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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14EI3030** | **Duration :** | **3hrs** |
| **Sub. Name :** | **AUTOMOTIVE SENSORS AND INTELLIGENT SYSTEMS** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1 | a. | Differentiate between active and passive sensors and discuss its application in automobiles. | CO1 | 10 |
| b. | Briefly explain the use of resistive and capacitive sensors used in automobiles. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Elaborate on five difffernt areas of automation in automobiles. | CO1 | 10 |
| b. | Explain the criteria for selection of sensors. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Elaborate the approaches to benchmarking process in deploying different sensors. How does the design affect the performance of the system. | CO1 | 20 |
| **(OR)** | | | | |
| 4. | a. | Explain the need for sensor networks in automobile automation. | CO1 | 10 |
| b. | With neat diagram, explain the architecture of Embedded sensor network. | CO1 | 10 |
|  |  |  |  |  |
| 5. |  | Describe the basic models of neural network and also give the comparison between the Biological Neuron and Artificial Neuron based on any two criteria. | CO2 | 20 |
| **(OR)** | | | | |  | | (OR) |
| 6. | a. | Elaborate on the concept of fuzzy relations and its methods with examples. | CO1 | 10 |
| b. | Discuss how the Genetic Algorithm differs from other traditional search methods. | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Explain the architecture and algorithm of back propagation network with a neat diagram. | CO3 | 20 |
| **(OR)** | | | | |  | | (OR) |
| 8. |  | Elaborate on the architecture and training algorithm of Kohenen’s Self Organizing Neural Network with necessary diagrams. | CO3 | 20 |
|  | | **Compulsory:** |  |  |  |
| 9. |  | Demonstrate a case study on the optimization of travelling salesman problem using Genetic algorithm approach. | CO3 | 20 |