

[BSNL Placement Paper – 2](#)

When a piece of copper and another of germanium are cooled from room temperature to 800 K then the resistance of -

- a) Each of them increases
- b) Each of them decreases
- c) Copper increases and germanium decreases
- d) Copper decreases and germanium increases

Answer: d)

When a signal of 10 mV at 75 MHz is to be measured then which of the following instrument can be used -

- a) VTVM
- b) Cathode ray oscilloscope
- c) Moving iron voltmeter
- d) Digital multimeter

Answer: b)

When a sample of germanium and silicon having same impurity density are kept at room temperature then –

- a) Both will have equal value of resistivity
- b) Both will have equal value negative resistivity
- c) Resistivity of germanium will be higher than that of silicon
- d) Resistivity of silicon will be higher than that of germanium

Answer: d)

When an RC driving point impedance function has zeros at $s = -2$ and $s = -5$ then the admissible poles for the function would be –

- a) $s = 0$; $s = -6$
- b) $s = 0$; $s = -3$
- c) $s = 0$; $s = -1$
- d) $s = -3$; $s = -4$

Answer: b)

For the n-type semiconductor with $n = N_p$ and $p =$, the hole concentration will fall below the intrinsic value because some of the holes –

- a) drop back to acceptor impurity states
- b) drop to donor impurity states
- c) Virtually leave the crystal
- d) recombine with the electrons

Answer: d)

The location of lightning arrester is –

- a) Near the transformer
- b) Near the circuit breaker
- c) Away from the transformer
- d) None

Time constant of an RC circuit increases if the value of the resistance is –

- a) Increased

- b) Decreased
- c) Neither a nor b
- d) Both a and b

Answer: a)

Telemetry is a method of –

- a) Counting pulses sent over long distances
- b) Transmitting pictures from one place to another
- c) Transmitting information concerning a process over a distance
- d) None

Answer: c)

When the gauge factor of a strain gauge is 2, stress is 1050 kg/cm², $\epsilon = 2.1 \times 10^{-6}$ kg/cm² and R is 100 ohms then the value of DR will be -

- a) 2W
- b) 3W
- c) 4W
- d) 1W

Answer: d)

As the drain voltage is increased for a junction FET in the pinch off region then the drain current –

- a) Becomes zero
- b) Abruptly decreases
- c) Abruptly increases
- d) Remains constant

Answer: d)

11. One of the following, which is not a transducer in the true sense, is –

- a) Thermocouple
- b) Piezoelectric pick up
- c) Photo-Voltaic cell
- d) LCD

Answer: d)

When a transistor is required to match a 100W signal source with a high impedance output circuit then the connection that would be used is –

- a) Common base
- b) Common collector
- c) Common emitter
- d) Emitter follower

Answer: a)

In a JFET gates are always –

- a) forward biased
- b) reverse biased
- c) unbiased
- d) none

Answer: c)

The main factor which differentiate a DE MOSFET from an E only MOSFET is the absence of –

- a) insulated gate
- b) electrons

- c) channel
- d) P-N junction

An SCR conducts appreciable current when –

- a) Anode and gate are both negative with respect to cathode
- b) Anode and gate are both positive with respect to cathode
- c) Anode is negative and gate is positive with respect to cathode
- d) Gate is negative and anode is positive with respect to cathode

Silicon is not suitable for fabrication of light emitting diodes because it is -

- a) An indirect band gap semiconductor
- b) A direct band gap semiconductor
- c) A wide band gap semiconductor
- d) A narrow band gap semiconductor

An average responding rectifier type electronic ac voltmeter has its scale calibrated in terms of the rms value of a sine wave, when a square wave voltage of peak magnitude 100V is measured using this voltmeter then the reading indicated by the meter, will be –

- a) 111V
- b) 100V
- c) 90.09V
- d) 70.7V

Answer: b)

Which one of the following conditions for Z parameters would hold for a two port network containing linear bilateral passive circuit elements –

- a) $Z_{11} = Z_{22}$
- b) $Z_{12}Z_{21} = Z_{11}Z_{22}$
- c) $Z_{11}Z_{12} = Z_{22}Z_{21}$
- d) $Z_{12} = Z_{21}$

Answer: d)

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