POWER ELECTRONICS

Submitted by
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Ques.1. A Silicon Controlled Rectifier (SCR) Is A

1. Unijunction Device
2. Device With Three Junction
3. Device With Four Junction
4. None Of The Above

Answer.2. Device With Three Junction

Ques.2. A Thyristor Is Basically

1. PNPN Device
2. A Combination Of Diac And Triac
3. A Set Of Scrs
4. A Set Of SCR, Diac And A Triac

Answer.1. PNPN Device

Ques.3. Which Semiconductor Power Device Out Of The Following, Is Not A Current Triggering Device?

1. Thyristor
2. Triac
3. G.T.O
4. MOSFET

Answer.4. MOSFET

Ques.4. Which Of The Following Device Incorporates A Terminal For Synchronizing Purposes?

1. Diac
2. Triac
3. SUS
4. None Of The Above

Answer.3. SUS

Ques.5. The Advantages Of SCS Over SCR Is

1. Slow Switching Time And Large V_H
2. Slow Switching Time And Smallerv_h
3. Faster Switching Time And Smallerv_h
4. Faster Switching Time And Large V_H

Answer.3. Faster Switching Time And Smallerv_h

Ques.6. A Thyristor Equivalent Of A Thyratron Tube Is A

1. Diac
2. Triac
3. Silicon Controlled Rectifier
4. None Of The Above

Hide Explanation

Answer.3. Silicon Controlled Rectifier

Ques.7. A Triac Is A

1. 2 Terminal Switch
2. 2 Terminal Bilateral Switch
3. 3 Terminal Bilateral Switch
4. 3 Terminal Bidirectional Switch

Answer.4. 3 Terminal Bidirectional Switch

Ques.8. The Fig. Below Represents A

1. Triac Thyristor
2. Diac Trigger
3. Diode Rectifier
4. None Of The Above

Hide Explanation

Answer.2. Diac Trigger

Ques.9. The Triple Frequency Of A Six-Phase Half Wave Rectifier For 220 V, 60 Hz Input Will Be

1. 2160 Hz
2. 720 Hz
3. 360 Hz
4. 60 Hz

Answer.3. 360 Hz

Ques.10. The Minimum Duration Of The Pulse In A Pulse Triggering System For Thyristors Should Be At

1. 10 Ms
2. 10 Ms
3. 30 Ms
4. 1 Sec

Hide Explanation

Answer.1. 10 µs

Ques.11. The Inverter Can Be Classified As

1. Voltage Source Inverter
2. Current Source Inverter
3. Both 1 And 2
4. Power Inverter

Hide Explanation

Answer.3. Both 1 And 2

Ques.12. During Induction Heating, The Skin Depth Of Penetration Is Proportional (F = Frequency) To

1. F
2. F^2
3. 1/F
4. $1/\sqrt{F}$

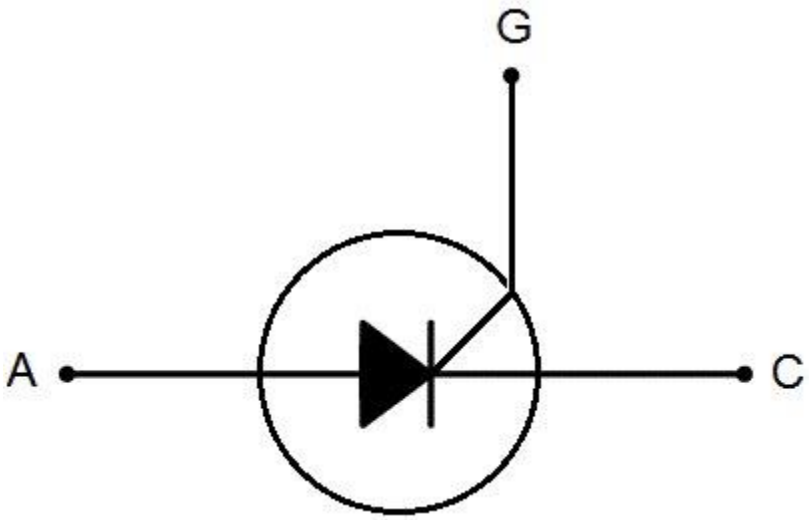
Hide Explanation
Answer.4. $1/\sqrt{F}$
Explanation:-
Workpieces. High Frequencies Of Up To A Few Hundred Kilohertz Are Used For Forging, Soldering, Hardening, And Annealing.

Ques.13. A Device That Cannot Be Triggered With Low Voltage Of Either Polarity Is

1. Diac
2. Triac
3. SCS
4. All Of The Above

Hide Explanation
Answer.1. Diac
.

