PHYSICS

BOOKS - S CHAND IIT JEE FOUNDATION

MAGNETISM

Question Bank 6

1. State whether the following statements are true or false

It is possible to havé a magnet like a cylindrical magnet having only one pole.

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2. State whether the following statements are true or false

Some non-magnetic materials can be converted into magnets

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3. State whether the following statements are true or false

Like poles of magnets repel each othes.

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4. State whether the following statements are true or false

Maximum iron filings stick in the middle of the bar magnet when it is brought near them.

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5. State whether the following statements are true or false

Bar magnets always point towards North South direction

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6. State whether the following statements are true or false

A compass can be used to find East - West direction at any place

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7. State whether the following statements are true or false

Rubber is a magnetic material

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8. State whether the following statements are true or false

Magnetie property is destroyed when a magnet is heated strongly

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9. State whether the following statements are true or false

A compass helps in determining directions.

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10. State whether the following statements are true or false

If a magnet is cut into two halves, the north pole will get separated from the south pole:

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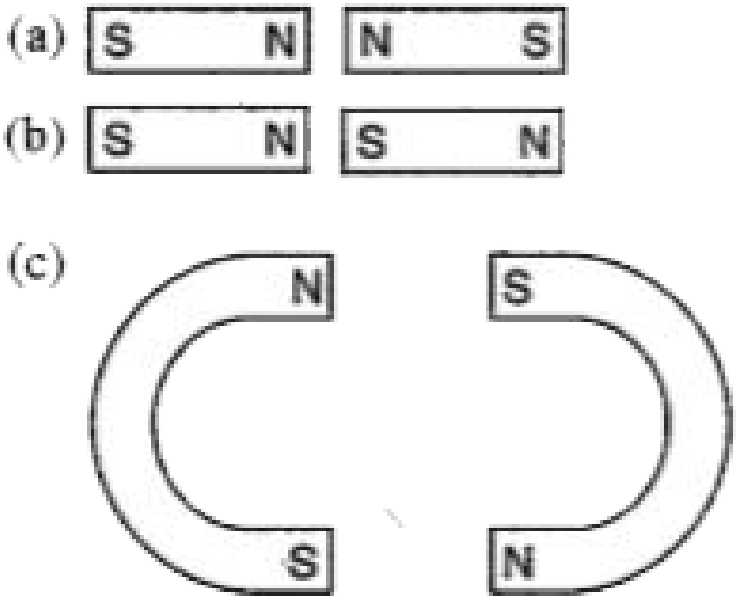
11. For each of the cases in the figure below, identify whether the magnets will attract or

repel one another.



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12. When you break a bar magnet in half, how many poles does each piece have?

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13. If two magnets push each other away, what can you conclude about their poles?

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14. Which magnetic pole is closest to the geographic north pole?

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15. Name three properties of magnets.

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16. What metal is used to make ferronmagnets?

A. iron

B. cobalt

C. nickel

D. all of the above

Answer:

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17. A freely suspended magnet always lies in

A. North-South direction

B. North-East direction

C. East-West direction

D. South-Bast direction

Answer:

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18. The magnetic field is maximum at

A. middle part of the magnet

B. all places in the magnet

C. North-South direction

D. none of these

Answer:

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19. Magnetic poles always exist as

A. dipole

B. monopole

C. no-pole

D. none of these

Answer:

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20. Which substance among the following is a magnctic substance

A. copper

B. iron

C. silver

D. aluminium

Answer:

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21. Match correctly:

Column I	*Column II*
(i) A magnet is dropped from a height on a hard rock	(a) magnetism is induced in the soft iron bar
(ii) An electric current is passed into a coil of copper wire wound around a soft iron bar	(b) magnetism is lost
(iii) A soft iron bar is placed in line with a magnet	(c) the iron bar is magnetised
(iv) A strong magnet is stroked on an iron bar from one end to the other a number of times.	

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22. A bar magnet has no markings to indicate its poles. How would you find out near which end is its north pole located?

