

JFET and MOSFET

1. For low values of V_{DS} , the JFET behaves like a
- (a) resistance
 - (b) constant voltage device
 - (c) constant current device
 - (d) negative resistor

Answer: (a)

2. In the output characteristics of a MOSFET with low values of V_{ds} , the value of the on-state resistance is
- (a) V_{ds}/I_g
 - (b) V_{ds}/I_d
 - (c) 0
 - (d) ∞

Answer: b

3. Assertion: An Input impedance of MOSFET is larger than BJT and JFET.

Reason: The gate terminal is isolated from the substrate by means of an insulating layer of Silicon Dioxide or some other suitable oxide, which supports a leakage current of extremely small magnitude.

- (a) Both Assertion and Reason are true
- (b) Assertion is true but Reason is false
- (c) Assertion is false but Reason is true
- (d) Both Assertion and Reason are false

Answer: (a)

4. In an E-only N-channel MOSFET, drain current starts only when V_{GS} is
- (a) Positive
 - (b) Negative
 - (c) Zero
 - (d) Positive and greater than V_{th}

Answer: (d)

5. A Depletion-MOSFET is considered to be a
- (a) Normally-off device
 - (b) Normally-on device
 - (c) Current-controlled device
 - (d) High-power switch

Answer: (b)

6. In a JFET, the primary control on drain current is exerted by
- (a) channel resistance
 - (b) size of depletion regions
 - (c) voltage drop across channel
 - (d) gate reverse bias

Answer: (d)

7. After V_{DS} reaches pinch-off value V_P in a JFET, the drain current I_D becomes
- (a) zero
 - (b) low
 - (c) saturated
 - (d) reversed

Answer: (c)

8. In a JFET, drain current is maximum when V_{GS} is
- (a) zero
 - (b) negative
 - (c) positive
 - (d) equal to V_P

Answer: (a)

9. The drain source voltage at which the drain current becomes nearly constant is called,
- (a) barrier voltage
 - (b) breakdown voltage
 - (c) pick-off voltage
 - (d) pinch-off voltage

Answer: (d)

10. The main factor which differentiates a depletion MOSFET from an enhancement only MOSFET is the absence of

- (a) insulated gate
- (b) electrons
- (c) channel
- (d) PN-junction

Answer: (c)

11. The depletion N-channel MOSFET

- (a) Can be operated as a JFET with zero gate voltage
- (b) Can be operated as an enhancement MOSFET by applying +ve bias to gate
- (c) Can be operated as an enhancement MOSFET by applying -ve bias to gate
- (d) Cannot be operated as an enhancement MOSFET

Answer. (b)

12. In MOSFETs N-channel is more preferred than P-channel because

- (a) It is cheaper
- (b) It is faster
- (c) It has better drive capability
- (d) It has better noise immunity

Answer. (b)