Ques.14. The Fig. Given Below Represents



1. Silicon Controlled Rectifier
2. Field Effect Transistor
3. Photoemissive Diode
4. Tunnel Diode

Hide Explanation
Answer.1. Silicon Controlled Rectifier

Ques.15. In A Three-Phase Half-Wave Rectifier, Each Diode Conducts For A Duration Of

1. 180°
2. 120°
3. 90°
4. 60°

Hide Explanation
Answer.2. 120°

Ques.16. Which Of The Following Finds Applications In Speed Control Of A DC Motor?

1. FET
2. NPN Transistor
3. SCR

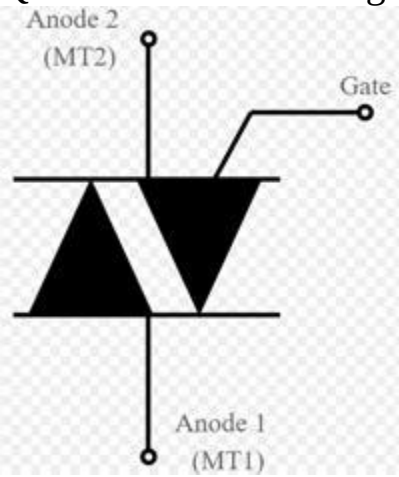
4. None Of The Above

Hide Explanation

Answer.3. SCR

.

Ques.17. The Given Fig. Below Represents



1. Triac Thyristor
2. Diac Thyristor
3. Capacitive Diode
4. None Of The Above

Hide Explanation

Answer.1. Triac Thyristor

Explanation:-

The Triac Is A Three-Terminal Ac Switch That Is Triggered Into Conduction When A Low-

Ques.18. The Ward-Leonard System Is Used For Controlling The Speed Of

1. DC Motors
2. Single Phase AC Motors
3. Three Phase Motors
4. Universal Motors

Hide Explanation

Answer.1. DC Motors

Explanation:

The Basic Principle Of The DC Variable Speed Drive Is That The Speed Of A Separately Excited DC Motor Is Directly Proportional To The Voltage Applied To The Armature Of The

Ques.19. A Device That Does Not Exhibit Negative Resistance Characteristics Is

1. FET
2. UJT
3. Tunnel Diode
4. SCR

Hide Explanation
Answer 1. FET

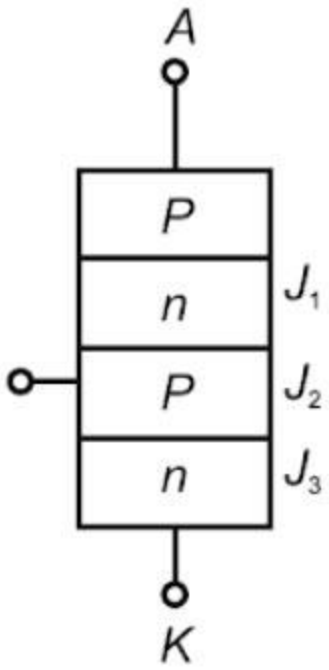
Ques.20. A Triac

1. Conducts When Not Triggered
2. Conducts When Not Triggered In Both Direction
3. Conducts When Triggered In One Direction
4. None Of The Above

Hide Explanation

Answer. 2. Conducts When Not Triggered In Both Direction

Ques.21. For A Thyristor Shown Is



1. All The 3 Junctions Are Forward Biased
2. J_1, J_2 Are Forward Biased And J_3 Reversed Biased
3. J_1 Is Forward Biased, J_2, J_3 Reversed Biased
4. J_1, J_2 Are Reversed Biased J_3 Is Forward Biased

Hide Explanation

Answer. 2. J_1, J_2 Are Forward Biased And J_3 Reversed Biased

Answer. 3. $3/\sqrt{2}$

Explanation:

Ques.23. A Voltage Source 200 Sin314t Is Applied To A Thyristor Controlled Halfwave Rectifier With A Resistive Load Of 50Ω. If The Firing Angle Is 30° With Respect To Supply Voltage Waveform, The Average Power In The Load Is

1. 90.6 Watts
2. 86.3 Watts
3. 60.8 Watts
4. 70.6 Watts

Hide Explanation

Answer.4. 70.6 Watts

Ques.24. RC Snubber Circuit Is Used To Limit The Rate Of

1. Rise Of Current In SCR
2. Rise Of Voltage Across SCR
3. Conduction Period
4. All Of The Above

Hide Explanation
Answer.2. Rise Of Voltage Across SCR
Explanation:

