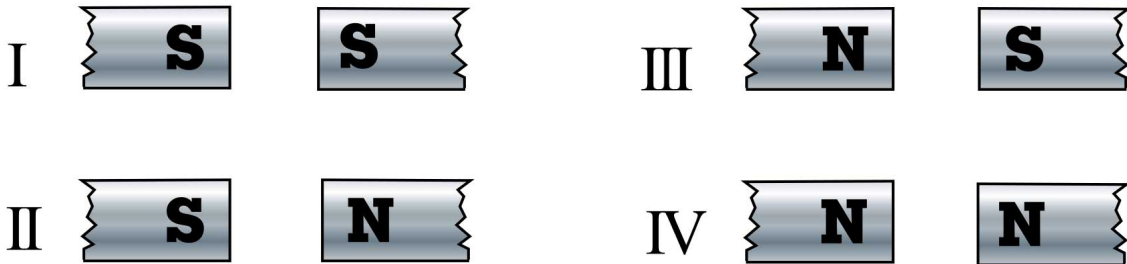


Match the term on the left with the best corresponding description on the right.

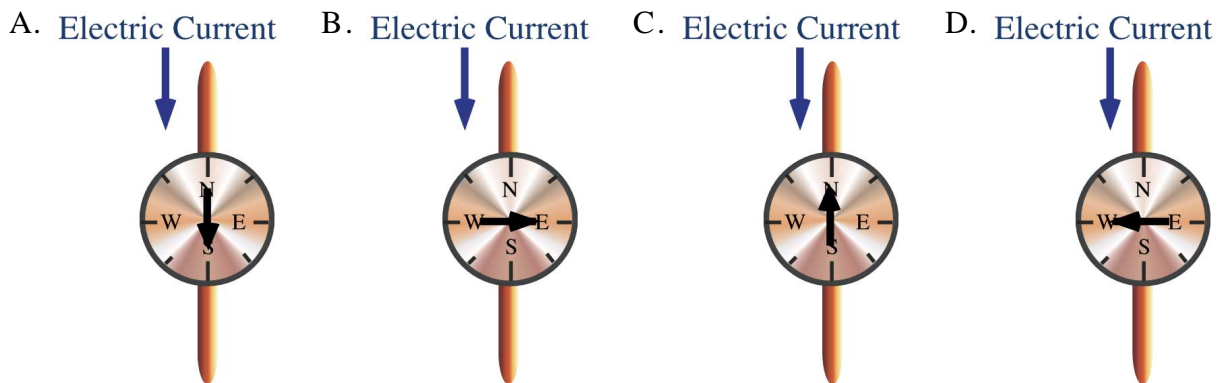
- | | |
|--------------------------|--|
| 1. geographic south pole | A. the majority of the domains are pointing in the same direction... |
| 2. electromagnet | B. A compass needle will point towards this... |
| 3. magnetic south pole | C. near the magnetic north pole of the Earth... |
| 4. armature | D. a spinning electromagnet... |
| 5. magnetized object | E. a magnet that can be switched on and off... |

6. Which of the following combinations of magnets will ATTRACT each other?

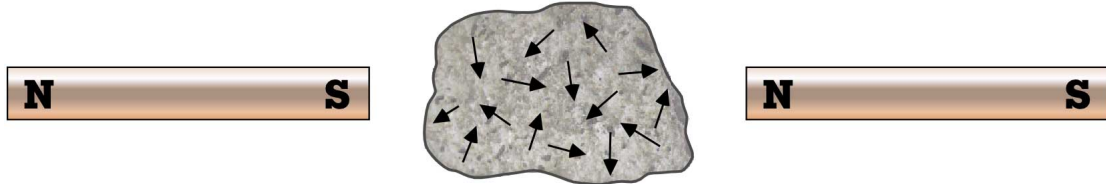


- A. II and IV
- B. I and IV
- C. I and III
- D. I and II
- E. II and III

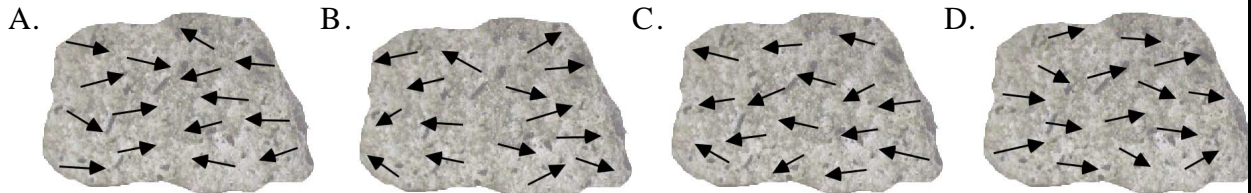
7. Which of the following compass needles are correctly aligned with the magnetic field around the wire shown below.



