

QUIZ – ANSWER KEY

QUIZ NO: 142

TOPIC: ELECTRICAL ENGINEERING

DATE: 03/01/2023

1. The power loss in which of the following cases would be the maximum?

- [A] When both V & I are minimum
- [B] When both V & I are maximum
- [C] When only V is maximum
- [D] When only I is maximum

Answer: B

Explanation: $P=VI$ Hence, it would be maximum when both V and I are maximum.

2. Even after the forward current reduces to zero value, a practical diode continues to conduct in the reverse direction for a while due to the ?

- [A] Resistance of the diode
- [B] High junction temperature
- [C] Stored charges in the depletion region
- [D] None of the mentioned

Answer: C

Explanation: Due to the stored charges during the earlier current flow, even when the current reduces to zero due to some structural properties of the device, the device takes time to sweep out the stored charges.

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3. For a p-n junction diode, the peak inverse current & the reverse recovery time are dependent on ?

- [A] Inverse voltage
- [B] Forward Voltage
- [C] di/dt
- [D] All of the above mentioned

Answer: C

Explanation:

It only depends upon the number stored charges which depends upon the rate of change of current.

4. In an AC-DC converter, a diode might be used as a ?

- [A] voltage source
- [B] phase angle controller
- [C] freewheeling Diode
- [D] filter

Answer: C

Explanation: In converters diodes are used to feed the energy back to the load in case of an inductive load.

5. When the p-n junction diode is forward biased, the width of the depletion region ___ ?

- [A] increases
- [B] decreases
- [C] remains Constant
- [D] increases than Decreases

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Answer: B

Explanation: When forward biased depletion layer decreases & finally it collapses to allow the current flow.

6. When the p-n junction diode is reversed biased, the width of the depletion region ____ ?

[A] increases

[B] decreases

[C] remains Constant

[D] none of the above mentioned

Answer: A

Explanation: When reverse biased depletion layer increases until the breakdown value is reached.

7. In case of a practical p-n junction diode, the rise in the junction temperature ____ ?

[A] Decreases the width of the depletion region

[B] Increases the barrier potential

[C] Increases the width of the depletion region

[D] Width of the depletion region increases but the barrier potential remains constant

Answer: A

Explanation: The rise in temperature excites the charges, which go & recombine with the charges in the depletion region decreasing its width. Higher the temperature, lesser is the E.M.F required to turn on the device.

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8. In the equilibrium state, the barrier potential across a unbiased silicon diode is ____ ?
- [A] 0.3 V
 - [B] 0.7 V
 - [C] 1.3 V
 - [D] 0 V

Answer: B

Explanation: Barrier potential is due to the charges that establish an electric field across the two junctions.

9. In the equilibrium state the barrier, potential across a unbiased germanium diode is _____ ?
- [A] 0.3 V
 - [B] 0.7 V
 - [C] 1.7 V
 - [D] 0 V

Answer: A

Explanation: Barrier potential is due to the charges that establish an electric field across the two junctions.

10. If V & I are the forward voltage & current respectively, then the power loss across the diode would be ?
- [A] V/I
 - [B] $V^2 I^2$
 - [C] $I^2 V$
 - [D] VI

Answer: D

Explanation: Simply power (P) is voltage into current i.e. VI

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