FET-AMPLIFIER

1. A field effect transistor (FET)
    a. Uses a forward bias p-n junction
    b. Uses a high concentration emitter junction
    c. Has a very high input resistance
    d. Depends on flow of minority carrier

2. As compared to transistor amplifier JFET amplifier has
    a. Higher voltage gain, less input impedance
    b. Less voltage gain, less input impedance
    c. Less voltage gain, higher input impedance
    d. Higher voltage gain, higher input impedance

3. The best location for setting a Q-point on dc load line of an FET Amplifier is at
    a. Saturation point   c. Mid- point
    b. Cutoff point   d. None of these

4. The pinch off voltage is the voltage
    a. At which gate source junction breaks down
    b. Which causes depletion regions to meet
    c. The voltage applied between drain & source
    d. Neither of these

5. If properly biased JFET acts as
    a. Current controlled current source
    b. Voltage controlled voltage source
    c. Voltage controlled current source
    d. Current controlled voltage source

6. The voltage gain of a common source JFET amplifier depends upon its
   a. Transconductance (g_m)
   c. External load resistance
   b. Amplification factor (μ)
   d. Both (a) and (c)

7. A common gate amplifier has
   a. High input resistance and high output resistance
   b. Low input resistance and high output resistance
   c. Low input resistance and low output resistance
   d. High input resistance and low output resistance

8. The transconductance g_m of JFET is equal to
   a. $-2.\dfrac{I_{DSS}}{V_P}$
   b. $-2.\dfrac{I_{DSS}}{V_P}\left(1 - \dfrac{V_{GS}}{V_P}\right)$
   c. $\dfrac{2}{|V_P|}\sqrt{I_{DSS}.I_D}$
   d. $\dfrac{I_{DSS}}{V_P}\left(1 - \dfrac{V_{GS}}{V_P}\right)$

9. A transconductance amplifier has
   a. High input impedance and low output impedance
   b. Low input impedance and high output impedance
   c. High input and output impedances
   d. Low input and output impedances

10. A JFET is similar is operation to
    a. Diode
    c. Triode
    b. Pentode
    d. Tetrode

11. In a common source JFET amplifier the output voltage is
    a. 180^0 out of phase with input
    c. 90^0 out of phase with input
    b. In phase with input
    d. None of the above

12. A common source (CS) amplifier has a voltage gain of
   a. $g_m r_d$
   b. $g_m r_s$
   c. $g_m r_s / (1 + g_m r_s)$
   d. $g_m r_d / (1 + g_m r_d)$

13. A source follower has a voltage gain of
   a. $g_m r_d$
   b. $g_m r_s$
   c. $g_m r_s / (1 + g_m r_s)$
   d. $g_m r_d / (1 + g_m r_d)$

14. A cascode amplifier has the advantage of
   a. Large voltage gain
   b. Low input capacitance
   c. Low input impedance
   d. Higher g_m

15. If a JFET has I_{DSS}=8mA and V_P=4V, then R_{DS} equals
   a. 200Ω
   b. 320 Ω
   c. 500 Ω
   d. 5K Ω

Answers

1. (c)	2.	(c)	3.	(c)	4.	(b)
5. (c)	6.	(d)	7.	(b)	8.	(b)
9. (a)	10.	(b)	11.	(a)	12.	(a)
13. (c)	14	(b)	15.	(c)		