

Program: BE Electrical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: EEC 504 and Course Name: Power Electronics

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | Characteristics of SCR is known as static characteristics. |
| Option A: | Turn on |
| Option B: | Turn off |
| Option C: | V-I |
| Option D: | Gate |
| | |
| Q2. | In a fully controlled rectifier the effect of finite value of source inductance the average output voltage |
| Option A: | does not change |
| Option B: | increases |
| Option C: | decreases |
| Option D: | has no relation with |
| | |
| Q3. |is not an application of bidirectional DC to DC converter. |
| Option A: | Energy storage |
| Option B: | Renewable energy |
| Option C: | DC microgrid |
| Option D: | Rectifier |
| | |
| Q4. | In triggering of SCR firing angle range of 0 to 180° is obtained. |
| Option A: | Resistance |
| Option B: | Resistance Capacitance |
| Option C: | Uni Junction Transistor |
| Option D: | Temperature |
| | |
| Q5. | For an SCR, di/dt protection is achieved through the use of |
| Option A: | R in series with SCR |
| Option B: | C in series with SCR |
| Option C: | L in series with SCR |
| Option D: | C across SCR |
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| Q6. | are used in IGBTs to provide amplification and isolation. |

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| Option A: | Snubber circuits |
| Option B: | Heat sinks |
| Option C: | Driver circuits |
| Option D: | Fuses |
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| Q7. | From the input side the IGBT behaves essentially as a and its output characteristics are similar to a |
| Option A: | MOSFET,BJT |
| Option B: | BJT,MOSFET |
| Option C: | MOSFET,MOSFET |
| Option D: | BJT,BJT |
| | |
| Q8. | Among the following, which diode will be preferred in a converter operating at 50kHz for medium voltage applications? |
| Option A: | Zener |
| Option B: | Line frequency |
| Option C: | Fast recovery |
| Option D: | Schottky |
| | |
| Q9. | In a fan regulator circuit using Triac-Diac, if the firing angle increases then the speed of fan |
| Option A: | Remains constant |
| Option B: | decreases |
| Option C: | has no relation with firing angle |
| Option D: | increases |
| | |
| Q10. | can be used to protect SCR from Electromagnetic interference. |
| Option A: | Snubber |
| Option B: | Shielding |
| Option C: | Circuit Breaker |
| Option D: | Fuse |
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| Q11. | Among the following DC to DC converters, in which converter the average inductor current is same as load current. |
| Option A: | Buck-Boost |
| Option B: | Boost |
| Option C: | Buck |
| Option D: | Step up |
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| Q12. | Choose the correct statement for single phase controlled rectifiers. |
| Option A: | Half controlled rectifier uses four SCRs |
| Option B: | Fully controlled rectifier uses two SCRs |
| Option C: | Dual converter uses eight SCRs |
| Option D: | Midpoint configuration uses four SCRs |
| Q13. |is used as rectifier to improve the input power factor |
| Option A: | Dual converter |
| Option B: | PWM rectifier |
| Option C: | Half wave controlled rectifier |
| Option D: | Fully controlled rectifier |
| Q14. | For an inverter is a measure of closeness in shape between a waveform and its fundamental component. |
| Option A: | Distortion Factor |
| Option B: | Total Harmonic distortion |
| Option C: | Lowest Order Harmonic |
| Option D: | Voltage gain |
| Q15. | Is also known as six pulse rectifier. |
| Option A: | Three phase Fully controlled rectifier |
| Option B: | Single phase Fully controlled rectifier |
| Option C: | Single phase half controlled rectifier |
| Option D: | Midpoint configuration |
| Q16. | For a single phase fully controlled converter with highly inductive load, the average value of output voltage is zero for |
| Option A: | firing angle $\alpha = 0^\circ$ |
| Option B: | firing angle $\alpha = 90^\circ$ |
| Option C: | firing angle $\alpha = 180^\circ$ |
| Option D: | firing angle $\alpha = 45^\circ$ |
| Q17. | In a single-phase half bridge inverter the number of devices gated at a time is |
| Option A: | one |
| Option B: | two |
| Option C: | three |
| Option D: | four |
| Q18. | A PWM inverter is capable of producing output voltage with as compared with square wave inverter. |
| Option A: | Variable voltage, variable frequency |
| Option B: | Variable voltage, fixed frequency |
| Option C: | Fixed voltage, variable frequency |
| Option D: | Fixed voltage, fixed frequency. |

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| Q19. | In 120° conduction mode of three phase full bridge inverter with resistive load switches conduct at a time. |
| Option A: | six |
| Option B: | four |
| Option C: | three |
| Option D: | two |
| | |
| Q20. | Two inductors and two capacitors are used in dc to dc converter. |
| Option A: | Buck |
| Option B: | Cuk |
| Option C: | Boost |
| Option D: | Buck-Boost |
| | |
| Q21. | In a Boost converter, the average output voltage will be double of the input voltage when the duty cycle is |
| Option A: | 1 |
| Option B: | 0.5 |
| Option C: | 0.25 |
| Option D: | 0.75 |
| | |
| Q22. | In AC voltage controller gate signal should be for R-L load. |
| Option A: | continuous pulses of 180° |
| Option B: | single pulse for each half cycle |
| Option C: | constant |
| Option D: | Continuous pulses of 180° - firing angle |
| | |
| Q23. | Which is not an advantage of Matrix converter? |
| Option A: | Harmonic content |
| Option B: | Bi-directional energy flow |
| Option C: | Number of semiconductor devices used |
| Option D: | Input power factor can be controlled |
| | |
| Q24. | Among the following which device has highest switching speed. |
| Option A: | Power BJT |
| Option B: | IGBT |
| Option C: | Power MOSFET |
| Option D: | SCR |
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| Q25. | AC to DC conversion can be obtained by |
| Option A: | Rectifier |
| Option B: | Cyclo converter |
| Option C: | Inverter |

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| Option D: | Step up dc chopper |
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| Question | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
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| Q1. | C |
| Q2. | C |
| Q3. | D |
| Q4 | B |
| Q5 | C |
| Q6 | C |
| Q7 | A |
| Q8. | C |
| Q9. | B |
| Q10. | B |
| Q11. | C |
| Q12. | C |
| Q13. | B |
| Q14. | B |
| Q15. | A |
| Q16. | B |

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| Q17. | A |
| Q18. | A |
| Q19. | D |
| Q20. | B |
| Q21. | B |
| Q22. | D |
| Q23. | C |
| Q24. | C |
| Q25. | A |