Ques.25. A Freewheeling Diode Is Connected Across An Inductive Load Is

1. To Restore Conduction Angle On Phase
2. To Avoid Negative Reversal Voltage Drop
3. To Reduce The PRV
4. All Of The Above

Hide Explanation
Answer.1. To Restore Conduction Angle On Phase

Ques.26. Equalizing Circuits Are Provided Across Each SCR In Series Operation To Provide Uniform

1. Current Distribution
2. Voltage Distribution
3. Firing Of Scrs
4. All Of The Above

Hide Explanation
Answer.2. Voltage Distribution

Ques.27. For The High-Frequency Choppers, The Device That Is Preferred Is

1. TRIAC
2. Thyristor
3. Transistor
4. GTO

Hide Explanation

Answer 3. Transistor

Explanation:-

Ques.28. The Thyristor Is Turned -Off When The Anode Current Falls Below_____

1. Forward Current
2. Latching Current
3. Holding Current
4. Breakover Current

Hide Explanation

Answer.3. Holding Current

Ques.29. In A Thyristor Circuit, The Angle Of Conduction Is Changed By Changing_____

1. Anode Voltage
2. Gate Current
3. Forward Current
4. Anode Current

Hide Explanation

Answer.2. Gate Current

Ques.30. A Fully Controlled Natural Commutated 3-Phase Bridge Rectifier Is Operating With A Firing Angle A = 30°. The Peak To Peak Voltage Ripple Expressed As A Ratio Of The Peak Output Dc Voltage At The Output Of The Converter Bridge Is

1. 0.5
2. √3/2
3. 2/√3
4. 1

Hide Explanation

Answer.1. 0.5

Ques.31. In AC Voltage Regulator, TRIACS Cannot Be Used For A

1. Back Emf Load
2. Resistive Load

3. R-L Load
4. Inductive Load

Hide Explanation

Answer.4. Inductive Load

Ques.32. In A Thyristor

1. The Holding Current Is Greater Than Latching Current
2. The Two Current Are Equal
3. The Latching Current Is Greater The Holding Current
4. None Of The Above

Hide Explanation

Answer.3. The Latching Current Is Greater The Holding Current

Ques.33. The VI Characteristics Of UJT Is

1. Similar To CE With A Linear And Saturation Region
2. Similar To FET With A Linear And Pinch Off Region
3. Similar To Tunnel Diode In Some Respects
4. Similar To PN Junction Diode In Some Respects

Hide Explanation

Answer.3. Similar To Tunnel Diode In Some Respects

Ques.34. Chopper Control For DC Motor Provides Variation In

1. Input Voltage
2. Frequency
3. Current
4. None Of The Above

Hide Explanation

Answer.1. Input Voltage

Explanation:

Ques.35. In A Thyristor The Ratio Of Latching Current To Holding Current Is

1. 0.5
2. 1
3. 2.7
4. 5

Hide Explanation
Answer.3. 2.7
Explanation:
The Typical Ratio Of Latching Current To Holding Current Lies In The Range Of 2.5 To 3. Therefore, Only 2.7 Is The Nearest Option.
Hence, The Correct Option Is (3).

Ques.36. In A Thyristor, Dv/Dt Protection Is Achieved Through The Use Of

1. L Across Thyristor
2. RC Across Thyristor
3. R Across Thyristor
4. RL Across Thyristor

Hide Explanation
Answer.2. RC Across Thyristor
Explanation:
Thyristor Protection Or SCR Protection

Ques.37. In A Thyristor Di/Dt Protection Is Achieved Through The Use Of

1. L In Series With The Thyristor
2. R Across Thyristor
3. RC Across Thyristor
4. RL Across Thyristor

Hide Explanation
Answer.1. L In Series With The Thyristor
Explanation:

Ques.38. UJT When Used For Triggering An SCR, Has The Waveform

1. Sine Wave
2. Square Wave
3. Sawtooth Wave
4. Trapezoidal

Hide Explanation
Answer.3. Sawtooth Wave

Ques.39. A Resistor Connected Across The Gate And Cathode Of A Thyristor Increase Its

1. Turn Off Time
2. Di/Dt Rating
3. Noise Immunity
4. Holding Current

Hide Explanation

Answer.4. Holding Current

Explanation:

- D_3 Is Connected As Shown In The Figure To Block The Positive Gate Current Coming From The Supply When The Device Is Homed Biased.

