

**Concept Question 6-1:** What are the major advantages of active filters over their passive counterparts?

Active filters are built around op-amps or transistors. Passive filters use only inductors, capacitors, and resistors. Active filters have the following advantages over passive filters:

- (1) gains can be greater than one;
- (2) active filters can be cascaded without loading and impedance matching issues;
- (3) active filters can be constructed without using inductors, which are bulky.