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

G:\logo and QP Template\logo 3 Feb 2018 final.tif

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

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Give the necessity of measurement of air flow in cars. Discuss any two methods used to measure the air flow. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Explain with a neat diagram the construction and working of engine speed sensor. | CO1 | 10 |
| b. | Elaborate on the measurement of Crank angle measurement. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | List the different types of temperature sensor available in the market for the use of automotive. Explain any two types and how it is used in the cars. | CO1 | 20 |
| (OR) | | | | |
| 4. | a. | Sketch and explain the working of solenoids and Relays in vehicle. | CO1 | 10 |
| b. | Explain the principle and working of Oxygen Sensor and mention the uses of the Oxygen Sensor in automotive vehicles. | CO1 | 10 |
|  |  |  |  |  |
| 5. |  | Draw the block diagram of starting system and explain each block in detail. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Analyse the role of Anti Lock Braking system in cars and explain all the components involved in the system. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | With a neat diagram discuss about the Electronic Steering system and their importance in driving operation. | CO2 | 12 |
| b. | Explain the low tyre pressure alert system | CO2 | 8 |
| (OR) | | | | |
| 8. | a. | Integrated engine control system improves the performance of the vehicle – Justify. | CO3 | 16 |
| b. | List the advantages of electronic ignition systems. | CO2 | 4 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the technique used for error management in CAN Protocol. | CO3 | 10 |
| b. | Explain the communication cycle of the FlexRay Protocol with the required diagrams. | CO3 | 10 |