces of ring magnets A and B which are facing each other are like poles. Hence, they repel, causing ring magnet A to float above ring magnet B.

(b)

Face	P	Q	R	S	T	U
Polarity	N	S	S	N	S	N

OR S N N S N S

- (c) (i) S (ii) N (if P was N)
OR
 (i) N (ii) S (if P was S)

2. There was a magnet in the tip of the flute and a magnetic material at the head of the 'cobra'. When the tip of the flute was brought close to the head of the cobra, magnetic attraction occurred. The flute and 'cobra' do not need to touch each other for magnetic attraction to occur. This enabled Xavier to control the 'cobra's' movements.