

# Thermoelectricity, Atoms to Systems

## L1.5 Quiz

### Answers

**1.5a.** A device has a single sharp level located at an energy  $kT$  above  $\mu_0$ . Consider the following statements:

- A. The Seebeck coefficient,  $S$  is a little less than  $100 \mu\text{V/K}$ .
- B. The Peltier coefficient equals  $T^*S$
- C. The heat conductance is zero.

Which of the following is correct?

(a) A, B and C are all correct.

(b) only A and B are correct.

(c) only B and C are correct.

(d) only A and C are correct.

(e) only B is correct.

**1.5b.** A device has TWO sharp levels, one located at an energy  $kT$  above  $\mu_0$  and the other located at an energy  $kT$  below  $\mu_0$ . Consider the following statements:

- A. The Seebeck coefficient,  $S$  is a little less than  $100 \mu\text{V/K}$ .
- B. The Peltier coefficient equals  $T^*S$
- C. The heat conductance is zero.

Which of the following is correct?

(a) A, B and C are all correct.

(b) only A and B are correct.

(c) only B and C are correct.

(d) only A and C are correct.

(e) only B is correct.