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 :** | **14ME2024** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MECHATRONICS** | **Max. marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | Course  Outcome | Marks |
| 1. |  | Discuss the block diagram for a general measuring system with an application of a filled thermal system. | CO2 | 20 |
| (OR) | | | | |
| 2. | a. | Explain the working principle of hydraulic actuation system with a neat sketch. | CO2 | 15 |
| b. | Draw the block diagram of basic a pneumatic system. | CO2 | 5 |
| 3. |  | Describe any two electromechanical drives in detail. | CO2 | 20 |
| (OR) | | | | |
| 4. | a. | Describe the working principle of stepper motor with a neat diagram. | CO2 | 15 |
|  | b. | How will you specify a stepper motor ? | CO2 | 5 |
| 5. | a. | Enumerate the following: Light Sensors and Temperature Sensors. | CO1 | 10 |
|  | b. | Explain the working principle of a analog to digital converter. | CO1 | 10 |
| (OR) | | | | |
| 6. |  | Describe how the Relay and Solinoid works with neat diagrams. | CO2 | 20 |
| 7. | a. | Explain the function of microcontroller with block diagram. | CO2 | 15 |
|  | b. | How does a microcontroller differ from the microprocessor? | CO2 | 5 |
| (OR) | | | | |
| 8. |  | Draw the architecture of a PLC and explain its components in detail. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Elaborate the historical development of mechatronics with neat sketch. | CO1 | 15 |
|  | b. | List various applications of Mechatronics systems. | CO1 | 5 |

ALL THE BEST