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

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17EE3025** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ELECTRIC AND HYBRID VEHICLES** | **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. | Brief about the historical development of Electric and Hybrid Vehicle. | CO1 | 15 |
| b. | List out the commonly used batteries for EV. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Explain the configuration and control strategy of fuel cell hybrid drive train. | CO1 | 15 |
| b. | Discuss about the various configurations of Electric Vehicle. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Explain the two-quadrant operation of chopper based DC Motor with necessary diagrams and waveforms. | CO2 | 15 |
| b. | Give the details of control strategies of DC chopper circuit. | CO1 | 5 |
| (OR) | | | | |
| 4. |  | Describe the working of switched reluctance motor (SRM) drives with neat diagrams and waveforms. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Elucidate the Tractive Effort of a vehicle with neat diagrams. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Demonstrate the aero dynamic and rolling resistance design consideration of vehicle. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Explain in detail about Modelling of Vehicle Acceleration. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Describe the modeling of DC Motor Controller. | CO3 | 10 |
| b. | Discuss the necessity of Battery Modelling. | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Illustrate the case studies of Honda Insight Hybrid Vehicle. | CO3 | 20 |