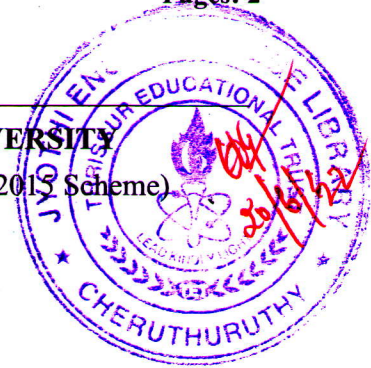


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree Examination June 2022 (2015 Scheme)

**Course Code: MR404****Course Name: POWER ELECTRONICS AND DRIVES**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 5 marks.*

Marks

- | | | |
|---|--|-----|
| 1 | Classify power diodes. | (5) |
| 2 | Enumerate some of the application of MOSFET | (5) |
| 3 | Explain any one thyristor triggering methods. | (5) |
| 4 | Describe with a block diagram AC link chopper and C chopper. | (5) |
| 5 | Enumerate the requirements of a good inverters. | (5) |
| 6 | List some of the applications of cycloconverters. | (5) |
| 7 | Briefly explain factors affecting for the choice of electric drives. | (5) |
| 8 | Describe the block diagram of electrical drives. | (5) |

PART B*Answer any three full questions, each carries 10 marks.*

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|----|---|------|
| 9 | a) With circuit diagram describe any one thyristor protection method | (5) |
| | b) Enumerate some of the comparisons between MOSFET and BJT | (5) |
| 10 | With neat sketches, explain the operation of single phase half bridge controlled converter having resistive load. | (10) |
| 11 | Sketch and explain the working of current commutated chopper | (10) |
| 12 | Explain in detail about type A and type B chopper. Also draw its circuit diagram and necessary waveform. | (10) |
| 13 | Explain the operation any two types of PWM inverters with neat sketches | (10) |

PART C*Answer any two full questions, each carries 15 marks.*

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|----|---|-----|
| 14 | a) Illustrate single phase voltage controller using resistive load. | (7) |
| | b) With neat sketch explain the multi stage sequence control of voltage controller. | (8) |

- 15 a) Describe the operation of three phase to three phase cycloconverter. (10)
b) List some of the merits and applications of cycloconverters. (5)
- 16 a) Briefly explain the parts of motor drives (7)
b) Explain the factors effecting the steady state stability. (8)
- 17 a) Describe with neat sketch about the four quadrant operation of motor drives. (7)
b) Describe different types of load torque. (8)
