

Exercise 5.2
Conductors, Insulators and Semiconductors

1. Use band theory to explain why metals conduct electricity.
You may find it helpful to include a diagram in your answer.

2. Use band theory to explain why insulators do not conduct electricity.
You may find it helpful to include a diagram in your answer.

3.
 - (a) Is doping necessary to make an intrinsic semiconductor or an extrinsic semiconductor?
 - (b) What is the basis for the terms 'n-type' and 'p-type' when discussing semiconductors?
 - (c) How does doping improve the ability of each type of semiconductor to conduct electricity?