Ques.40. P-Side Emitter In UJT Is

1. Not Doped
2. Feebly Doped
3. Heavily Doped
4. Moderately Doped

Hide Explanation

Answer.3. Heavily Doped

Ques.41. Inverter Converts

1. DC To AC
2. AC To DC
3. DC To DC
4. AC To AC

Hide Explanation

Answer.3. DC To AC

Explanation:

Ques.42. The Latching Current Of An SCR Is 12 Ma. Its Holding Current Will Be

1. 4 Ma
2. 12 Ma
3. 50 Ma
4. 8 Ma

Hide Explanation

Answer.1. 4 Ma
Explanation:
The Typical Ratio Of Latching Current To Holding Current Lies In The Range Of 2.5 To 3. Here For Calculation, We Are Taking The Value Of Latching Current 3
Latching Current/Holding Current = 3
Given
Latching Current = 12
12/Holding Current = 3
Holding Current = 4

Ques.43. In Series Connected Thyristors

1. L Is Used For Tuning Out Junction Capacitance
2. L & C Is Used For Filtering Out The Ripple
3. R, C Is Called Snubber Circuit
4. L Is Intended To Increase Di/Dt At Switch On

Hide Explanation
Answer.3. R, C Is Called Snubber Circuit

The RC Circuit (Snubber) Acts As A Lowpass Filter For This Voltage Transient. The Resistance Has Normally Low Value So That The Transient Is Absorbed By The Capacitor Quickly. Thus The Thyristor Is Protected Against Voltage Transients. The RC Snubber Circuit Is Very Commonly Used For Protection Of Thyristors Against Transient Voltages (High-Frequency Voltage Spikes).

Ques.44. When Thyristor And Transistor As A Switch Are Compared, The True Statement Is

1. Thyristor Requires Turns Off Circuit While Transistor Does Not
2. The Voltage Drop Of The Thyristor Is Less Than Transistor
3. Thyristor Requires A Continuous Gate Current
4. Transistor Does Not Draw Continuously Base Current

Hide Explanation
Answer.1. Thyristor Requires Turns Off Circuit While Transistor Does Not

Explanation:

Ques.45. In DC Chopper, The Waveform For Input And Output Voltages Are Respectively

1. Both Discontinuous
2. Both Continuous
3. Continuous, Discontinuous
4. Discontinuous, Continuous

Hide Explanation
Answer.3. Continuous, Discontinuous

Ques.46. In DC Chopper, Per Unit Ripple Is Maximum When Duty Cycle A Is

1. 0.1
2. 0.3
3. 0.5
4. 0.7

Hide Explanation
Answer.3. 0.5
Ques.47. In A Step-Up Chopper Circuit, If Vs Is The Source Voltage And A Is Duty Cycle, Then The Output Voltage Is

1. $V_s/(1 + A)$
2. $V_s(1 + A)$
3. $V_s(1 - A)$
4. $V_s/(1 - A)$

Hide Explanation
Answer.4. $V_s/(1 - A)$
During Off-Period Of Switch S. As The Current Tends To Decrease, The Polarity Of Induced Emf Across L Is Reversed.

The Average Value Of Output Voltage Is Always Less Than Or Equal To Supply Voltage In Step Down The Chopper. But In The Step-Up Chopper, The Output Voltage Is More Than The Supply Voltage.
The Value Of Average Output Voltage Is

$$V_o = V_s/(1 - A)$$

Ques.48. When Emitter Terminal Of A UJT Is Open Then The Resistance Of The Base Terminal Is

1. Very High
2. Very Low
3. Moderate
4. Any Finite Value

Hide Explanation

Answer.4. Very High

Ques.49. A Half-Controlled Single-Phase Bridge Rectifier Is Supplying An R-L Load. It Is Operated At A Firing Angle A And The Load Current Is Continuous. The Fraction Of Cycle That The Freewheeling Diode Conducts Is

1. A/ Π
2. A
3. Π + A
4. Π − A

Hide Explanation

Answer.1. A/ Π

Explanation:

Ques.50. If The Firing Angle In An SCR Rectifier Is Decreased, The Output Is

1. Increased
2. Maximum
3. Decreased
4. Remain Unaffected

Hide Explanation

Answer.1. Increased

Ques.51. A SCR Is A _____ Switch

1. One Directional

2. Two Directional
3. Three Directional
4. Four Directional

Hide Explanation

Answer.1. One Directional

Ques.52. Comparing A Triac & SCR

1. Both Are Unidirectional Devices
2. An SCR Has Less Time For Turn Off Than Triac
3. Both Are Bidirectional Devices
4. All Of The Above

Hide Explanation

Answer.2. An SCR Has Less Time For Turn Off Than Triac

Explanation:-

Ques.53. Which Of The Following Statement Is True About Thyristor

1. The Turn Off Time Of A Thyristor Is Less Than The Turn-On Time
2. The Turn-On Time Is Less Than The Turn-Off Time
3. The Turn-Off Time For The Line Commutation Is Less Than The Forced Commutation
4. None Of The Above

