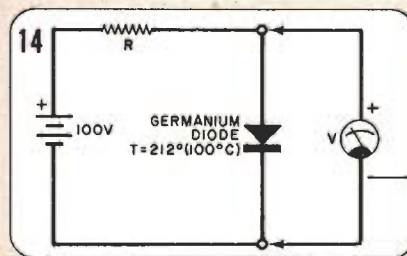
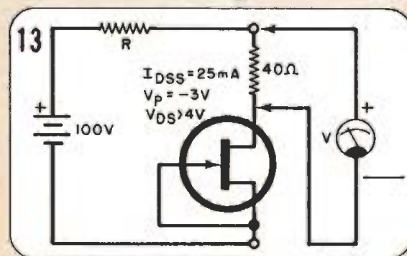
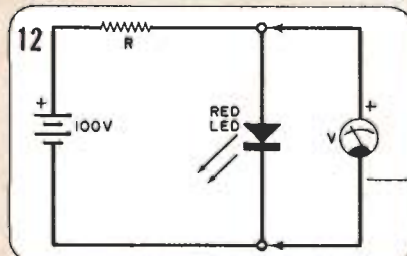
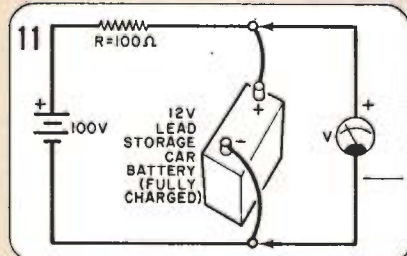
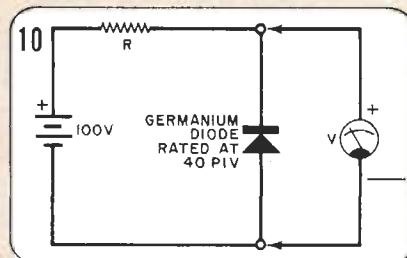
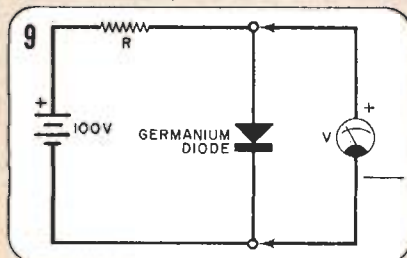
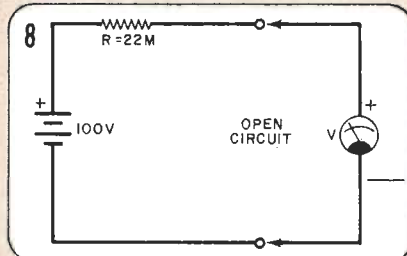
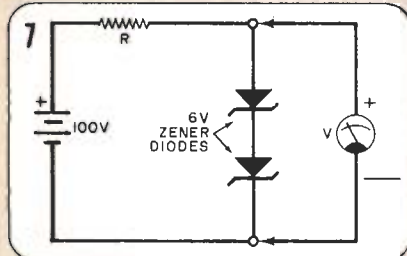
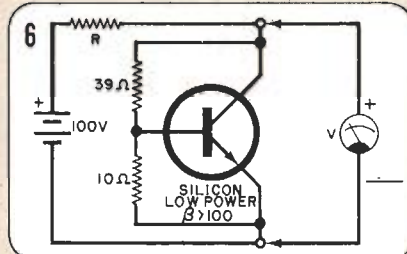
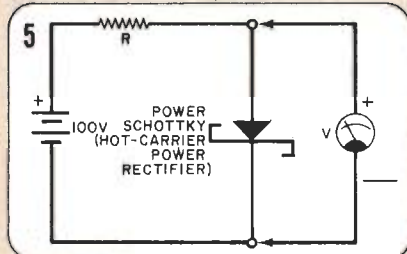
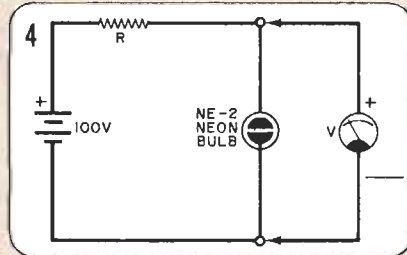
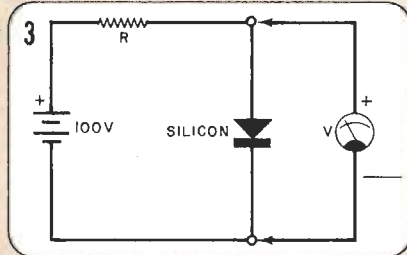
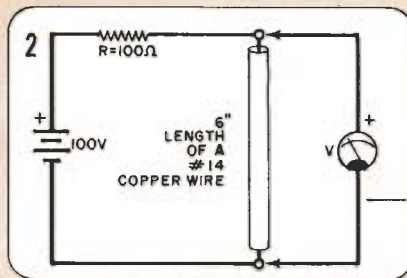
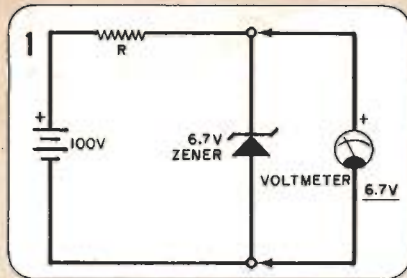


ANSWERS TO ZENER VOLTAGE QUIZ

Circuit 14—0.2 V
 Circuit 13—1.0 V
 Circuit 12—2 V
 Circuit 11—14 V
 Circuit 10—50 V
 Circuit 9—0.35 V
 Circuit 8—97.85 V
 Circuit 7—1.4 V
 Circuit 6—3.3 V
 Circuit 5—0.13 V
 Circuit 4—60 V
 Circuit 3—0.7 V
 Circuit 2—0 V



- All diodes are conducting relatively low forward currents (approximately 1 mA) unless specified otherwise. The LED in Circuit 12 is operated at "normal" current levels to achieve "normal" brightness.

- The specific voltages listed in the Table are approximate.

To take the quiz, examine each of the 14 circuits and estimate the voltage indicated by the voltmeter. Next, refer to the 17 voltages listed in the Table and select the value closest to the voltage you think the voltmeter will indicate. Finally, write this voltage on the line next to the voltmeter. As an extra challenge, three of the voltages in the Table will not correspond to any of the circuits.

Example: Refer to Circuit 1. Assuming that the resistance of R is chosen so that approximately one-half of the maximum recommended current flows through the zener diode, it is obvious that the voltmeter will read 6.7 volts (the diode's zener voltage). Remember—the maximum current rating of the device and the exact resistance of R is not important; that the value of R is chosen so that the device exhibits its typical operating characteristics is important. The voltage in the table that is closest to 6.7 volts is 6.7 volts. Thus, we have written 6.7 volts on the line next to the meter. What the author has chosen as the best answers are given after the circuits. ◇