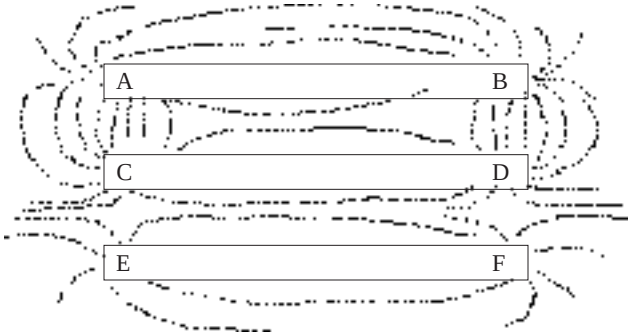
PracTest Magnetism ID#

1. The first to show a connection between electricity and magnetism was high school physics teacher
   A. Nikola Tesla B. Michael Faraday C. Henry Cavendish
   D. Benjamin Franklin E. Hans Christian Ørsted F. Dean Baird

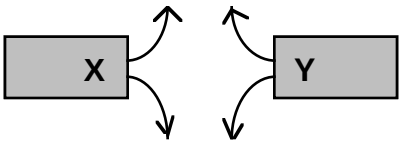
2. Magnetism in rare-earth permanent magnets is due to
   A. electron spin motion B. proton spin motion
   C. electron orbital motion D. proton orbital motion
   E. polarized magnetic charge F. separation of magnetic monopoles

3. Dropping a permanent magnet
   A. strengthens its magnetic field B. weakens its magnetic field
   C. has no effect on its magnetic field D. would feel good if it hit your toe

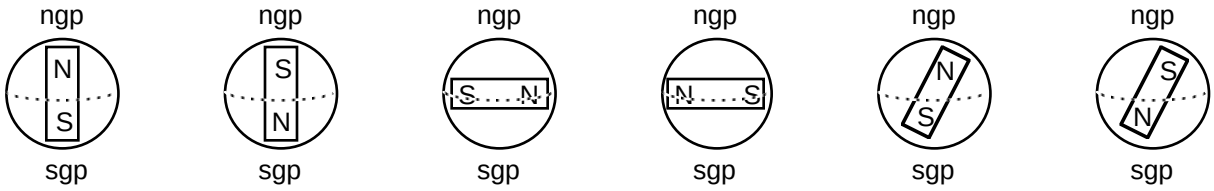
4. **Do NOT write on this sheet!** Examine the diagram to the right. It depicts three permanent magnets lying side by side. Iron filings have been sprinkled near the magnets. Pole B is the same as poles
   A. C and E
   B. D and F
   C. C and F
   D. D and E
   E. A, C, and F
   F. C, D and E



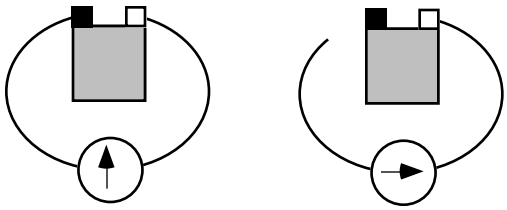
5. Two magnets are shown to the right. The magnetic field between them is indicated by the arrows. Identify the pole labeled "Y"
   A. North
   B. South
   C. could be either north or south
   D. is neither north nor south



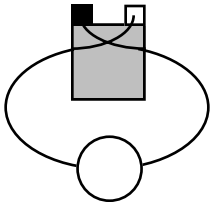
6. Which diagram below most accurately depicts the model for Earth's magnetism? [ngp = north geographic pole, sgp = south geographic pole]



Consider the arrangement shown. When a wire is connected to the terminals of a battery and passes beneath a compass, the needle of the compass points as shown in the first diagram. When the wire is disconnected, the needle of the compass points as shown in the second diagram.



7. If the arrangement were changed as shown to the right (so that the wire's connections to the battery are reversed), which way would the compass needle point? (Notice the compass is above the wire.)



A.  B.  C.  D. 

8. A proton accelerated through space is surrounded by its own
   I. gravitational field II. electric field III. magnetic field
   A. I only B. II only C. I and II only
   D. I and III only E. II and III only F. I, II, and III

9. If electric current flowed through a vertical wire from the bottom to the top of this page, the magnetic field to the right of the wire would be
   A. up B. down C. right D. left E. in F. out

10. A wire carries current to the right through a magnetic field directed upward. The magnetic force on the wire acts in which direction?
    A. right B. left C. up D. down E. in F. out G. there is no force on the wire

11. A Genecon generator will be hardest to crank when it is connected to a circuit having
    A. no electrical resistance (short) B. low electrical resistance
    C. high electrical resistance D. infinite electrical resistance (open)
    E. actually, it's equally hard to crank in each case