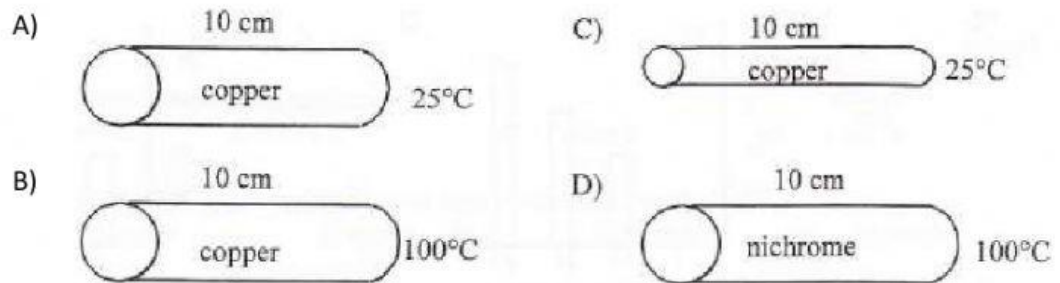


### Resistance and Conductivity

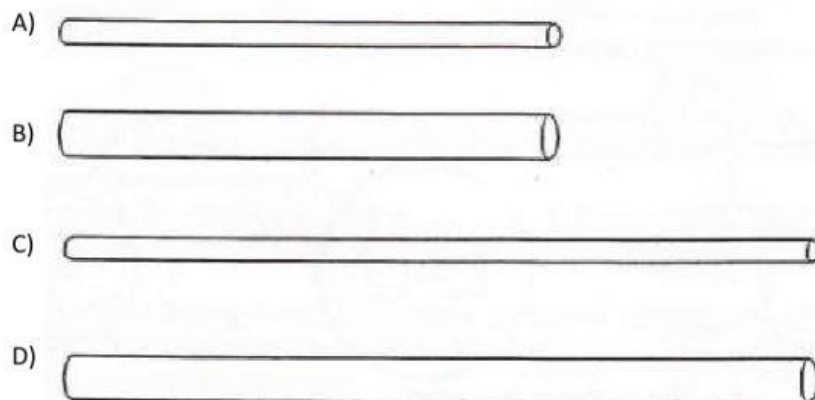
1. Which of the following diagrams shows the wire with the best electrical conductivity?



2. A student wants to measure the current intensity and the potential difference of an electrical appliance. Which of the following statements about the resistance of a conducting wire are true? [Select more than 1 answer]

- a) The resistance of a conducting wire is directly proportional to its length.
- b) The resistance of a conducting wire is directly proportional to its cross-sectional area.
- c) The resistance of a conducting wire depends on the nature of the wire.
- d) The resistance of a conducting wire does not depend on the temperature of the wire.

3. The four conductors shown below are made out of copper. Which one has the greatest conductance?



4. Note the following substances:

- a. Rubber
- b. Steel
- c. Aluminum
- d. Copper
- e. Rubber

Select the substance(s) which are insulators.

5. Which of the following substances best conducts electricity?

- A) Plastic      B) Water      C) Copper      D) Nichrome

6. Each of the following statements contains two options. Select the option that allows the optimal flow of electric current through a circuit.

- a) A short wire or a very long wire
- b) A steel wire or a copper wire
- c) A large-diameter wire or a small-diameter wire
- d) A cold temperature or a hot temperature

7. If the resistance of a resistor is  $100\ \Omega$  what is its conductance?

8. If the conductance of a material is  $50\ \text{S}$ , what is its resistance?