

**NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.**

<b>Course/Branch</b> : B.E/ EEE	<b>Year / Semester</b> : II/III	Format No.	NAC/TLP-07a.13
<b>Subject Code</b> : EC8353	<b>Subject Name</b> : Electronic Devices & Circuits	Rev. No.	02
<b>Unit No</b> : II	<b>Unit Name</b> : Transistors & Thyristors	Date	30.09.2020

**OBJECTIVE TYPE QUESTION BANK**

<b>S. No.</b>	<b>Objective Questions (MCQ /True or False / Fill up with Choices )</b>	<b>BTL</b>
1	Which of the following condition is true for cut-off mode?  <b>A) The Collector Current Is Zero</b> B) The Collector Current Is Proportional To The Base Current C) The Base Current Is Non Zero D) All Of The Mentioned	L4
2	Which of the following is true for the cut-off region in an npn transistor?  A) Potential Difference Between The Emitter And The Base Is Smaller Than 0.5V <b>B) Potential Difference Between The Emitter And The Base Is Smaller Than 0.4V</b> C) The Collector Current Increases With The Increase In The Base Current D) The Collector Current Is Always Zero And The Base Current Is Always Non Zero	L4
3	Which of the following is true for the active region of an npn transistor?  A) The Collector Current Is Directly Proportional To The Base Current B) The Potential Difference Between The Emitter And The Collector Is Less Than 0.4 V <b>C) All Of The Mentioned</b> D) None Of The Mentioned	L4
4	Which of the following is true for the saturation region of BJT transistor?  A) The Collector Current Is Inversely Proportional To The Base Current <b>B) The Collector Current Is Proportional To The Square Root Of The Collector Current</b> C) The Natural Logarithm Of The Collector Current Is Directly Proportional To The Base Current D) None Of The Mentioned	L4
5	Which of the following is true for a pnp transistor in active region?  <b>A) CB Junction Is Reversed Bias And The EB Junction Is Forward Bias</b> B) CB Junction Is Forward Bias And The EB Junction Is Forward Bias C) CB Junction Is Forward Bias And The EB Junction Is Reverse Bias D) CB Junction Is Reversed Bias And The EB Junction Is Reverse Bias	L4
6	The curve between the collector current versus the potential difference between the base and emitter is  A) A Straight Line Inclined To The Axes B) A Straight Line Parallel To The X-Axis	L4

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	<p><b>C) An Exponentially Varying Curve</b> D) A Parabolic Curve</p>	
7	<p>The Early Effect is also called as</p> <p><b>A) Base-Width Modulation Effect</b> B) Base-Width Amplification Effect C) Both Of The Mentioned D) None Of The Mentioned</p>	L4
8	<p>For the BJT to operate in active mode Collector-Base junction must be</p> <p>A) Heavily Doped <b>B) Must Reversed Bias</b> C) Must Be Forward Bias D) Lightly Doped</p>	L4
9	<p>Comparing the size of BJT and FET, choose the correct statement?</p> <p><b>A) BJT Is Larger Than The FET</b> B) BJT Is Smaller Than The FET C) Both Are Of Same Size D) Depends On Application</p>	L4
10	<p>For a FET when will maximum current flows?</p> <p>A) <math>V_{gs} = 0V</math> <b>B) <math>V_{gs} = 0v</math> And <math>V_{ds} \geq  V_p </math></b> C) <math>V_{DS} \geq  V_p </math> D) <math>V_p = 0</math></p>	L4
11	<p>To use FET as a voltage controlled resistor, in which region it should operate?</p> <p><b>A) Ohmic Region</b> B) Cut Off C) Saturation D) Cut Off And Saturation</p>	L4
12	<p>The action of JFET in its equivalent circuit can be represented as which of the following?</p> <p>A) Current Controlled Current Source B) Current Controlled Voltage Source <b>C) Voltage Controlled Current Source</b> D) Voltage Controlled Voltage Source</p>	L4