Hide Explanation

Answer.2. The Turn-On Time Is Less Than The Turn-Off Time

Ques.54. In A Three-Phase Halfwave Rectifier, The Ratio Of Average Output Voltage To Per Phase Maximum AC Voltage Is

1. 1
2. 1.169
3. 0.827
4. 1.571

Hide Explanation

Answer.3. 0.827

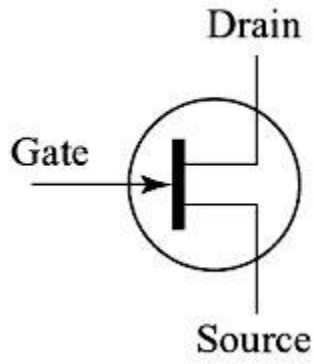
Explanation:-

The Average D.C Output Voltage For A Phase Half-Wave Rectifier Is 0.827 Of The Peak.

$Dc_{avg} = 0.827 \times Vpeak$

So Ratio Of Average Output Voltage To Per Phase Maximum AC Voltage = $Dc_{avg} / V_{peak} = 0.827$ V

Ques.55. The Figure Represents The



1. Zener Diode
2. Silicon Controlled Rectifier
3. Junction Field Effect Transistor
4. Tunnel Diode

Hide Explanation
Answer.3. Junction Field Effect Transistor

Ques.56. In A 3-Phase Half Wave Rectifier Circuit, Each Diode Is Subjected To A PIV Od

1. V_m
2. $\sqrt{2}V_m$
3. $\sqrt{3}V_m$
4. $2V_m$

Hide Explanation
Answer.3. $\sqrt{3}V_m$

Ques.57. In A Three-Phase Halfwave Rectifier, The Ratio Of Average Output Voltage To Per Phase Maximum AC Voltage Is

1. 0.955

2. 1.169
3. 0.827
4. 1.571

Hide Explanation

Answer.1. 0.955

Explanation:-

The Average D.C Output Voltage For A Phase Half-Wave Rectifier Is 0.827 Of The Peak.

$Dc_{avg} = 0.955 \times Vpeak$

So Ratio Of Average Output Voltage To Per Phase Maximum AC Voltage $= Dc_{avg} / V_{peak} = 0.955$ V

Ques.58. In A 1φ, Half Wave Controlled Rectifier If The Input Voltage Is 400 Sin314t, The Average Output Voltage For A Firing Angle Of 60° Is

1. 100/Π
2. 200/Π
3. 300/Π
4. 400/Π

Hide Explanation

Answer.4. 400/Π

Explanation:-

The Average Output Voltage Of 1φ, Half Wave Controlled Rectifier Is

$Vo = (Vm/2\pi) X (1+Cos\alpha)$

Where

V_m = Maximum Voltage

$V_m = 400$

$400/2\pi X (1+Cos60) = 300/\Pi.$

Ques.59. Among This Alternative, PIV Rating Of Which Diode Is Lower Than That Of Equivalent Vacuum Diode?

1. PN Junction Diode
2. Crystal Diode
3. Tunnel Diode
4. Small Single Diode

Hide Explanation
Answer.2. Crystal Diode

Ques.60. In A 3-Φ Semi Converter For Firing Angle Less Than Or Equal To 60°, Wheeling Diode Conducts For

1. Zero Degree
2. 30°
3. 45°
4. 75°

Hide Explanation
Answer.1. Zero Degree

Ques.61. The Fully Controlled Thyristor Converter In The Figure Is Fed From A Single-Phase Source. When The Firing Angle Is 0°, The DC Output Voltage Of The Converter Is 300 V. What Will Be The Output Voltage For A Firing Angle Of 60°, Assuming Continuous Conduction?

1. 300
2. 150
3. 200
4. 700

Hide Explanation
Answer.2. 150
Explanation:-
The Output Voltage Of A Fully Controlled Single Phase Rectifier Is Given By
$V_o = 2V_m\cos\alpha/\Pi$
Now At A = 0° Dc Output Is 300 V
$300 = 2V_m\cos0°/\Pi$
$300 = 2V_m/\Pi$————(1)
For Firing Angle 60° The Output Voltage Will Be
$V_o = 2V_m\cos60°/\Pi$
Putting The Value Of $2V_m/\Pi$ In Equation 1 We Get
$V_o = 300\cos60°$
$V_o = 150$ V

Ques.62. In A 3-Phase Voltage Source Inverter Used For Speed Control Of Induction Motor, Antiparallel Diodes Are Used Across Each Switching Device. The Main Purpose Of Diodes Is To:

1. Protect The Switching Devices Against Overvoltage
2. Provide The Path For Freewheeling Current
3. Allow The Motor To Return Energy During Regeneration
4. Help In Switching Off The Devices

Hide Explanation
Answer.3. Allow The Motor To Return Energy During Regeneration
.