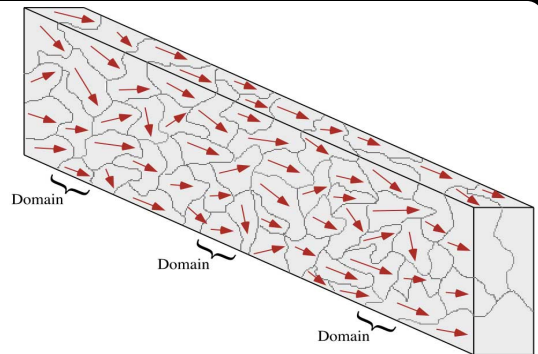
8. An unmagnetized piece of lodestone is left between two magnets as shown in the picture below.



Select the diagram below that best represents the arrangement of the domains in the lodestone after it has been left between the magnets for several days



9. The domains inside a material are shown as arrows in the diagram to the right. This material would be best classified as a piece of

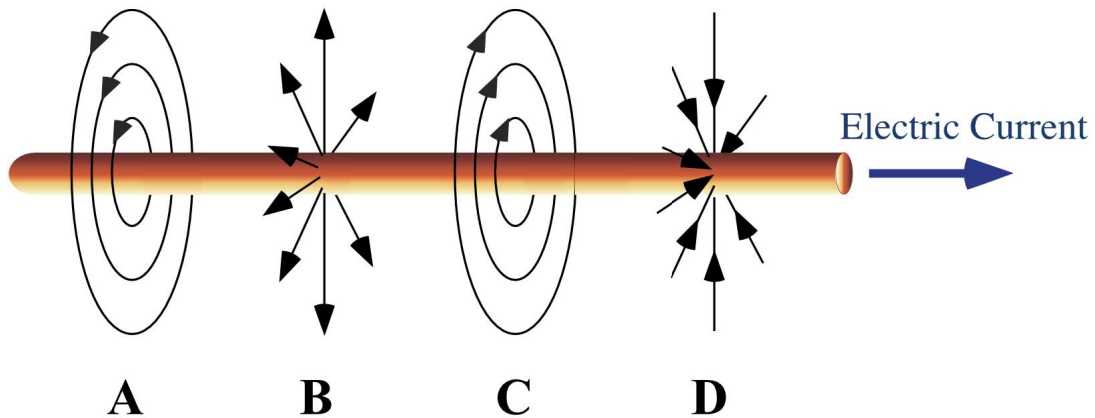


- A. a permanent magnet.
 B. lodestone.
 C. copper wire.
 D. magnetic material that has not be magnetized.

10. Which of the following would REDUCE the speed of an electric motor?

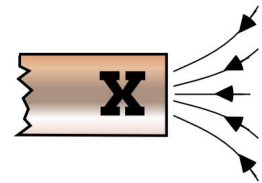
- A. increasing the voltage supply to the motor.
 B. move the outer magnets closer to the armature.
 C. wrapping more coils around the armature.
 D. increasing the electrical resistance of the armature.

11. Which one of the following diagrams correctly shows the direction of magnetic field around a current-carrying wire?



A. B. C. D.

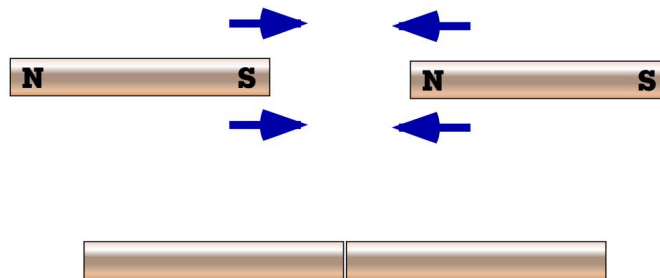
12. The magnetic field lines near the end of a magnet are shown in the diagram.



