(a) BJT-OPERATING MODES & CONFIGURATIONS

1. The leakage current I_{CBO} flows in
   (a) The emitter, base and collector leads
   (b) The emitter and base leads.
   (c) The emitter and collector leads.
   (d) The base and collector leads.

2. Early effect in BJT refers to
   (a) avalanche breakdown
   (b) thermal breakdown
   (c) base narrowing
   (d) Zener breakdown

3. The emitter of the transistor is generally doped the heaviest because it
   (a) has to dissipate maximum power
   (b) has to supply the charge carriers
   (c) is the first region of transistor
   (d) must possess low resistance

4. In a properly Biased NPN transistor most of the electrons from the emitter
   (a) recombine with holes in the base
   (b) recombine in the emitter its self
   (c) pass through the base to the collector
   (d) are stopped by the junction barrier

5. The following relationship between α and β are correct except
   (a) $\beta = \frac{\alpha}{1-\alpha}$
   (b) $\alpha = \frac{\beta}{1+\beta}$
   (c) $\alpha = \frac{\beta}{1-\beta}$
   (d) $1 - \alpha = \frac{1}{(1+\beta)}$

6. 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) $I_C = \beta\, I_E$

7. In a transistor amplifier, the reverse saturation current I_{CO}
   (a) double for every 10^0 rise in temperature
   (b) doubles for every 1^0 rise in temperature
   (c) increase linearly with the temperature
   (d) doubles for every 5^0 rise in temperature
8. The collector characteristics of a common- emitter connected transistor may be used to find its
   (a) input resistance
   (b) base current
   (c) output resistance
   (d) voltage gain

9. Which of the following approximation is often used in electronic circuit
   (a) $I_C \cong I_E$
   (b) $I_B \cong I_C$
   (c) $I_B \cong I_E$
   (d) $I_E \cong I_B + I_C$

10. Which of the following transistor configuration circuit is much less temperature dependent
   (a) common base
   (b) common emitter
   (c) common collector
   (d) none of the above

11. The CE amplifier circuit are preferred over CB amplifier circuit because they have
   (a) lower amplification factor
   (b) larger amplification factor
   (c) high input resistance and low output resistance
   (d) none of these

12. A transistor when connected in CE mode has
   (a) a low input resistance and a low output resistance
   (b) a high input resistance and high output resistance
   (c) a high input resistance and low output resistance
   (d) a medium input resistance and high output resistance

13. A transistor connected in common base configuration has

(a) a high input resistance and low output resistance
(b) a low input resistance and high output resistance
(c) a low input resistance and low output resistance
(d) a high input resistance and a high output resistance

Answers

1.	(d)	2.	(c)	3.	(b)	4.	(c)
5.	(b)	6.	(b)	7.	(a)	8.	(c)
9.	(a)	10.	(c)	11.	(b)	12.	(d)
13.	(b)						