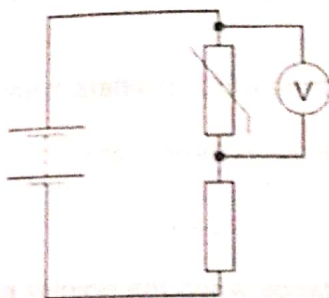
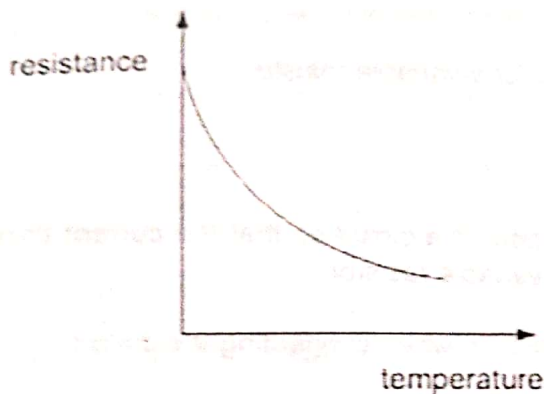


ELECTRONICS

1. The circuit diagram shows a thermistor in a potential divider. A voltmeter is connected across the thermistor.



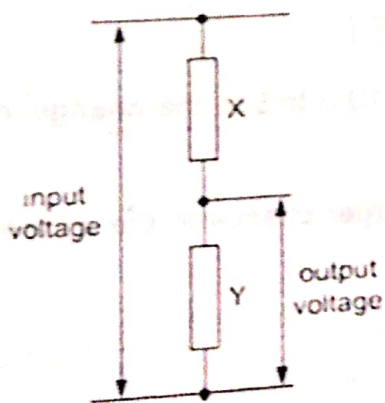
The graph shows how the resistance of the thermistor changes with temperature.



As the thermistor becomes warmer, what happens to its resistance and what happens to the reading on the voltmeter?

	resistance	voltmeter reading
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

2. An engineer uses the potential divider shown in the diagram. He needs the output voltage to be one tenth ($1/10$) of the input voltage.

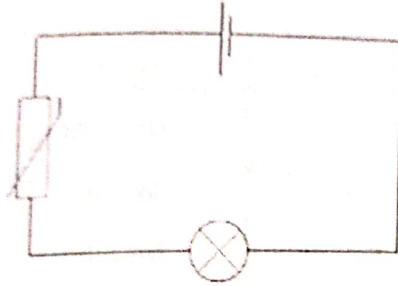


Physics

Which pair of values could he use for the two resistors X and Y?

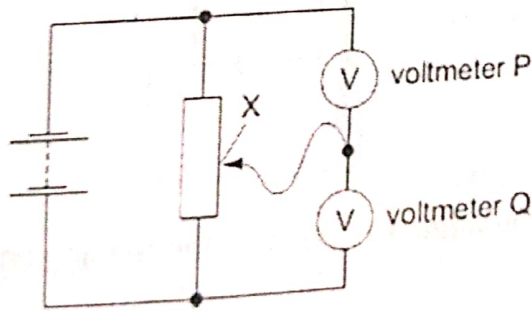
	X/k Ω	Y/k Ω
A	1.0	9.0
B	1.0	10.0
C	9.0	1.0
D	10.0	1.0

3. When the thermistor in the circuit below is heated, the current in the lamp increases. Why does this happen?



- A. The resistance of the lamp decreases.
- B. The resistance of the lamp increases.
- C.** The resistance of the thermistor decreases.
- D. The resistance of the thermistor increases.

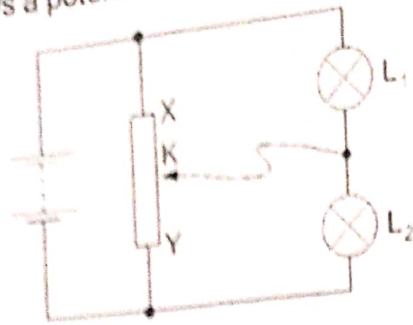
4. The diagram shows two voltmeters, P and Q, connected to a potential divider.



The sliding connection at point X is moved towards the top of the diagram. What happens to the reading on P and to the reading on Q?

	reading on P	reading on Q
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

5. The diagram shows a potential divider circuit with two identical lamps L₁ and L₂.

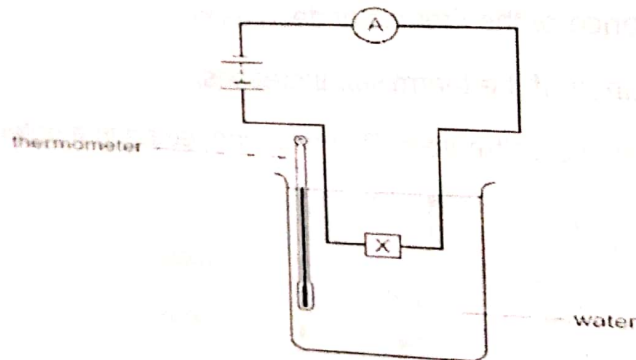


The contact K is halfway between X and Y and the lamps are equally bright.

What will happen to the brightness of the lamps when contact K is moved a short distance towards X?

	lamp L ₁	lamp L ₂
A	brighter	brighter
B	brighter	dimmer
C	dimmer	brighter
D	dimmer	dimmer

6. An electrical component X is placed in water, as shown.



When the temperature of the water is increased, the reading on the ammeter increases.
What is component X?

- A. a capacitor
- B. a light-dependent resistor
- C. a reed relay
- D. a thermistor**