What pole of the magnet is labeled **X**?

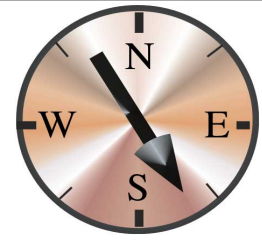
- A. South
 B. North
 C. could be either North or South

13. If two magnets are stuck together (as shown in the picture), which statement below best describes the poles of the new object.



- A. The new object would have four poles: a north pole on the left and a south pole on the right, as well as a north and south pole near its center.
 B. The new object would have only two poles: a north pole on the left and a south pole on the right.
 C. The new object would be magnetically neutral as their magnetic fields would cancel each other out. There would no longer be any detectable north or south poles.

A compass needle is made of a very light magnet that is free to rotate. The arrow of the compass is the north pole of the magnet.

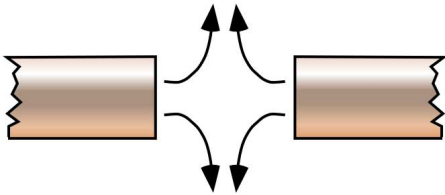


Use this information to match the statements shown below.

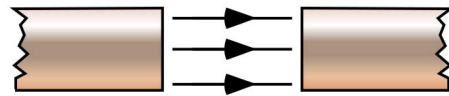
- 14. In British Columbia the compass needle would point
 - A. slightly west of north
 - B. southwards
- 15. In Newfoundland the compass needle would point
 - C. slightly east of north
- 16. At the geographic north pole the compass needle will point

17. Which of the following diagrams correctly maps the magnetic field between two NORTH poles?

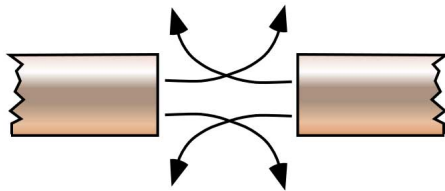
A.



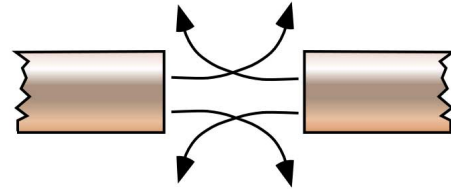
B.



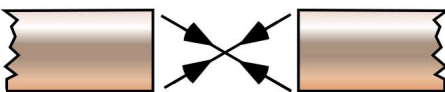
C.



D.

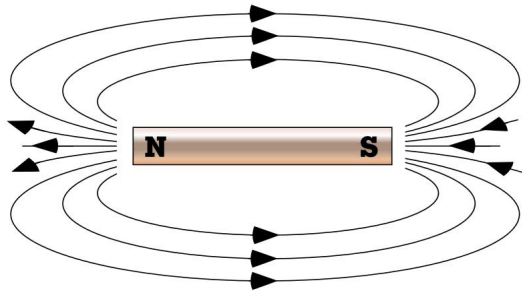


E.

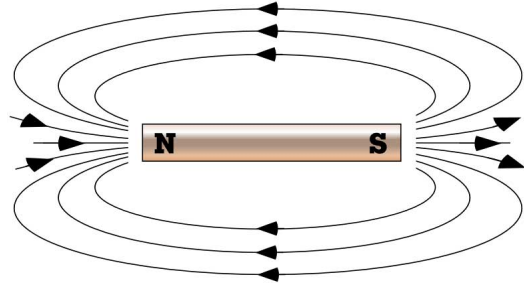


18. Which of the following diagrams correctly maps the magnetic field around a bar magnet?

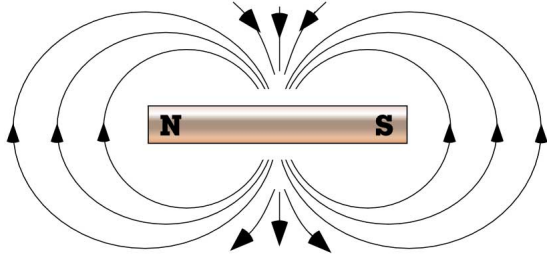
A.



