

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 2725307

Date: 25-06-2014

Subject Name: Wireless Sensor Networks

Time: 02:30 pm - 05:00 pm

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

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|------------|------------|--|-----------|
| Q.1 | (a) | Describe the sensor network applications and design issues in detail? | 07 |
| | (b) | Describe in detail the sensor node architecture with suitable example? | 07 |
| Q.2 | (a) | What are optimization goals and evaluation metrics with proper illustration? | 07 |
| | (b) | What are network design principles? Explain with example? | 07 |
| | | OR | |
| | (b) | Detail about sensor network programming with example? | 07 |
| Q.3 | (a) | Discuss the fundamentals of MAC protocols? | 07 |
| | (b) | Explain schedule based MAC protocols for WSN? | 07 |
| | | OR | |
| Q.3 | (a) | Brief Sensor MAC layer Protocol and discuss few techniques to achieve energy efficiency? | 07 |
| | (b) | Discuss the IEEE 802.15.4 MAC-layer with case study? | 07 |
| Q.4 | (a) | Discuss the Routing challenges and design issues in WSN? | 07 |
| | (b) | Short notes on Location Based Routing Protocols? | 07 |
| | | OR | |
| Q.4 | (a) | Describe data centric addressing showing different types of messages being used during communication? | 07 |
| | (b) | Explain Directed diffusion protocol with suitable example? | 07 |
| Q.5 | (a) | Explain with example Cone-based topology control. What are the main goals and advantages of this method? | 07 |
| | (b) | Explain iterative multilateration in multihop environment? | 07 |
| | | OR | |
| Q.5 | (a) | Explain various mechanisms used by localization algorithms for measuring distance between nodes? | 07 |
| | (b) | Explain energy efficient dynamic power management in Wireless sensor networks? | 07 |
