Chapter 7

2. Qualitative analysis may require higher resolution, hence smaller slit widths. Quantitative analysis may require higher sensitivity, hence larger slit widths.

8. The effective bandwidth is the range of wavelengths transmitted by the filter when measured at one half the peak height.

20. A silicon diode detector consists of a reversed-biased $pn$ junction on silicon. A depletion region is created at this junction by the reverse bias and essentially no current flows across the junction. If radiation strikes this depletion region, e-/hole pairs are created that are collected by the applied bias. A current flows that is proportional to the radiant power of the incident radiation.