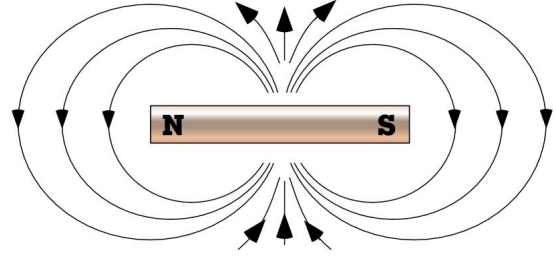
B.



C.



D.

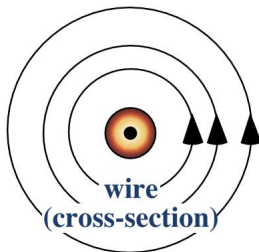


19. A current carrying wire is held so that it sticks straight up out of the page towards you. The direction of the current flowing in the wire is represented by the standard symbols drawn in the cross section of each wire, as shown below:

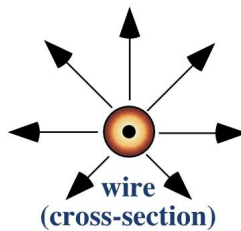


Which of the following diagrams correctly shows the magnetic field around the wire?

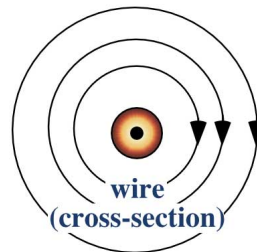
A.



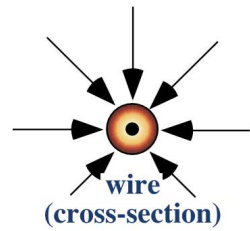
B.



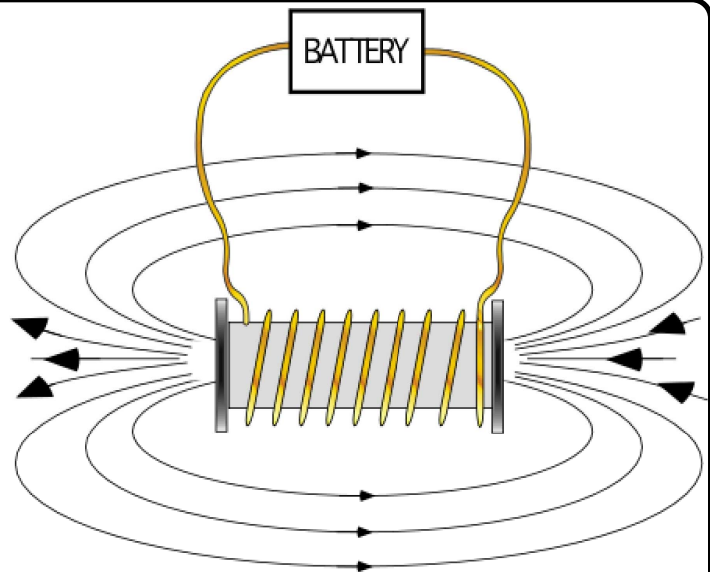
C.



D.

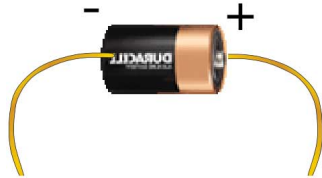


20. A battery is placed in the circuit to produce the magnetic field around the solenoid shown to the right.

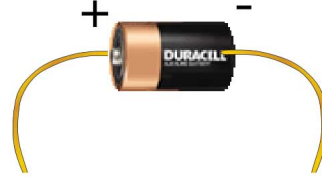


Which diagram below shows the correct orientation of the battery?

A.



B.



21. Which of the following list of materials would be required to demonstrate how to generate an electric current?

- A. A piece of wire, battery, and a light bulb
- B. A piece of wire, an iron nail, and an ammeter
- C. A magnet, a battery, and a light bulb
- D. A magnet, a piece of wire, and an ammeter.
- E. A strip of plastic, and iron core, a magnet and a light bulb.

22. A wire is wrapped around an iron nail as shown in the diagram. When electric current passes through the wire, a magnetic field is created around the nail.

Electric Current



Which diagram best represents the arrangement of compasses around the nail?

A.



B.



C.



D.

