

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Power Electronics

Course Code - DECE605C

* You can submit the form ONLY ONCE.

* Fill the following information for further process.

* Required

1. Email *

2. Name of the Student *

3. Enter Full Student Code *

4. Enter Roll No *

5. Enter Registration No *

6. Enter Course Code *

7. Enter Course Name *

8. *

Mark only one oval.

- Diploma in Pharmacy
- Bachelor of Pharmacy
- B.TECH.(CSE)
- B.TECH.(ECE)
- BCA
- B.SC.(CS)
- B.SC.(BT)
- B.SC.(ANCS)
- B.SC.(HN)
- B.Sc.(MM)
- B.A.(MW)
- BBA
- [B.COM](#)
- B.A.(JMC)
- BBA(HM)
- BBA(LLB)
- B.OPTOMETRY
- B.SC.(MB)
- B.SC.(MLT)
- B.SC.(MRIT)
- B.SC.(PA)
- LLB
- [B.SC\(IT\)-AI](#)
- B.SC.(MSJ)
- Bachelor of Physiotherapy
- B.SC.(AM)
- Dip.CSE
- Dip.ECE
- [DIP.EE](#)
- DIP.CE

- [DIP.ME](#)
- PGDHM
- MBA
- M.SC.(BT)
- M.TECH(CSE)
- LLM
- M.A.(JMC)
- M.A.(ENG)
- M.SC.(MATH)
- M.SC.(MB)
- MCA
- M.SC.(MSJ)
- M.SC.(AM)
- M.SC.CS)
- M.SC.(ANCS)
- M.SC.(MM)
- B.A.(Eng)

Answer all the questions. Each question carry one mark.

9. 1.In a three-phase half wave rectifier usually, the primary side of the transformer is delta connected because

Mark only one oval.

- it has no neutral connection
- we can get greater output voltage
- it provides a path for the triplen harmonics
- it provides better temperature stability

10. 2. In a three-phase half wave diode rectifier using 3 diodes, each diode conducts for

Mark only one oval.

- 90 degrees
- 120 degrees
- 180 degrees
- 360 degrees

11. 3. In a three-phase half wave 6-pulse mid-point type diode rectifier, each diode conducts for

Mark only one oval.

- 120°
- 60°
- 90°
- 180

12. 4. A 3-phase bridge rectifier, has the average output voltage as 286.48 V. Find the maximum value of line voltage

Mark only one oval.

- 100 V
- 200 V
- 300 V
- 400 V

13. 5. A 3-phase bridge rectifier charges a 240 V battery. The rectifier is given a 3-phase, 230 V supply. The current limiting resistance in series with the battery is of 8 Ω . Find the average value of battery charging current.

Mark only one oval.

- 12.56 A
- 8.82 A
- 9.69 A
- 6.54 A

14. 6. In a 3-phase full converter using six SCRs, gating circuit must provide

Mark only one oval.

- one firing pulse every 30°
- one firing pulse every 60°
- one firing pulse every 90°
- three firing pulses per cycle

15. 7. The magnitude of gate voltage and gate current for triggering an SCR is

Mark only one oval.

- inversely proportional to the temperature
- directly proportional to the temperature
- inversely proportional to the anode current requirement
- directly proportional to the anode current requirement

16. 8.The major function of the pulse transformer is to

Mark only one oval.

- increase the voltage amplitude
- reduce harmonics
- isolate low & high power circuit
- create periodic pulses

17. 9.A p-type semiconductor material is doped with _____ impurities whereas a n-type semiconductor material is doped with _____ impurities

Mark only one oval.

- acceptor, donor
- dfs algorithm
- donor, donor
- donor, acceptor

18. 10.Which of the below mentioned statements is false regarding a p-n junction diode?

Mark only one oval.

- Diode are uncontrolled devices
- Diodes are rectifying devices
- Diodes are unidirectional devices
- Diodes have three terminals

19. 11. When a physical contact between a p-region & n-region is established which of the following is most likely to take place?

Mark only one oval.