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23. When any magnet is cut into four equal parts and then they are againjoined by quick fix thena new magnet will behave as

A. four bar magnets

B. four ordinary rods

C. one ordinary bar magnet

D. one ordinary iron rod

Answer:

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24. An iron rod is considered as a magnet if the north pole of any other magnet

A. repels its both the ends

B. attracts its both the ends

C. neither attracts nor repels any of its ends

D. attracts its one end and repels its other end

Answer:

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25. Is the magnetic field of Earth stronger near the middle of Earth (in Mexico) or at the

bottom of Earth (in Antarctica)? Explain your answer

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26. Why are some iron objects magnetic and others. not magnetic?

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27. Where is the magnetism maximum in case of horse-shoe magnets

A. In both the poles

B. In south pole

C. In north pole

D. In between the two poles

Answer: D

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28. Which of the following devices is used to find the direction by soldiers?

A. Magnetic pencil

B. Magnetic compass

C. Bar magnet

D. Electromagnet

Answer: B

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29. How are temporary magnets different from permanent magnets?

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30. In which part of a bar magnet, the magnetisation is zero?

A. At the centre

B. At the poles

C. Both the ends

D. None of these

Answer:

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31. Consider the following statements As one moves from one place to another, the magnetic field of the earth will vary

(1) in magnitude

(2) in direction

(3) linearly with height

(4) linearly with the temperature of the place.

Of these statements

A. 1 and 2 are correct

B. 3 alone is correct

C. 1, 2,3 and 4 are correct

D. 3 and 4 are correct

Answer:

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32. Consider the following statements :

1. The magnetic pole in the northern hemisphere is the north magnetic pole.

2. At all points on a magnet, an iron bar gets

attracted. Which one of the following statements given above is/are correct ?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer:

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33. If a magnetic needle is freely suspended at the geographic north pole

A. The needle will remain vertical with its N-pole downward

B. The needle will remain almost vertical with its N-pole downward

C. The needle will remain vertical with its S-pole downward

D. The needle will remain almost vertical with its S-pole downward

Answer:

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34. What is the number netural points for a bar magnet with its north pole pointing geographical north ?

A. Zero

B. One

C. Two

D. Infinite

Answer:

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35. A bar magnet with poles N and S marked is freely suspended.Then the end marked N would point towards

A. the South magnetic pole of the earth

B. the South geographic pole of the earth

C. the Nordh magnetic pole of the earth

D. the North geographic pole of the earth

Answer:

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36. Choose the wrong statement

A. Single magnetic pole can exist

B. Magnetic poles are always of equal strength

C. Like poles repel each other

D. None of these

Answer:

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37. Magnetism in materials is due to

A. electrons at rest

B. motion of electrons

C. protons at rest

D. all neutrons at rest

Answer:

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38. Prepare a concept map by using the following words

Materials, Magnetic, Non-magnetic, Magnets-Permanent, Temporary, Electro-magnets, Properties, Uses, Loss o magnetism.

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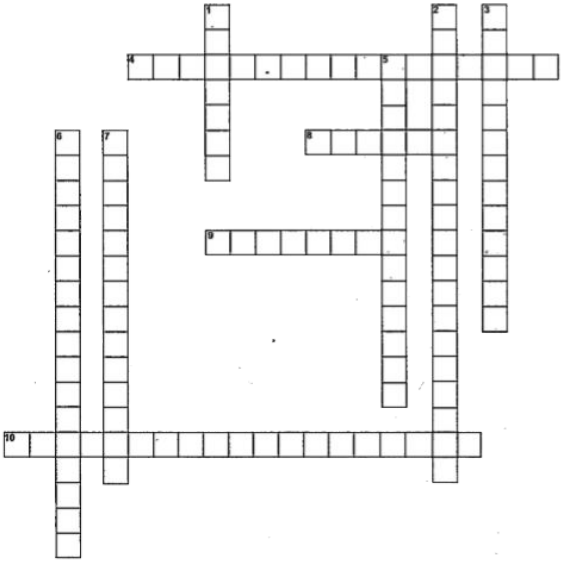
39. Solve the following cerossword with the help of the given clues.