Ques.63. In A 1-Φ Full Converter, Number Of Scrs Conducting During An Overlap

1. 2
2. 4
3. 6
4. 8

Hide Explanation
Answer.2. 4
Explanation:-

Ques.64. A Three-Phase AC To DC Diode Bridge Rectifier Is Supplying From A Three-Phase, 440 V Source. The Rectifier Supplies A Purely Resistive Load. The Average DC Voltage Across The Load Will Be V

1. 594.20
2. 1029.20
3. 840.40
4. 320.20

Hide Explanation
Answer.2. 1029.20

Ques.65. If The PIV Rating Of A Diode Is Exceeded

1. The Diode Conducts Poorly
2. The Diode Behaves Like A Tunnel Diode

3. The Diode Is Destroyed
4. The Diode Behaves Like A Capacitor

Hide Explanation

Answer.3. The Diode Is Destroyed

Explanation:-

Ques.66. A Forward Bias PN Junction Will Act As A/An:

1. Amplifier
2. Open Switch
3. Closed Switch
4. Attenuator

Hide Explanation

Answer.3. Closed Switch

Explanation:-

Ques.67. In The Case Of Full Wave Rectifier, The Ripple Factor Is

1. 0.48
2. 0.5
3. 1.51
4. 1

Hide Explanation

Answer.1. 0.48

Ques.68. For A Certain Transistor, If The Value Of Beta Is Equal To 500 And Base Current Is 5ma, Then The Value Of Emitter Current Is:-

1. 2.5A
2. 2A
3. 3A
4. 2.505

Hide Explanation

Answer.4. 2.505

Explanation:-

Given Base Current I_B = 5ma

Current Gain B = 500

The Dc Current Gain B_{dc} Is Defined As The Ratio Of Collector Current To Base Current At A Constant V_{CE} Under Dc Biasing Conditions.

$B = I_C/I_B$

$500 = I_C/50$
$I_C = 2500$ Ma
The Emitter Current Is
$I_E = I_B + I_C$
$I_E = 50 + 2500$
$I_E = 2505ma = 2.505$ A

Ques.69. Which Among The Characteristics Of The Crystal Diode Is Used For Rectification?

1. Opposite
2. Can't Be Determined
3. Forward Or Reversed
4. Forward

Hide Explanation
Answer.4. Forward

Ques.70. Which Among The Following Indicates Early Effect In BJT?

1. Zener Breakdown
2. Base Narrowing
3. Avalanche Breakdown
4. Thermal Breakdown

Hide Explanation
Answer.2. Base Narrowing

Ques.71. When The Collector Junction In A Transistor Is Biased In The Reverse Direction And The Emitter Junction In The Forward Direction, The Transistor Is Said To Be Is The:-

1. Saturation
2. Cutoff Region
3. Active Region
4. None Of These

Hide Explanation
Answer.3. Active Region
Explanation:-
.

Ques.72. In A BJT The Base Current(I_B) Is About _____ Of Emitter Current (IE)

1. 5%
2. 20%
3. 25%
4. 35%

Hide Explanation
Answer.1. 5%
Explanation:-

Ques.73. Among These Which One Is Correct About The Characteristics Of The Transistor?

1. It Has Very Low Input Impedance
2. It Has Zero Input Impedance
3. It Has The High Input Impedance
4. It Has Low Input Impedance

Hide Explanation
Answer.3. It Has The High Input Impedance

Ques.74. A Transistor When Connected In CE Mode Has:-

1. A Medium Input Resistance And Low Output Resistance
2. A Low Input Resistance And Low Output Resistance
3. A Low Input Resistance And High Output Resistance
4. A High Input Resistance And High Output Resistance

Hide Explanation
Answer.1. A Medium Input Resistance And Low Output Resistance

Ques.75. If The Cathode Of The Thyristor Is Made +Ve With Respect To The Anode & No Gate Current Is Applied Then:-

1. Only The Middle Junction Is Forward Biased
2. Only The Middle Junction Is Reversed Biased
3. All The Junction Are Forward Biased
4. All The Junction Are Reversed Biased

Hide Explanation

Answer.1. Only The Middle Junction Is Forward Biased

Ques.76. The _____ Region Has The Highest Area In The Transistor

1. Base
2. Collector
3. Base-Emitter
4. Emitter

Hide Explanation

Answer.2. Collector

Explanation:-

A Bipolar Junction Transistor (BJT) Is A Three-Layer, Two Junction Semiconductor Device Consisting Of Either Two N-Type And One P-Type Layer Of Material (NPN Transistor) Or Two P-Type And One N-Type Layer Of Material (PNP Transistor).