- Electrons from N-region diffuse to P-region
- Holes from P-region diffuse to N-region
- Both of the above mentioned statements are true
- Nothing will happen

20. 12. Which of the following is true in case of an unbiased p-n junction diode?

Mark only one oval.

- Diffusion does not take place
- Diffusion of electrons & holes goes on infinitely
- There is zero electrical potential across the junctions
- Charges establish an electric field across the junctions

21. 13. Which of the following is true in case of a forward biased p-n junction diode?

Mark only one oval.

- The positive terminal of the battery sucks electrons from the p-region
- The positive terminal of the battery injects electrons into the p-region
- The negative terminal of the battery sucks electrons from the p-region
- None of the above mentioned statements are true

22. 14. Power diode is _____

Mark only one oval.

- a three terminal semiconductor device
- a two terminal semiconductor device
- a four terminal semiconductor device
- a three terminal analog device

23. 15. The V-I Characteristics of the diode lie in the

Mark only one oval.

- 1st & 2nd quadrant
- 1st & 3rd quadrant
- 1st & 4th quadrant
- Only in the 1st quadrant

24. 16. Which of the following is true in case of a power diode with R load?

Mark only one oval.

- I grows almost linearly with V
- I decays almost linearly with V
- I initial grows than decays
- I is independent of V

25. 17. In case of an ideal power diode, the leakage current flows from

Mark only one oval.

- anode to cathode
- cathode to anode
- in both the directions
- leakage current does not flow

26. 18. A power diode with small softness factor (S-factor) has

Mark only one oval.

- small oscillatory over voltages
- large oscillatory over voltages
- large peak reverse current
- small peak reverse current

27. 19. At turn-on the initial delay or turn on delay is the time required for the

Mark only one oval.

- input inductance to charge to the threshold value
- input capacitance to charge to the threshold value
- input inductance to discharge to the threshold value
- input capacitance to discharge to the threshold value

28. 20. Choose the correct statement

Mark only one oval.

- MOSFET suffers from secondary breakdown problems
- MOSFET has lower switching losses as compared to other devices
- MOSFET has high value of on-state resistance as compared to other devices
- All of the mentioned

29. 21. Which among the following devices is the most suited for high frequency applications?

Mark only one oval.

- BJT
- IGBT
- MOSFET
- SCR

30. 22. For a MOSFET $V_{gs}=3V$, $I_{dss}=5A$, and $I_d=2A$. Find the pinch of voltage V_p

Mark only one oval.

- 4.08
- 8.16
- 16.32
- 0V

31. 23.How does the MOSFET differ from the JFET?

Mark only one oval.

- JFET has a p-n junction
- They are both the same
- JFET is small in size
- MOSFET has a base terminal

32. 24.The basic advantage of the CMOS technology is that

Mark only one oval.

- It is easily available
- It has small size
- It has lower power consumption
- It has better switching capabilities

33. 25.The N-channel MOSFET is considered better than the P-channel MOSFET due to its

Mark only one oval.

- low noise levels
- TTL compatibility
- lower input impedance
- faster operation

34. 26.The arrow on the symbol of MOSFET indicates

Mark only one oval.

- that it is a N-channel MOSFET
- the direction of electrons
- the direction of conventional current flow
- that it is a P-channel MOSFET

35. 27.In the internal structure of a MOSFET, a parasitic BJT exists between the

Mark only one oval.

- source & gate terminals
- source & drain terminals
- drain & gate terminals
- there is no parasitic BJT in MOSFET

36. 28.In the transfer characteristics of a MOSFET, the threshold voltage is the measure of the

Mark only one oval.

- minimum voltage to induce a n-channel/p-channel for conduction
- minimum voltage till which temperature is constant
- minimum voltage to turn off the device
- none of the above mentioned is true

37. 29. Which of the following devices does not belong to the transistor family?

Mark only one oval.

- IGBT
- MOSFET
- GTO
- BJT

38. 30. A power transistor is a

Mark only one oval.

- three layer, three junction device
- three layer, two junction device
- two layer, one junction device
- four layer, three junction device

39. 31. In a power transistor, ____ is the controlled parameter.

Mark only one oval.