ACROSS

4. Materials that retain their magnetism permanently.
8. A piece of metal or other solid that has the property of attracting iron or steel.
9. Having the properties of a magnet.
10. Region of magnets near South pole where magnetism is the strongest.

DOWN

1. A device with a needle used for determining direction.
2. Region of magnet near North pole where magnetism is the strongest.
3. A soft iron bar that behaves like a magnet when current flows through the coil surrounding the iron bar.
5. The area around a magnet in which objects are affected by the force of the magnet.
6. Materials that retain their magnetism only for a short period of time.
7. The two opposite areas of a magnets where the magnetism is strongest.

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Self Assessment Sheet 6

1. Choose the correct word and fill in the blanks.

Glass is a_____ (magnetic/non-magnetic) material.

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2. Choose the correct word and fill in the blanks.

The magnetism is _____ (least/strongest) in the middle of a magnet.

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3. Choose the correct word and fill in the blanks.

Like poles of magnets _____ (repel/attract)

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4. Choose the correct word and fill in the blanks.

A freely suspended bar magnet comes to rest in the___(East-West, North-South) direction.

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5. Choose the correct word and fill in the blanks.

When materials like iron are magnetised a _____(temporarypermanent) magnet is formed.

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6. State two ways that can cause a magnet to lose its properties

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7. State whether the following statements are true or false.

A copper coin is a magnetic material.

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8. State whether the following statements are true or false.

A magnet can attract an iron nail- from a distance.

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9. State whether the following statements are true or false.

The-force of pull/attraction of a magnet is maximum in the middle

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10. State whether the following statements are true or false.

The earth magnetic north pole is near the geographic south pole.

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11. State whether the following statements are true or false.

Iron, nickel and cobalt are the. only three magnetic metals.

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12. State whether the following statements are true or false.

Heating increases the magnetic power of aa magnet.

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13. State whether the following statements are true or false.

Induced magnetism is temporary.

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14. Answer the following questions.

What is piece of iron inside a wire coil.called.

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15. Choose the letter of the best answer

What happens to a circuit when the switch is off?

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16. Answer the following questions.

How can you increase the strength of an electromagnet?

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17. Answer the following questions.

You can make an electromagnet by wrapping coil around the nail and magnetise it by flowing a current through the coil. Can you use an aluminium nail instead of an iron nail? Why?

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18. A small magnet is suspended by a silk thread from a rigid support such that the magnet can freely swing. How will it rest ? Drawa diagram to show it

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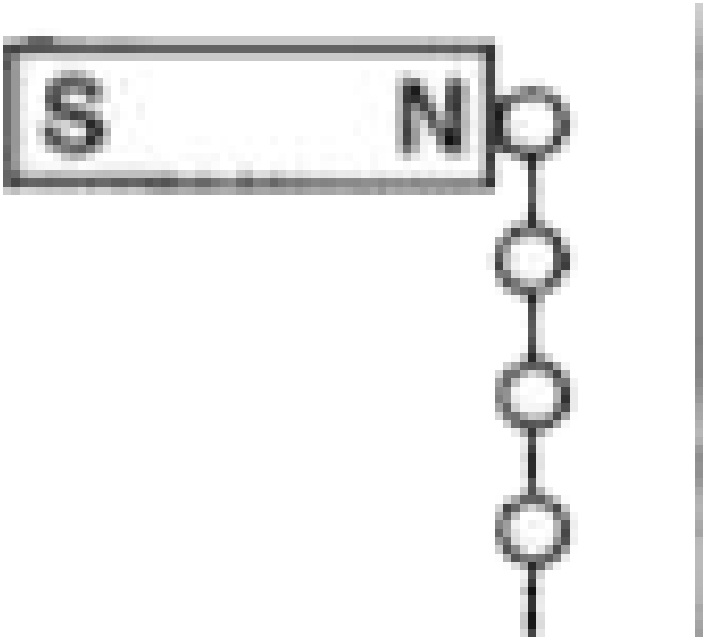
19. Four all pins are hanged from the north pole of a bar magnet. Mark the magnetic poles induced in these pins. Ca the pins hang even if

the bar magnet is removed?



