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 :** | **14EC3048** | **Duration :** | **3hrs** |
| **Sub. Name :** | **EMBEDDED SENSOR NETWORKS** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | What are the components of sensor node? | CO1 | 10 |
| b. | Discuss the challenges related to the type of components used, with suitable examples. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Narrate the various stages involved in the design and implementation of wireless sensor network based applications with suitable examples. | CO1 | 10 |
| b. | How S-MAC remain energy aware medium access scheme? | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | In what way the latency caused by periodic sleep is improved in S-MAC? | CO1 | 10 |
|  | b. | Describe the working principles of ToA, TDoA and AoA schemes for estimating distance in wireless sensor networks. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | List out the various challenges of sensor databases. | CO2 | 10 |
|  | b. | Figure out the significant differences between the sensor data with other databases at logical level. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Establish that co-operation of sensors helps location tracking at network level. | CO2 | 10 |
|  | b. | Prove energy saving by the process of aggregation. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | What is the problem with high data rate? | CO2 | 10 |
|  | b. | Explain the functions of IEEE 802.11 and its power saving mode. | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | How OS formulates policy of transitioning between states based on observed events to maximize energy efficiency? | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Explain the role of frequency and voltage in active power management. | CO3 | 10 |
|  | b. | Discuss on ACPI. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Deliberate on the master and slave modes of Bluetooth. | CO3 | 10 |
|  | b. | With suitable diagrams, explain the two types of scatternets. | CO3 | 10 |

ALL THE BEST