- VBE
- VCE
- IB
- IC

40. 32.A power transistor is a _____ device.

Mark only one oval.

- two terminal, bipolar, voltage controlled
- two terminal, unipolar, current controlled
- merge sortthree terminal, unipolar, voltage controlled
- three terminal, bipolar, current controlled

41. 33.In a power transistor, the I_B vs V_{BE} curve is

Mark only one oval.

- a parabolian exponentially decaying curve
- an exponentially decaying curve
- resembling the diode curve
- a straight line $Y = I_B$

42. 34.The forward current gain α is given by

Mark only one oval.

- I_C/I_B
- I_C/I_E
- I_E/I_C
- I_E/I_B

43. 35.The value of β is given by the expression

Mark only one oval.

IC/IB

IC/IE

IE/IC

IE/IB

44. 36.A power BJT is used as a power control switch by biasing it in the cut off region (off state) or in the saturation region (on state). In the on state

Mark only one oval.

both the base-emitter & base-collector junctions are forward biased

the base-emitter junction is reverse biased, and the base collector junction is forward biased

the base-emitter junction is forward biased, and the base collector junction is reversed biased

both the base-collector & the base-emitter junctions are reversed biased

45. 37.For a power transistor, if the forward current gain $\alpha = 0.97$, then $\beta = ?$

Mark only one oval.

0.03

2.03

49.24

32.33

46. 38.The power electronics devices have a very high efficiency because

Mark only one oval.

- cooling is very efficient
- the devices traverse active region at high speed & stays at the two states, on and off
- the devices never operate in active region
- the devices always operate in the active region

47. 39.High frequency operation of any device is limited by the

Mark only one oval.

- forward voltage rating
- switching losses
- thermal conductivity
- heat Sink arrangements

48. 40.Let's say that a transistor is operating at the middle of the load line, then a decrease in the current gain would

Mark only one oval.

- move the Q point up
- move the Q point down
- result in to & fro motion of the Q point
- not change the Q point

49. 41.IGBT possess

Mark only one oval.

- low input impedance
- high input impedance
- high on-state resistance
- second breakdown problems

50. 42.IGBT & BJT both possess ____

Mark only one oval.

- low on-state power losses
- low switching losses
- high on-state power losses
- high input impedance

51. 43.The controlling parameter in IGBT is the

Mark only one oval.

- I_G
- V_{GE}
- I_C
- V_{CE}

52. 44. In IGBT, the n⁻ layer above the p⁺ layer is called as the

Mark only one oval.

- drift layer
- injection layer
- body layer
- collector Layer

53. 45. The major drawback of the first generation IGBTs was that, they had

Mark only one oval.

- latch-up problems
- noise & secondary breakdown problems
- sluggish operation
- latch-up & secondary breakdown problems

54. 46. A latched up IGBT can be turned off by

Mark only one oval.

- forced commutation of current
- forced commutation of voltage
- use of a snubber circuit
- none of the mentioned

55. 47.Latch-up occurs in an IGBT when

Mark only one oval.

- Vce reaches a certain value
- Ic reaches a certain value
- Ig reaches a certain value
- the device temperature reaches a certain value

56. 48.The approximate equivalent circuit of an IGBT consists of

Mark only one oval.

- a BJT & a MOSFET
- a MOSFET & a MCT
- two BJTs
- two MOSFETs

57. 49.An IGBT is also know as

Mark only one oval.

- MOIGT (Metal oxide insulated gate transistor)
- COMFET (Conductively modulated FET)
- GEMFET (Grain modulated FET)
- all of the mentioned

58. 50. At present, the state-of-the-art semiconductor devices are being manufactured using

Mark only one oval.

- Semiconducting Diamond
- Gallium-Arsenide
- Germanium
- Silicon-Carbide

59. 51. A thyristor (SCR) is a

Mark only one oval.

- P-N-P device
- N-P-N device
- P-N-P-N device
- P-N device

60. 52. Choose the false statement.

Mark only one oval.

- SCR is a bidirectional device
- SCR is a controlled device
- In SCR the gate is the controlling terminal
- SCR are used for high-power applications

61. 53.The static V-I curve for the SCR is plotted for

Mark only one oval.