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20. Two long needies are attached to the poles of a horse shoe magnet. Show on a diagram

the position occupied by the needles and name the phenomenon which comes into play

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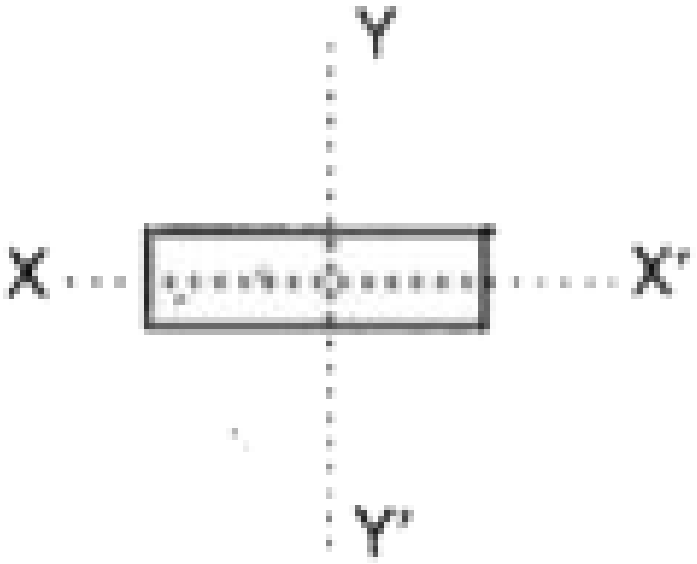
21. Show the poles in the broken parts of the magnets when it is divided into two halves



along the axis XX.

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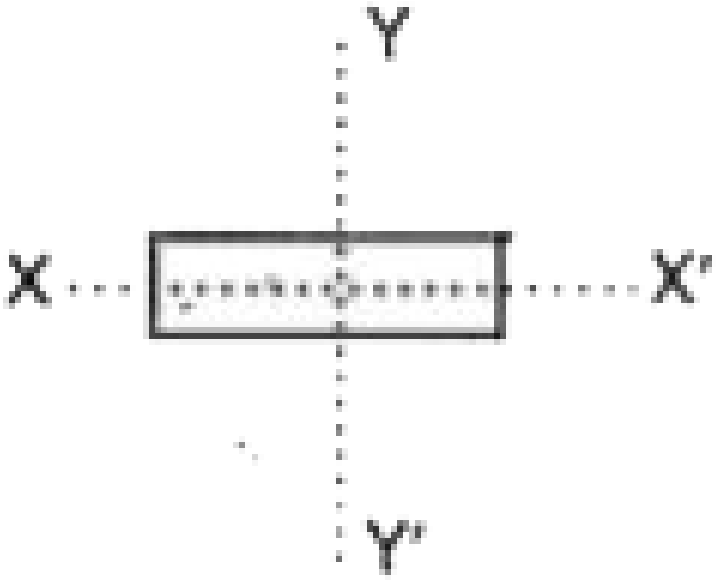
22. Show the poles in the broken parts of the magnets when it is divided into two halves



along the axis YY'.

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23. Metal bars are brought near each pole of a compass needle in turn. Complete the

following table:

	Nature of bar	Action on compass needle	
		North pole	South pole
(i)	Non-magnetic like glass	No action	No action
(ii)	----------	Attracted	Attracted
(iii)	North pole of a bar magnet	----------	----------
(iv)	----------	Attracted	Repelled

