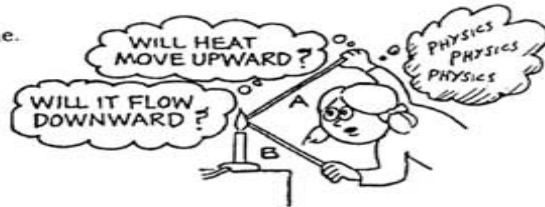



**CONCEPTUAL Physics** PRACTICE PAGE

**Chapter 16 Heat Transfer**  
**Transmission of Heat**

1. The tips of both brass rods are held in the gas flame. Mark the following true (T) or false (F).

- a. Heat is conducted only along Rod A. \_\_\_\_\_
- b. Heat is conducted only along Rod B. \_\_\_\_\_
- c. Heat is conducted equally along both Rod A and Rod B. \_\_\_\_\_
- d. The idea that "heat rises" applies to heat transfer by *convection*, not by *conduction*.  
\_\_\_\_\_



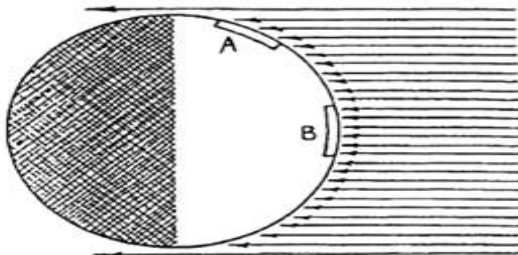
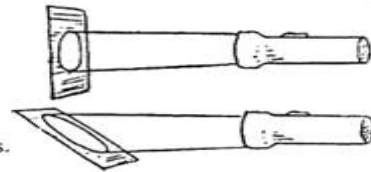
2.  Why does a bird fluff its feathers to keep warm on a cold day? \_\_\_\_\_

3. Why does a down-filled sleeping bag keep you warm on a cold night? Why is it useless if the down is wet?  
\_\_\_\_\_

4. What does *convection* have to do with the holes in the shade of the desk lamp?  
\_\_\_\_\_



5. The warmth of equatorial regions and coldness of polar regions on the Earth can be understood by considering light from a flashlight striking a surface. If it strikes perpendicularly, light energy is more concentrated as it covers a smaller area; if it strikes at an angle, the energy spreads over a larger area. So the energy per unit area is less.



The arrows represent rays of light from the distant sun incident upon the Earth. Two areas of equal size are shown, Area A near the north pole and Area B near the equator. Count the rays that reach each area, and explain why B is warmer than A.  
\_\_\_\_\_  
\_\_\_\_\_

Draw it!