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



**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **14EI2018** | **Duration :** | **3hrs** |
| **Sub. Name :** | **AUTOMOTIVE INSTRUMENTATION** | **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. | Demonstrate the implementation of Digital Engine Control System with neat Sketch. | CO2 | 10 |
| b. | Write short notes on:  i. Altitude sensor. ii. Throttle position sensors. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Discuss in detail about the operation of 4 stroke petrol engine with a neat diagram. | CO2 | 10 |
| b. | Discuss how the following terms are related to engine performance.  i. Power ii. BSFC iii. Volumetric Efficiency | CO1 | 10 |
| 3. | a. | Classify and elaborate the various components in a starting system with a neat sketch. | CO1 | 15 |
|  | b. | Define stochiometric ratio and its value for perfect, lean and rich mixtures. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | Explain in detail about the Most and Flex Ray Protocol. | CO3 | 10 |
|  | b. | Write about the various components of an electronically controlled engine with relevant block diagram | CO2 | 10 |
| 5. | a. | Describe the operation of an air conditioning System in automotive with a neat sketch. | CO2 | 10 |
|  | b. | With relevant diagrams briefly explain the signal transfer Using I2C. | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Discuss in detail about the operation of Air bag system with a neat diagram. | CO2 | 10 |
|  | b. | Explain in detail about the manual transmission system. | CO2 | 10 |
| 7. | a. | With neat sketch explain the working of wiper system of an automobile. | CO2 | 10 |
|  | b. | With a neat diagram discuss about the Electronic Steering system and their importance in driving operation. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | Describe the various steps involved in installing navigation system in automotive. | CO3 | 10 |
|  | b. | Discuss in detail about the operation of traction and braking control with a neat diagram in automotive. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | Discuss in detail about the digital cruise control configuration with the neat sketch. | CO2 | 20 |

ALL THE BEST