Ques.77. Which Configuration In Bipolar Junction Transistor Is Also Known As Voltage Follower Circuit?

1. Common Base
2. Common Collector
3. Common Emitter
4. None Of These

Hide Explanation

Answer.2. Common Collector

Ques.78. The Effective Turning Off SCR After The Anode Current Has Reached Zero Value.

1. The Charge Is Removed By Applying Reverse Anode-Cathode Voltage
2. Chargers Are Injected By Applying Reverse Anode-Cathode Voltage
3. Chargers Are Injected By Applying The Gate Signal
4. None Of These

Hide Explanation

Answer.1. The Charge Is Removed By Applying Reverse Anode-Cathode Voltage

Explanation:-

Ques.79. In The Forward Blocking Mode, The Middle Junction (J_2) Has The Characteristics Of That Of A:

1. Inductor
2. Transistor
3. Capacitor
4. None Of These

Hide Explanation
Answer.3. Capacitor

Ques.80. During The Transition Time Or Turn On Time

1. The Forward Anode Voltage Is Increased From 10% To 90% & The Anode Current Decreases From 90% To 10% Of The Initial Value
2. The Forward Anode Voltage Is Decreased From 90% To 10% & The Anode Current Decreases From 90% To 10% Of The Initial Value
3. The Forward Anode Voltage Is Decreased From 90% To 10% & The Anode Current Increases From 10% To 90% Of The Initial Value
4. The Forward Anode Voltage Is Increased From 10% To 90% & The Anode Current Also Increases From 10% To 90% Of The Initial Value

Hide Explanation
Answer.3. The Forward Anode Voltage Is Decreased From 90% To 10% & The Anode Current Increases From 10% To 90% Of The Initial Value
Explanation:-

Ques.81. The Forward Dv/Dt Rating Of An SCR:-

1. Decrease With The Decrease In The RMS Value If Forward Anode-Cathode Voltage
2. Decrease With The Increase In The Junction Temperature
3. Increase With An Increase In The Junction Temperature
4. Increase With The Decrease In The RMS Value Of Forward Anode-Cathode Voltage

Hide Explanation
Answer.3. Increase With An Increase In The Junction Temperature
Explanation:-

Ques.82. The Two Transistor Model Of The SCR Can Be Obtained By:-

1. Bisecting The SCR Vertically
2. Bisecting The Scrs Middle Two Layer
3. Bisecting The SCR Horizontally
4. Bisecting The Scrs Top Two And Bottom Two Layers

Hide Explanation

Answer.4. Bisecting The Scrs Top Two And Bottom Two Layers

Ques.83. Latching Current For An SCR Is 100 Ma, A Dc Source Of 200 V Is Also Connected To The SCR Which Is Supplying An R-L Load. Compute The Minimum Width Of The Gate Pulse Required To Turn On The Device. Take L = 0.2 H & R = 20 Ohm Both In Series.

1. 81 Msec
2. 100.5 Msec
3. 62.7 Msec
4. 56.9 Msec

Hide Explanation

Answer.2. 100.5 Msec

Explanation:-

Ques.84. What Is The Most Suitable Method To Turn On The SCR Device Among The Following?

1. Gate Triggering Method
2. Forward Voltage Triggering Method
3. Temperature Triggering Method
4. Dv/Dt Triggering Method

Hide Explanation

Answer.1. Gate Triggering Method

Ques.85. What Is The Total Anode Current Of SCR In The Equivalent Circuit From The Two Transistors (T_1 & T_2) Analogy Of SCR?

1. The Sum Of Both Base Current

2. The Sum Of Both Collector Current
3. The Sum Of The Base Current Of T_2 & Collector Current Of T_1
4. The Sum Of The Base Current Of T_1 & Collector Current Of T_2

Hide Explanation
Answer.2. The Sum Of Both Collector Current

Ques.86. For An SCR, The Gate-Cathode Characteristics Have A Slope Of 130. The Gate Power Dissipation Is 0.5 Watt. Find Ig.

1. 6.2 Ma
2. 0.62 A
3. 620 Ma
4. 62 Ma

Hide Explanation
Answer.4. 62 Ma

Ques.87. When Both The Junctions Of Bipolar Junction Transistor (BJT) Are In Forward Biased, Then In Which Region BJT Will Operate?