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13	<p>Which of the following is the main advantage of Self bias?</p> <p><b>A) Eliminates The Need Of Two Power Supply</b>                  B) Maximum Stability                  C) Minimum Stability                  D) Maximum &amp; Minimum Stability</p>	L4
14	<p>What is pinch off voltage?</p> <p>A) The Minimum Voltage Required To Turn On The FET                  B) The Maximum Voltage A FET Can Withstand                  C) Current Amplification Factor/Voltage Gain  <b>D) The Value Of Voltage At Which The Current Gets Pinched To Zero</b></p>	L4
15	<p>What will happen if gate voltage applied is positive to pinch off voltage?</p> <p><b>A) Device Burns</b>                  B) More Current Flows                  C) Nothing Happens                  D) Current Remains The Same</p>	L4
16	<p>How does a FET behave when the v-I characteristics are to the left of pinch off for an n channel FET?</p> <p><b>A) Voltage Controlled Resistor</b>                  B) Amplifier                  C) Switch                  D) Diode</p>	L4
17	<p>The MOSFET combines the areas of _____ &amp; _____</p> <p><b>A) Field Effect &amp; MOS Technology</b>                  B) Semiconductor &amp; TTL                  C) Mos Technology &amp; CMOS Technology                  D) None Of The Mentioned</p>	L4
18	<p>Choose the correct statement</p> <p>A) MOSFET Is A Unipolar, Voltage Controlled, Two Terminal Device                  B) MOSFET Is A Bipolar, Current Controlled, Three Terminal Device  <b>C) MOSFET Is A Unipolar, Voltage Controlled, Three Terminal Device</b>                  D) MOSFET Is A Bipolar, Current Controlled, Two Terminal Device</p>	L4

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19	<p>The arrow on the symbol of MOSFET indicates</p> <p>A) That It Is A N-Channel MOSFET  <b>B) The Direction Of Electrons</b>                  C) The Direction Of Conventional Current Flow                  D) That It Is A P-Channel MOSFET</p>	L4
20	<p>In the transfer characteristics of a MOSFET, the threshold voltage is the measure of the</p> <p><b>A) Minimum Voltage To Induce A N-Channel/P-Channel For Conduction</b>                  B) Minimum Voltage Till Which Temperature Is Constant                  C) Minimum Voltage To Turn Off The Device                  D) None Of The Above Mentioned Is True</p>	L4
21	<p>The output characteristics of a MOSFET, is a plot of</p> <p>A) <math>I_d</math> As A Function Of <math>V_{gs}</math> With <math>V_{ds}</math> As A Parameter  <b>B) <math>I_d</math> As A Function Of <math>V_{ds}</math> With <math>V_{gs}</math> As A Parameter</b>                  C) <math>I_g</math> As A Function Of <math>V_{gs}</math> With <math>V_{ds}</math> As A Parameter                  D) <math>I_g</math> As A Function Of <math>V_{ds}</math> With <math>V_{gs}</math> As A Parameter</p>	L4
22	<p>Consider an ideal MOSFET. If <math>V_{gs} = 0V</math>, then <math>I_d = ?</math></p> <p><b>A) Zero</b>                  B) Maximum                  C) <math>I_{d(On)}</math>                  D) <math>I_{dd}</math></p>	L4
23	<p>For a MOSFET <math>V_{gs}=3V</math>, <math>I_{dss}=5A</math>, and <math>I_d=2A</math>. Find the pinch of voltage <math>V_p</math></p> <p>a) 4.08  <b>b) 8.16</b>                  c) 16.32                  d) 0V</p>	L4
24	<p>The N-channel MOSFET is considered better than the P-channel MOSFET due to its</p> <p>A) Low Noise Levels                  B) TTL Compatibility                  C) Lower Input Impedance  <b>D) Faster Operation</b></p>	L4

