

Answer on Question #41573 – Physics – Other

Question.

When the junctions of two dissimilar metals are maintained at different temperatures an electromotive force is set up in the circuit of which these junctions are part. A pair of junctions of this kind and the effect are known respectively as:

- a. thermistor and Peltier effect
- b. resistance thermometer and Joule effect
- c. pyrometer and Joule effect
- d. thermocouple and Seebeck effect

Solution.

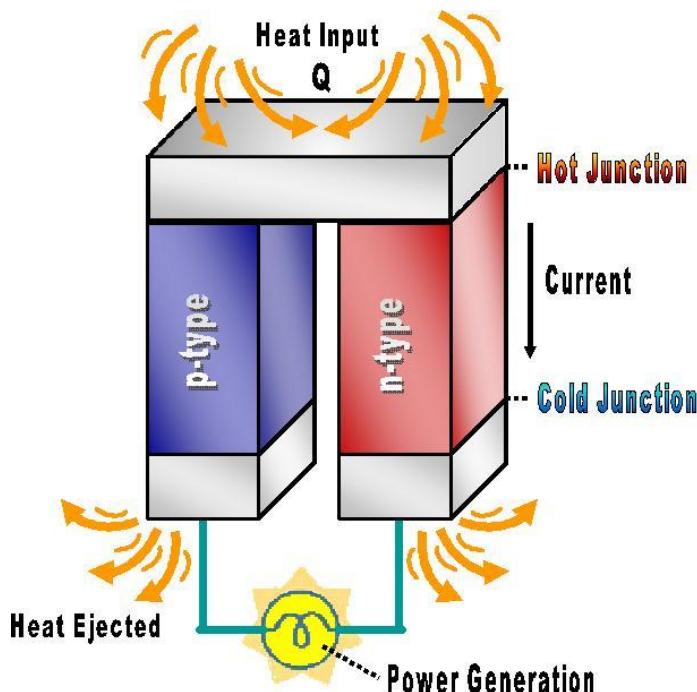


Fig.1. The Seebeck effect.

A thermocouple is a temperature-measuring device consisting of two dissimilar conductors that contact each other at one or more spots. It produces a voltage when the temperature of one of the spots differs from the reference temperature at other parts of the circuit.

The Seebeck effect is a phenomenon in which a temperature difference between two dissimilar electrical conductors or semiconductors produces a voltage difference between the two substances.

So, a pair of junctions is called thermocouple. It corresponds to the Seebeck effect.

Answer. d. thermocouple and Seebeck effect