Answers to Self-Reviews

6–1 a. 1 kΩ
b. 0.5 kΩ
c. 1.5 kΩ

6–2 a. 12 V
b. 6 A
c. 18 V

6–3 a. 40 V
b. 8 A
c. 4 V

6–4 a. R_1
b. R_4
c. R_6

6–5 a. R_3
b. R_1
c. 4 A
d. 60 V

6–6 a. A and B are input; C and D are output.
b. Zero
c. 71.35 Ω
d. 99.99 Ω
e. 500 Ω

6–7 a. 10 A
b. 1.1 A
c. 12 V
d. 0 V

Laboratory Application Assignment

In this lab application assignment you will examine the characteristics of a simple series-parallel circuit. You will also troubleshoot a series-parallel circuit containing both shorts and opens.

Equipment: Obtain the following items from your instructor.

- Variable dc power supply
- Assortment of carbon-film resistors
- DMM

Series-Parallel Circuit Characteristics

Examine the series-parallel circuit in Fig. 6–50. Calculate and record the following values:

R_T = ____, I_T = ____, V_1 = ____, V_2 = ____,

V_3 = ____, V_4 = ____,

V_{AB} = ____ I_2 = ____, I_3 = ____

Construct the series-parallel circuit in Fig. 6–50. Measure and record the following values. (Note that the power supply connections must be removed to measure R_T.)

R_T = ____, I_T = ____, V_1 = ____, V_2 = ____,

V_3 = ____, V_4 = ____,

V_{AB} = ____ I_2 = ____, I_3 = ____

In Fig. 6–50, identify which components are in series and which components are in parallel. _____

Do your measured values of voltage and current support your answers? _____

Does the current entering point B equal the current leaving point A? _____

Figure 6–50