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25	IGBT possess  A) Low Input Impedance <b>B) High Input Impedance</b> C) High On-State Resistance D) Second Breakdown Problems	L4
26	In IGBT, the p <sup>+</sup> layer connected to the collector terminal is called as the  A) Drift Layer <b>B) Injection Layer</b> C) Body Layer D) Collector Layer	L4
27	The voltage blocking capability of the IGBT is determined by the  A) Injection Layer B) Body Layer C) Metal Used For The Contacts <b>D) Drift Layer</b>	L4
28	The structure of the IGBT is a  A) P-N-P Structure Connected By A MOS Gate B) N-N-P-P Structure Connected By A MOS Gate C) P-N-P-N Structure Connected By A MOS Gate <b>D) N-P-N-P Structure Connected By A MOS Gate</b>	L4
29	In case of the UJT firing circuit, when the UJT turns on  A) The Capacitor Starts To Charge <b>B) The Capacitor Starts To Discharge</b> C) The Capacitor Remains Unaffected D) There Is No Capacitor In A UJT Firing Circuit	L4
30	In the UJT firing circuit, the pulses are generated while the  A) Capacitor Charges <b>B) Capacitor Discharges</b> C) Capacitor Voltage Is Zero D) There Is No Capacitor In A UJT Firing Circuit	L4

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31	<p>Which terminal does not belong to the SCR?</p> <p>A) Anode B) Gate <b>C) Base</b> D) Cathode</p>	L4
32	<p>In the SCR structure the gate terminal is located</p> <p>A) Near The Anode Terminal <b>B) Near The Cathode Terminal</b> C) In Between The Anode &amp; Cathode Terminal D) None Of The Mentioned</p>	L4
33	<p>The static V-I curve for the SCR is plotted for</p> <p>A) <math>I_a</math> (Anode Current) Vs <math>I_g</math> (Gate Current), <math>V_a</math> (Anode – Cathode Voltage) As A Parameter <b>B) <math>I_a</math> Vs <math>V_a</math> With <math>I_g</math> As A Parameter</b> C) <math>V_a</math> Vs <math>I_g</math> With <math>I_a</math> As A Parameter D) <math>I_g</math> Vs <math>V_g</math> With <math>I_a</math> As A Parameter</p>	L4
34	<p>The DIAC can be represented by</p> <p>A) Two Scrs In Anti-Parallel B) Two Scrs In Parallel <b>C) Two Diodes In Anti-Parallel</b> D) Two Diodes In Parallel</p>	L4
35	<p>The TRIAC can be represented by</p> <p><b>A) Two Scrs In Anti-Parallel</b> B) Two Scrs In Parallel C) Two Diodes In Anti-Parallel D) Two Diodes In Parallel</p>	L4
36	<p>With the anode positive with respect to the cathode &amp; the gate circuit open, the SCR is said to be in the</p> <p>A) Reverse Blocking Mode B) Reverse Conduction Mode <b>C) Forward Blocking Mode</b> D) Forward Conduction Mode</p>	L4

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37	For an SCR in the forward blocking mode (practically)  A) Leakage Current Does Not Flow <b>B) Leakage Current Flows From Anode To Cathode</b> C) Leakage Current Flows From Cathode To Anode D) Leakage Current Flows From Gate To Anode	L4
38	The forward break over voltage is the  A) Anode-Cathode Voltage At Which Conduction Starts With Gate Signal Applied <b>B) Anode-Cathode Voltage At Which Conduction Starts With No Gate Signal Applied</b> C) Gate Voltage At Which Conduction Starts With No Anode-Cathode Voltage D) Gate Voltage At Which Conduction Starts With Anode-Cathode Voltage Applied	L4
39	For a forward conducting SCR device, as the forward anode to cathode voltage is increased  A) The Device Turns On At Higher Values Of Gate Current <b>B) The Device Turns On At Lower Values Of Gate Current</b> C) The Forward Impedance Of The Device Goes On Increasing D) The Forward Impedance Of The Device Goes On Decreasing	L4
40	Usually the forward voltage triggering method is not used to turn-on the SCR because  A) It Increases Losses B) It Causes Noise Production <b>C) It May Damage The Junction &amp; Destroy The Device</b> D) Relatively It's An Inefficient Method	L4