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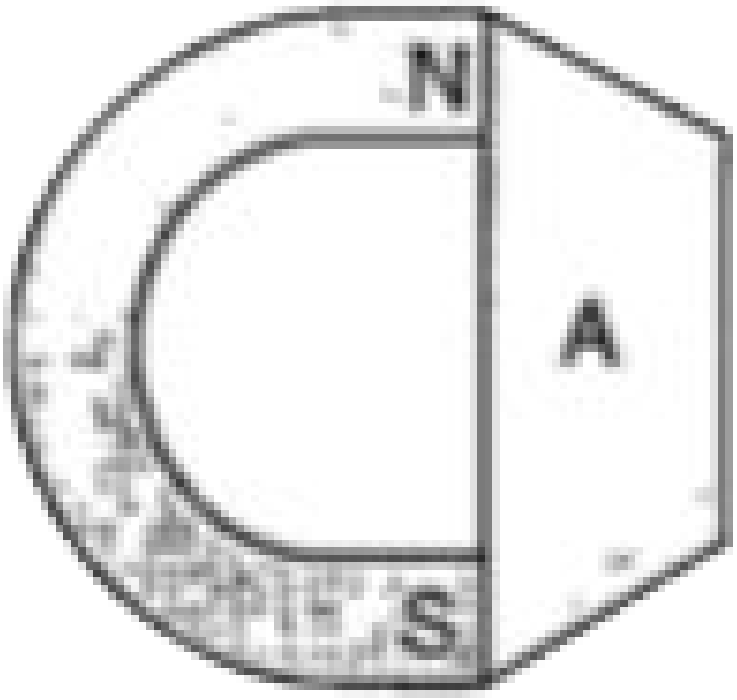
24. A horse-shoe magnet when not in use, is kept with a metal piece A, that is held to the north and south poles.



What is the metal piece A called ?

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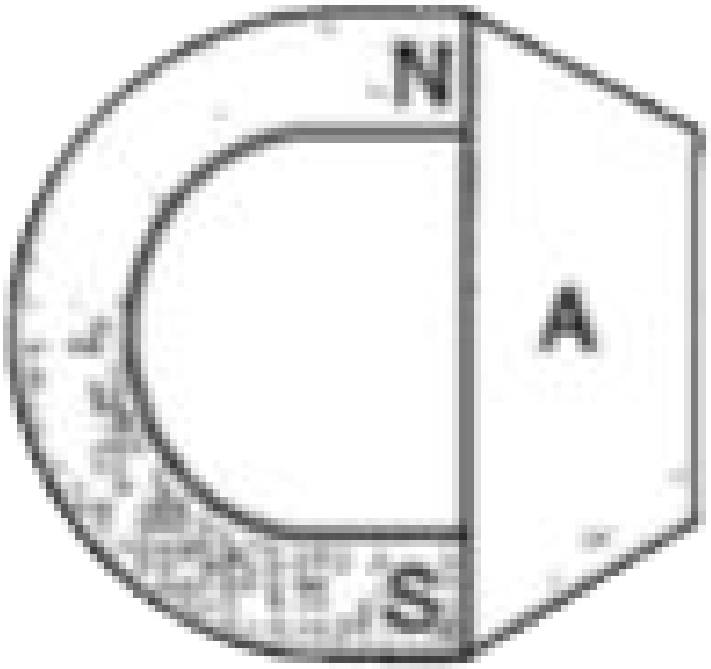
25. A horse-shoe magnet when not in use, is kept with a metal piece A, that is held to the north and south poles.



What is A made of ?

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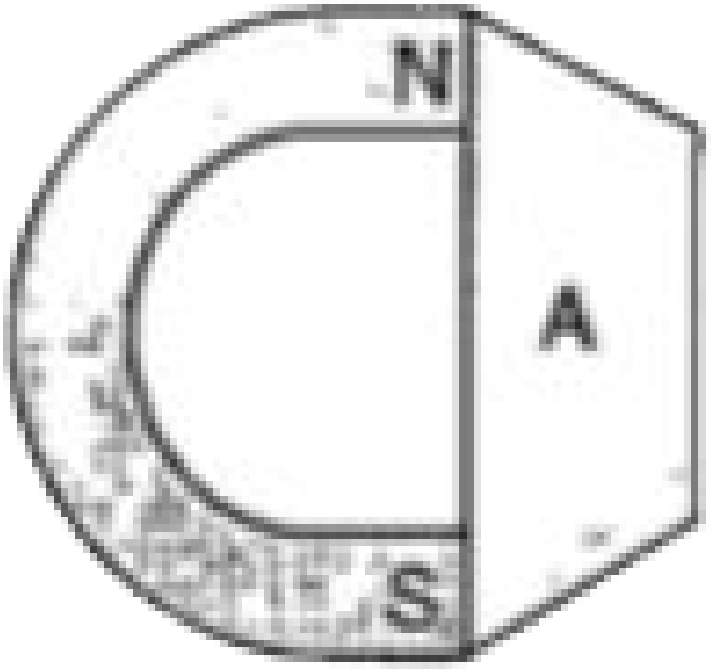
26. A horse-shoe magnet when not in use, is kept with a metal piece A, that is held to the north and south poles.



