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



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

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| **Code :** | **18EI3010** | **Duration :** | **3hrs** |
| **Sub. Name :** | **EMBEDDED AUTOMOTIVE SYSTEMS** | **Max. marks :** | **100** |

**ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Discuss in detail about the Electronic ignition system used in automobile. | CO1 | 8 |
| b. | Compare the open and closed loop fuel control system with suitable example. | CO1 | 8 |
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| 2. | a. | Write short notes on crank angle position sensors. | CO1 | 8 |
| b. | Identify and explain the sensor used for measuring mass flow rate of air entering a fuel-injected internal combustion engine. | CO1 | 8 |
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| 3. | a. | With the aid of a neat sketch explain the working of Proton exchange membrane fuel cell. | CO2 | 10 |
| b. | Discuss how the Hydrogen Production and storage are important to automobile. | CO2 | 6 |
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| 4. | a. | Demonstrate the implementation of Vehicle cruise control with neat diagram. | CO3 | 8 |
| b. | Explain in detail about the anti-locking braking system in automobile. | CO3 | 8 |
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| 5. | a. | With relevant diagrams briefly explain the signal transfer Using CAN protocol. | CO4 | 8 |
| b. | Discuss about the application of modern information and communications technologies in a transportation management system. | CO4 | 8 |
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| 6. | a. | Demonstrate the implementation of automatic wiper control System with neat Sketch. | CO6 | 8 |
| b. | Discuss about the electronic steering control with suitable block diagram. | CO5 | 8 |
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| 7. | a. | With neat sketch explain construction, operation and working principle of suspension system used in Automobile. | CO1 | 8 |
| b. | Discuss in detail about the operation of catalytic converter with a neat diagram. | CO1 | 8 |
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| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | Explain the working of temperature gauges and state the steps involved to avoid overheating of engine in vehicle. | CO6 | 10 |
| b. | Discuss about the On board diagnosis of vehicles electronic units in detail. | CO6 | 10 |