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 – April/May– 2017**

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| **Code :** | **14EE2012** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ELECTRIC DRIVES AND CONTROL** | **Max. marks :** | **100** |

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

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| Q. No | Sub Div. | Questions | Course  Outcome | Marks |
| 1. |  | Outline an Electric drive. How are electric drives classified? List the advantages and disadvantages. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Derive the expression for a thermal model of motor for heating and cooling. Also draw the heating and cooling curve. | CO1 | 10 |
| b. | Describe about braking of DC motor drives. | CO2 | 10 |
| 3. |  | Explain Single phase fully Controlled rectifier control of DC separately excited motor, with neat circuit diagram and wave forms. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Explain the operation of voltage source inverter (VSI) fed induction motor drive with neat sketch. | CO3 | 20 |
| 5. | a. | Explain different methods of starting of Induction motor with necessary diagrams. | CO2 | 12 |
|  | b. | Explain in detail rotor resistance method of speed control of a slip ring induction motor. | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | Explain with diagram Synchronous motor variable speed drives. | CO3 | 10 |
|  | b. | Explain the operation of Pole changing method of speed control. | CO3 | 10 |
| 7. |  | Describe the slip power recovery control of slip ring induction motor. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Design a cycloconverter fed induction motor drive for variable frequency operation. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | With neat diagrams, explain the construction and operation of variable reluctance stepper motor. Mention its advantages and disadvantages. | CO3 | 20 |

ALL THE BEST