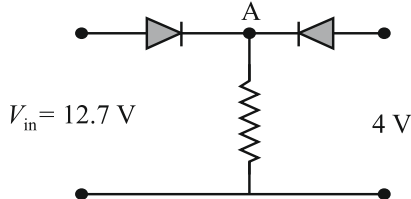
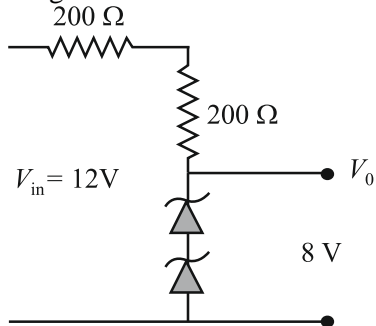


1. With increasing biasing voltage of a photodiode, the photocurrent magnitude:
- (1) Remains constant
 - (2) Increases initially and after attaining certain value, it decreases
 - (3) Increases linearly
 - (4) increases initially and saturates finally

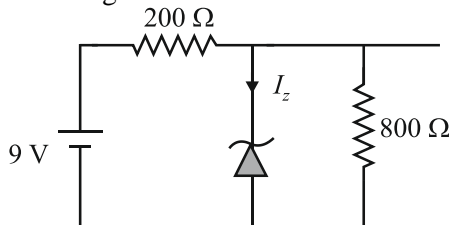
2. Both the diodes used in the circuit shown are assumed to be ideal and have negligible resistance when these are forward biased. Built in potential in each diode is 0.7 V. For the input voltages shown in the figure, the voltage (in Volts) at point A is ____.



- (1) 10
 - (2) 11
 - (3) 12
 - (4) 13
3. The circuit shown below is working as a 8 V dc regulated voltage source. When 12 V is used as input, the power dissipated (in mW) in each diode is; (considering both zener diodes are identical) ____.



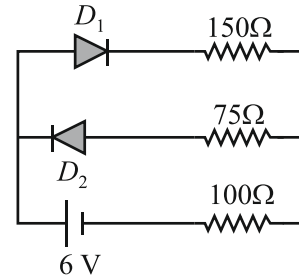
- (1) 10
 - (2) 20
 - (3) 30
 - (4) 40
4. The reverse breakdown voltage of a Zener diode is 5.6 V in the given circuit.



The current I_z through the Zener is:

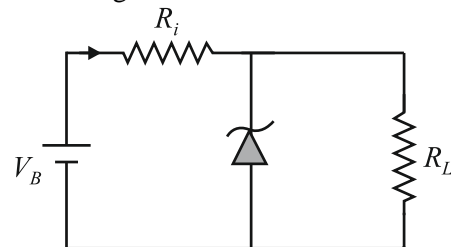
- (1) 10 mA
- (2) 17 mA
- (3) 15 mA
- (4) 7 mA

5. The circuit shown below contains two ideal diodes, each with a forward resistance of 50Ω . If the battery voltage is 6V, the current through the 100Ω resistance (in Amperes) is:



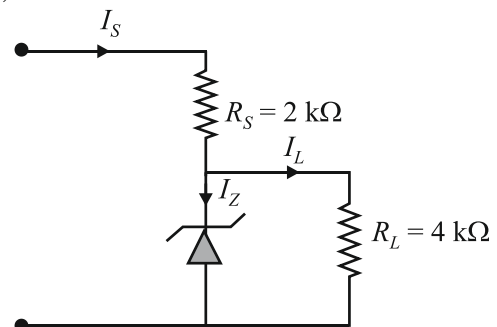
- (1) 0.036
- (2) 0.020
- (3) 0.027
- (4) 0.030

6. The figure represents a voltage regulator circuit using a Zener diode. The breakdown voltage of the Zener diode is 6 V and the load resistance is $R_L = 4 k\Omega$. The series resistance of the circuit is $R_i = 1 k\Omega$. If the battery voltage V_B varies from 8 V to 16 V, what are the minimum and maximum values of the current through Zener diode?



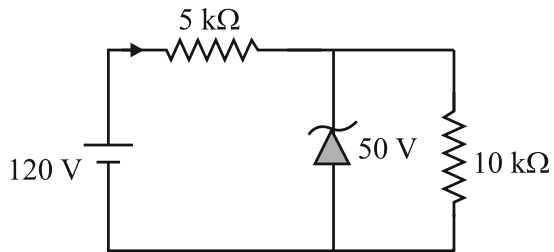
- (1) 0.5 mA; 6 mA
- (2) 1 mA; 8.5 mA
- (3) 0.5 mA; 8.5 mA
- (4) 1.5 mA; 8.5 mA

7. Figure shows a DC voltage regulator circuit, with a Zener diode of breakdown voltage = 6V. If the unregulated input voltage varies between 10 V to 16 V, then what is the maximum Zener current?



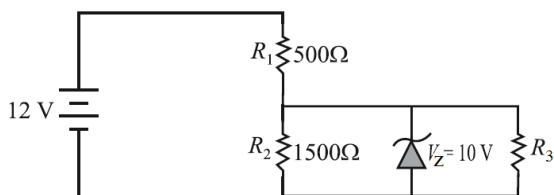
- (1) 2.5 mA
- (2) 1.5 mA
- (3) 7.5 mA
- (4) 3.5 mA

8. For the circuit shown below, the current through the Zener diode is:



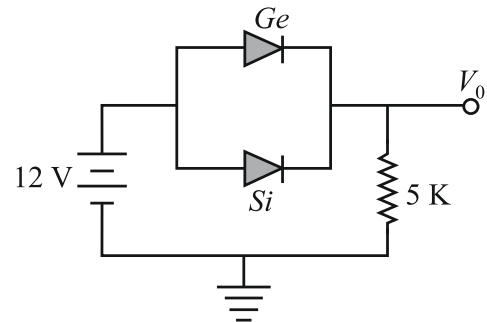
- (1) 9 mA (2) 5 mA
(3) Zero (4) 14 mA

9. In the given circuit the current through Zener Diode is close to:



- (1) 0.0 mA (2) 6.7 mA
(3) 4.0 mA (4) 6.0 mA

10. *Ge* and *Si* diodes start conducting at 0.3 V and 0.7 V respectively. In the following figure if *Ge* diode connection are reversed, the value of V_0 changes by: (assume that the *Ge* diode has large breakdown voltage)



- (1) 0.8 V
(2) 0.6 V
(3) 0.2 V
(4) 0.4 V

Answer Key

- | | | | |
|----|-----|-----|-----|
| 1. | (4) | 6. | (3) |
| 2. | (3) | 7. | (4) |
| 3. | (4) | 8. | (1) |
| 4. | (1) | 9. | (1) |
| 5. | (2) | 10. | (4) |