What is A made of ?

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27. The middle region of a bar magnet is

A. a north pole

B. a south pole

C. unmagnetised

D. magnetised

Answer:

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28. A magnet pulls some substances towards it. This means

A. The magnet exerts some force

B. The magnet can do some work

C. Both (a) and (b)

D. None of the above

Answer:

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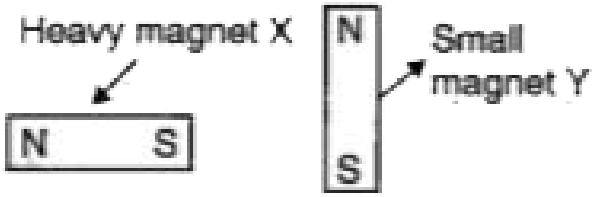
29. A small magnet Y is placed near a heavy magnetX as ahown /n the figure. How will the magnets move ?



A. magnet Y will move away

B. magnetY will turn clockwise

C. magnetY will turn anti-clockwise

D. Both the magncts will turn clockwise

Answer:

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30. When one end of an iron bar is placed near a compass:

A. it is always the norh pole of the compass that points towards it

B. it is always the south pole of the compass that points towards it

C. any one of the poles of the compass would point towards it

D. the compasss will remain unaffected by the iron bar

Answer:

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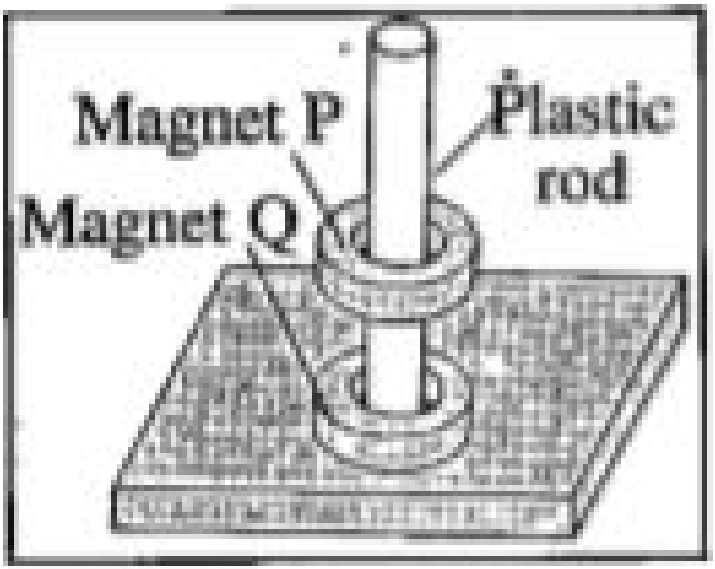
31. Two ring magnets P and Q each with a hole in the centre are dropped one over the, other on a plastic rod taking care that like poles of

the magnets face each other. One magnet say Q. comes to the bottom of the rod and it would appear that the other magnet say P floats above the first leaving gap in between. It is so because



A. magnet P is lighter than magnet Q

B. magnet Q is more powerful than magnet P.

C. Similar poles of the two magnets repel each other when placed face to face. The repulsion causes the rise of one of the magnets

D. both (b) and (c)

Answer:

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