Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EE3002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **POWER CONVERTER ANALYSIS-I** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Draw and explain the operation of full wave rectifier with RLE load. Also derive the output equations. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Explain the working of two pulse midpoint rectifier and derive the output equations with RL load. Also mention the limitation of one pulse rectifier. | CO1 | 15 |
| b. | Define the input current distortion factor. |  | 5 |
| 3. | a. | Discuss the role of freewheeling diode in semi converter with suitable waveforms. | CO1 | 10 |
| b. | Discuss the operation of three phase semi converter with RL load. | CO2 | 10 |
| (OR) | | | | |
| 4. |  | With neat sketch write about the operation of single phase dual converter. | CO2 | 20 |
| 5. | a. | Derive the performance parameters of 2 pulse converters with suitable equations. | CO2 | 15 |
| b. | Mention the difference between electronics and power electronics. | CO2 | 5 |
| (OR) | | | | |
| 6. |  | Discuss the effect of source impedance on the performance of single phase converters. | CO3 | 20 |
| 7. |  | Discuss the working of 12 pulse converter with suitable waveforms. | CO3 | 15 |
| Define THD. | CO3 | 5 |
| (OR) | | | | |
| 8. |  | Draw and explain the operation buck-boost converter with RLE load. Also, list few applications of buck-boost converter. | CO1 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Analyse the performance of four quadrant chopper with RLE load and derive the output equations. | CO2 | 20 |

ALL THE BEST