- Ia (anode current) vs Ig (gate current), Va (anode – cathode voltage) as a parameter
- Ia vs Va with Ig as a parameter
- Va vs Ig with Ia as a parameter
- Ig vs Vg with Ia as a parameter

62. 54.If the cathode of an SCR is made positive with respect to the anode & no gate current is applied then

Mark only one oval.

- all the junctions are reversed biased
- all the junctions are forward biased
- only the middle junction is forward biased
- only the middle junction is reversed biased

63. 55.With the anode positive with respect to the cathode & the gate circuit open, the SCR is said to be in the

Mark only one oval.

- reverse blocking mode
- reverse conduction mode
- forward blocking mode
- forward conduction mode

64. 56.The forward break over voltage is the

Mark only one oval.

- anode-cathode voltage at which conduction starts with gate signal applied
- anode-cathode voltage at which conduction starts with no gate signal applied
- gate voltage at which conduction starts with no anode-cathode voltage
- gate voltage at which conduction starts with anode-cathode voltage applied

65. 57.A thyristor can be brought from the forward conduction mode to forward blocking mode by

Mark only one oval.

- the dv/dt triggering method
- applying a negative gate signal
- applying a positive gate signal
- applying a reverse voltage across anode-cathode terminals

66. 58.Usually the forward voltage triggering method is not used to turn-on the SCR because

Mark only one oval.

- it increases losses
- it causes noise production
- it may damage the junction & destroy the device
- relatively it's an inefficient method

67. 59. Among the following, the most suitable method to turn on the SCR device is the

Mark only one oval.

- gate triggering method
- dv/dt triggering method
- forward voltage triggering method
- temperature triggering method

68. 60. For the SCR to remain in the ON (conducting) state

Mark only one oval.

- gate signal is continuously required
- no continuous gate signal is required
- no forward anode-cathode voltage is required
- negative gate signal is continuously required

69. 61. In the reverse blocking mode the middle junction (J₂) has the characteristics of that of a

Mark only one oval.

- transistor
- capacitor
- inductor
- None of above

70. 62.The minimum value of anode current below which it must fall to completely turn-off the device is called as the

Mark only one oval.

- holding current value
- latching current value
- switching current value
- peak anode current value

71. 63.For effective turning off of the SCR after the anode current has reached zero value, _____

Mark only one oval.

- chargers are injected by applying reverse anode-cathode voltage
- chargers are removed by applying reverse anode-cathode voltage
- chargers are injected by applying gate signal
- chargers are removed by applying gate signal

72. 64.The area under the curve of the gate characteristics of thyristor gives the

Mark only one oval.

- total average gate current
- total average gate voltage
- total average gate impedance
- total average gate power dissipation

73. 65. The average gate power dissipation for an SCR is 0.5 Watts the voltage applied to the gate is $V_g = 10$ V. What is the maximum value of current I_g for safe operation?

Mark only one oval.

- 0.25 A
- 10A
- 0.05 A
- 0.1 A

74. 66. For an SCR, the gate-cathode characteristic has a slope of 130. The gate power dissipation is 0.5 watts. Find I_g

Mark only one oval.

- 0.62 A
- 620 Ma
- 62 mA
- 6.2 mA

75. 67. From the two transistor (T1 & T2) analogy of SCR, the total anode current of SCR is _____ in the equivalent circuit.

Mark only one oval.

- the sum of both the base currents
- the sum of both the collector current
- the sum of base current of T1 & collector current of T2
- the sum of base current of T2 & collector current of T1

76. 68.Solid State Relays (SSRs) have a

Mark only one oval.

- coil and contact arrangement
- optocoupler
- scr
- none of the mentioned

77. 69.TRIAC is used in

Mark only one oval.

- chopper
- speed control of induction machine
- speed control of universal motor
- none of the mentioned

78. 70.SMPS is used for

Mark only one oval.

- obtaining controlled ac power supply
- obtaining controlled dc power supply
- storage of dc power
- switch from one source to another

This content is neither created nor endorsed by Google.

Google Forms