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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

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

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| **Code :** | **14EI3031** | **Duration :** | **3hrs** |
| **Sub. Name :** | **AUTOMOTIVE PROTOCOLS AND TELEMATICS** | **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. | Describe telematics system architecture in detail. | CO1 | 10 |
| b. | Explain any two standards followed by Telematic industry. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | What is telematics and explain various services rendered by telematics. | CO1 | 10 |
| b. | Describe the main components of in-vehicle telematics control unit. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Discuss the significance of controller area network protocols in automotive industry. | CO2 | 10 |
|  | b. | What are HART communication protocols? Explain its operating modes and packet structure format. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Explain in detail Basic software module of AUTOSAR. | CO2 | 10 |
|  | b. | List the possible hardware and software source of error detected by Safety End to End Communication Protection Module. | CO2 | 10 |
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| 5. | a. | What are device net. Explain various types of messaging used in device net. | CO2 | 10 |
|  | b. | Suggest some methods to implement Actuator-Sensor Interface quickly and effectively. | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Discuss various components of Actuator-Sensor Interface. | CO3 | 10 |
|  | b. | Mention the challenges faced in designing VANET (Vehicular Adhoc Network) Routing Protocols for Vehicle to Vehicle Communication. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Discuss automotive bus system in detail. | CO1 | 10 |
|  | b. | Describe the architecture of control net used in automotive industry. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | Explain the hardware components of mobile mapping vehicle. | CO3 | 10 |
|  | b. | Discuss how multimedia networking helps in automotive applications. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | How vehicle is being tracked using Global Positioning System and explain the major constituents of the GPS-based tracking. | CO3 | 14 |
|  | b. | Distinguish between Active and passive tracking. | CO3 | 6 |

ALL THE BEST