1. Ohmic Region
2. Cut-Off Region
3. Saturation Region
4. Active Region

Hide Explanation
Answer.3. Saturation Region

Ques.88. What Kind Of Device Is A Field Effect Transistor?

1. Non-Semiconductor
2. Unipolar Semiconductor
3. Bipolar Semiconductor
4. Insulator

Hide Explanation
Answer.2. Unipolar Semiconductor
Explanation:-

Ques.89. The Value Of Anode Current Required To Maintain The Conduction Of An SCR Even Though The Gate Signal Is Removed Is Called As The:-

1. Latching Current
2. Holding Current
3. Switching Current
4. All Of These

Hide Explanation
Answer.1. Latching Current

Ques.90. Consider An N-Channel MOSFET Having Width W, Length L And Electron Mobility In The Channel Is μ_n And Capacitance Per Unit Area Is C_Ox. If Gate To Source Voltage V_GS = 0.7V, Drain To Sour Voltage V_DS = 0.2 V, μ_Nc._Ox = 120μa/V, Threshold Voltage V_T = 0.4V And (W/L) = 60. Calculate The Transconductance Gm In Ma/V

1. 2.5ma
2. 1.65ma
3. 3ma
4. 1.44ma

Hide Explanation
Answer.4. 1.44ma

Ques.91. What Is The Value Of B In A Transistor Having I_C = 100.2ma And I_E = 100ma?

1. 101
2. About 1
3. 501
4. 201

Hide Explanation
Answer.3. 501

Ques.92. Which Of The Following Are The Functions Of A Transistor?

1. Rectifier And Fixed Resistor
2. Switching Device And Fixed Resistor

3. Tuning Device And Rectifier
4. Variable Resistor And Switching Device

Hide Explanation

Answer.4. Variable Resistor And Switching Device

Ques.93. Number Of Diodes Required In The Ordinary Full-Wave Rectifier Is

1. 1
2. 2
3. 3
4. 4

Hide Explanation

Answer.2. 2

Ques.94. In A Rectifier Circuit, The Primary Function Of The Filter Is To

1. Control The DC Level Of The Output Voltage
2. Remove Ripples From Rectified Output
3. Minimize AC Input Variations
4. Suppress Odd Harmonics In The Rectifier Output

Hide Explanation

Answer.2. Remove Ripples From Rectified Output

Ques.95. A Rectifier For Welding Has Voltage/Current Characteristics As

1. Drooping
2. Rising
3. Static
4. Variable

Hide Explanation

Answer.1. Drooping

Ques.96. During Forward Blocking State, The SCR Has

1. Low Current, Medium Voltage
2. Low Current, Large Voltage

3. Medium Current, Large Voltage
4. Large Current, Low Voltage

Hide Explanation

Answer.2. Low Current, Large Voltage

Ques.97. The Function Of SCR Contactor In Resistance Welding Machine Is

1. To Provide An Accurate Weld Time For Each Weld
2. To Connect The Large Power Supply To Welding By Closing A Small Switch
3. To Provide Full Wave Rectification Of The Welding Current
4. To Avoid Saturation Of Transformation Core

Hide Explanation

Answer.2. To Connect The Large Power Supply To Welding By Closing A Small Switch

Ques.98. A Single Phase Full Bridge Inverter Is Fed From A 48 V Battery And Is Delivering Power To A Pure Resistance Load What Is The Value Of Fundaments Output Voltage?

1. 15.80
2. 22.26
3. 8.36
4. 43.22

Hide Explanation

Answer.4. 43.22

Explanation:-

The Output Dc Voltage Of Single Phase Full Bridge Inverter Is Given As

$E_o = 2\sqrt{2}E_{dc}/\Pi$

Where

E_{dc} = Input DC Voltage = 48 V

$E_o = 2\sqrt{2} \times 48/\Pi$

E_o = 43.22 V

Ques.99. A Three-Phase Diode Bridge Rectifier Is Fed From A 400 V RMS, 50 Hz, Three-Phase AC Source. If The Load Is Purely Resistive, Then Peak Instantaneous Output Voltage Is Equal To

1. 400 V
2. $\sqrt{2} \times 400$
3. $400/\sqrt{2}$
4. $\sqrt{2}/400$

Hide Explanation

Answer.2. $\sqrt{2} \times 400$

Ques.100. The Peak Inverse Voltage, In Case Of A Bridge Rectifier, For Each, The Diode Is: (Where E_o = Peak Value Of Input Voltage)

1. E_o
2. $2E_m$
3. $3E_m$
4. $4E_m$

Hide Explanation

Answer.1. E