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



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

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| **Code :** | **16EI2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **AUTOMOTIVE ELECTRONICS** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | List the various sensors used for electronic fuel control. With neat block diagram, explain the components used and conﬁguration of an electronic fuel control system. | CO1 | 20 |
| **(OR)** | | | | |
| 2. | a. | Illustrate the schematic diagram of exhaust gas recirculation actuator and explain its working. | CO1 | 10 |
| b. | Explain electronic ignition subsystem with neat block diagram. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Identify the automotive functions that surround the engine. Discuss about the major controller inputs from the engine and major controller outputs to engine. | CO2 | 20 |
| **(OR)** | | | | |
| 4. |  | Select a suitable starting motor for cranking the engine of a vehicle. Illustrate and explain the load and the motor characteristics for this application. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Explain the operation of Digital Cruise control system with the help of a relevant diagram. Explain the five modes of Engine control. Also frame the conditions of closed loop for a sudden uphill with same load. | CO2 | 20 |
| **(OR)** | | | | |
| 6. | a. | Elaborate antilock braking system with relevant diagram. | CO3 | 10 |
| b. | Describe the operation of collision avoidance radar warning systems. | CO3 | 10 |
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| 7. |  | Compare the conventional ignition system with the solid state ignition system and with diagram explain about the distributor less ignition system. | CO2 | 20 |
| **(OR)** | | | | |
| 8. | a. | With suitable diagram, elaborate the working of GPS based Navigation System. | CO3 | 10 |
| b. | Summarize the automotive communication protocols Local Interconnected Network (LIN) and Controller Area Network (CAN). | CO3 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Suggest few ways by which the headlight glares can be avoided. | CO3 | 10 |
| b. | Explain the various blocks associated with an automated system for rain sensing wiper system. | CO3 | 10 |