

OBJECTIVE TYPE QUESTIONS

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1. The depletion region in an open circuited PN junction contains.
(a) electrons (b) holes (c) immobile ions (d) minority carriers.
2. Avalanche breakdown is primarily dependent on
(a) collision (b) doping (c) ionization (d) recombination
3. The width of depletion layer of a junction
(a) decreases with light doping (b) increases with heavy doping
(c) independent of applied voltage (d) increased under reverse bias.
4. The cut-in voltage for Si diode is approximately
(a) 0.2V (b) 0.6V (c) 1.1V (d) any other value.
5. A clipper circuit always
(a) needs a d.c source (b) clips both half cycles of input
(c) clips upper portion of signal (d) clips some part of signal.
6. A Zener diode has a d.c power dissipation rating of 500 mW & a Zener voltage rating of 6.8V. The value of I_{Zmax} is
(a) 70 mA (b) 72 mA (c) 73.5 mA (d) 75 mA
7. When the Zener diode reverse current increases from 20 mA to 30 mA, the Zener voltage changes from 5.6V to 5.65V. The Zener resistance is
(a) $2\ \Omega$ (b) $3\ \Omega$ (c) $4\ \Omega$ (d) $5\ \Omega$

In a properly biased transistor in CE configuration, I_c is not zero even when $I_B = 0$

True / False.

9. Common collector arrangement is generally used for impedance matching.

True / False.

10. In saturation region operation of a transistor

- (a) both junctions are forward biased
- (b) both junctions are reverse biased.
- (c) E-B junction is forward biased while C-B junction is reverse biased.

11. As the magnitude of the collector junction reverse bias increases, the effective base width

- (a) increases
- (b) decreases
- (c) Unchanged

12. In a BJT, $I_c = 30\text{mA}$, $\beta = 100$, the I_B is

- (a) 0.03mA
- (b) 0.3mA
- (c) 30mA
- (d) 300mA

13. Once a Zener diode goes into breakdown, its _____ does not change much.

- (a) Voltage
- (b) Current
- (c) impedance
- (d) capacitance.

14. Zener diode is a reverse biased lightly doped PN junction diode.

True or False.

sine wave can be converted into a square wave with the help of Zener diode.

True or False.

- 16. The maximum efficiency of full wave rectification is
 (a) 40.6% (b) 100% (c) 81.2% (d) 85.6%

- 17. In a bridge rectifier, if V_m is the peak voltage across the secondary of the transformer, the maximum voltage coming across each reverse biased diode is
 (a) V_m (b) $2V_m$ (c) $V_m/2$ (d) $V_m/\sqrt{2}$

- 18. The ripple factor of a bridge rectifier is
 (a) 0.406 (b) 1.21 (c) 1.11 (d) 2.22

- 19. In a full wave rectifier, the current in each of the diodes flows for
 (a) complete cycle of input signal
 (b) half cycle of the input signal.
 (c) for zero time.
 (d) more than half cycle.

- 20. The ripple factor of a power supply is a measure of
 (a) its filter efficiency
 (b) its voltage regulation
 (c) diode rating
 (d) purity of output power.

The value of total collector current in a CB circuit is

(a) $I_C = \alpha I_E$ (b) $I_C = \alpha I_E + I_{CO}$

(c) $I_C = \alpha I_E - I_{CO}$ (d) $I_C = \beta I_E$

22. The E-B junction of a given transistor is forward biased and its C-B junction reverse-biased, if the base current is increased, then its.

(a) I_C decreases (b) V_{CE} increases (c) I_C increases

(d) V_{CC} increases.

23. The best method of bias is

(a) fixed bias (b) Collector to base bias

(c) base bias with collector & emitter feedbacks.

(d) Voltage divider bias.

24. The smallest of the four h-parameters of a transistor is

(a) h_i (b) h_r (c) h_o (d) h_f .

25. The voltage gain of an emitter follower is

(a) more than its current gain

(b) greater than or equal to unity

(c) less than or equal to unity.

(d) dependent on emitter load.

FET is essentially a

- (a) current driven device (b) voltage driven device
(c) power driven device (d) none.

27. JFET can operate in

- (a) depletion mode only (b) enhancement mode only
(c) both mode (d) None of two.

28. In a JFET, the amplification factor μ , transconductance g_m and dynamic resistance r_d are related as.

- (a) $\mu = g_m r_d$ (b) $\mu = g_m r_d^2$ (c) $\mu = g_m / r_d$ (d) $\mu = r_d / g_m$.

29. When a reverse bias is applied to the gate of JFET, the depletion region width.

- (a) is uniform in the channel
(b) is wider near the source & tapers near drain
(c) is wider near drain & tapers near source.
(d) is nil.

30. In a JFET, drain current is maximum when V_{GS} is

- (a) Zero (b) negative (c) positive (d) equal to V_p .