Fun with Magnets

Test

Time - 30 Minutes **Maximum Marks - 20**

Important Instructions

- This test contains 20 questions.
- Each questions has FOUR options (1), (2), (3) and (4). ONLY ONE of these four options are correct.
- For each question, marks will be awarded in one of the following categories.

Full Marks : +1 : If only correct answer is given.
Zero Marks : 0 : If no answer is given.

Negative Marks : There is no negative marking

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1. Magnetic Force becomes stronger when magnets are

(1) both metal (2) farther apart

(3) different sizes (4) closer together

2. Earth can be through of as giant magnet because it

(1) orbits around the Sun. (2) has a magnetic field

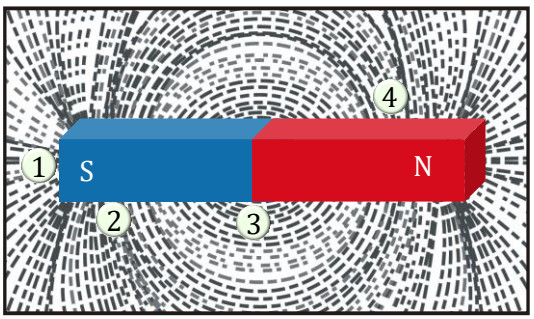
(3) rotates on its axis (4) has a moon

3. What happens when a magnet is brough near an iron nail?

(1) The magnet repels the nail. (2) The nail repels the magnet.

(3) The nail becomes magnetic. (4) Nothing will happen.

4. Iron filings were sprinkled around a magnet and acquired the pattern shown below.



Where is the magnetic force strongest?

(1) 1 (2) 2 (3) 3 (4) 4

5. A loudspeaker uses electromagnets to

(1) turn electrical energy into sound.

(2) turn electrical energy into ligth.

(3) turn motion into electrical energy.

(4) turn sound into electrical energy.

6. Which is the magnetic force exerted by a magnet strongest?

(1) they have two poles.

(2) they are surrounded by magnetic fields.

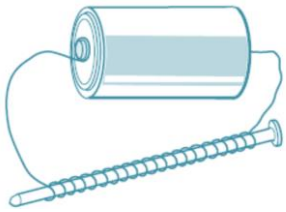
(3) they have magnetic force.

(4) they can be turned on and off.

7. Where is the magnetic force exerted by a magnet strongest?

(1) Both poles (2) North pole (3) South pole (4) Centre

8. Look at the simple electromagnet below.



(1) Remove the iron nail.

(2) Use a wooden nail instead of an iron nail.

(3) Wrap more coils of wire around the nail.

(4) Wrap fewer coils of wire around the nail.

9. Which of the following would not change the strength of an electromagnet?

(1) Increasing the amount of current.

(2) Changing the current's direction.

(3) Inserting an iron core inside the coil.

(4) Increasing the number of loops.

10. A compass points north because

(1) Earth's gravity is strongest at the north pole.

(2) Earth's magnetic field has poles that are exactly at geographic poles.

(3) Earth's magnetic field has poles that are near the geographic poles.

(4) Earth's magnetic field has poles that are in east-west direction.

11. Iron attracts

(1) only the north pole of a magnet.

(2) only the south pole of a magnet.

(3) both north and south poles of a magnet.

(4) the north pole but repels the south pole.

12. How is an electromagnet different from a permanent magnet?

(1) It has north and south poles.

(2) It attracts magnetic substances.

(3) Its magnetic field can be turned off.

(4) Its poles cannot be reversed.

13. What is the shape of Earth's magnetic field similar to?

(1) That of a horseshoe magnet (2) That of a bar magnet

(3) That of a ball ended magnet (4) None of these

14. When any magnet is cut into four equal parts and then they are again joined by quick fix then new magnet will behave as

(1) four bar magnets (2) four ordinary rods

(3) one ordinary bar magnet (4) one ordinary iron rod

15. An iron bar is considered as a magnet if the south pole of any other magnet

(1) repels its both the ends

(2) attracts its both the ends

(3) neither attracts nor repels any of its ends

(4) attracts its one end and repels its other end

16. Freely suspended magnet stays in direction of

(1) East-west (2) Northeast-southwest

(3) north-south (4) Northwest-southeast

17. In which part of a bar magnet, the magnetisation is minimum?

(1) At the centre (2) At both poles

(3) At south pole (4) At north pole

18. Magnetism in materials in due to

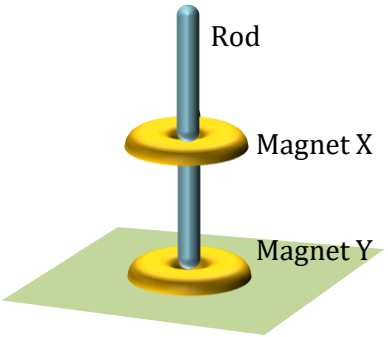
(1) electrons at rest

(2) motion of electrons around the nucleus

(3) protons at rest

(4) neutrons at rest

19. Two ring magnets, X and Y are connected through a rod as shown below. Magnet X floats above magnet Y because figure



(1) magnet X is lighter than magnet Y.

(2) magnet X is lighter than magnet Y.

(3) the like poles of both magnets are facing each other.

(4) The unlike poles of both magnets are facing each other.

20. As bar is confirmed to be a magnet when it

(1) attracts all metal.

(2) attracts another magnet.

(3) Attracts an unmagnetized piece of iron.

(4) Repels a magnet.

Answer key

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Sol.	2	2	3	1	1	4	1	3	2	3	3	3	2	3	1	3	2	2	3	4

Solutions

1. Option (2)

When two magnets brought closer together the force of attraction between the magnets increases.

2. Option (2)

Earth can be through of as great magnet because it has a magnetic field.

3. Option (3)

When a magnet is brought near ariron nail the nail becomes magnetic.

4. Option (1)

At position 1 magnetic filled fond to be strongest as here magnetic field lines are more consisted.

5. Option (1)

A louds Peaker uses electromagnetic to turn electrical energy into sound.

6. Option (4)

They can be turned ON and OFF is not a one statement.

7. Option (1)

At south poles the magnetic force exerted by a magnet stronger.

8. Option (3)

By wrapping more coils of wire around the nail a stronger magnetic field can be produre by an electromagnet.

9. Option (2)

By changing the current is direction strength of an electromagnet would not be changed.

10. Option (3)

A compass routs north because.

11. Option (3)

Iron as magnetic materials attracts both north and south poles of a magnet.

12. Option (3)

In electromagnet magnetic field can be turned off.

13. Option (2)

The shape of Earth's magnetic field similar to that of a bar magnet.

14. Option (3)

When any magnet is cut into four equal parts and then they are again joined by quick fix then new magnet will behave as one ordinary bar magnet.

15. Option (1)

An iron bar is considered as a magnet if the south pole of any other magnet attracts its one end and repels its other end.

16. Option (3)

Freely suspended magnet stays in direction of north-south.

17. Option (2)

Minimum magnetic strength found at the centre of a bar magnet as magnetic field lines are far apart at the centre.

18. Option (2)

Magnetism in materials in due to motion of electrons around the nucleus.

19. Option (3)

Like poles of both magnets facing each other.

20. Option (4)

As bar is confirmed to be a magnet when it repels a magnet.