

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E –IIst SEMESTER–EXAMINATION – JULY- 2012****Subject code: 1724102****Date: 09/07/2012****Subject Name: Wireless Ad hoc and Sensor Networks****Time: 10:30 am – 13:00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) 1. State comparisons between Cellular Network and wireless ad hoc network. (4)
 2. Explain power management in wireless ad hoc network in very brief. (3)
- (b) 1. Draw basic architecture of wireless sensor network and explain in brief. (4)
 2. Briefly explain one of the applications of mesh-based wireless sensor network. (3)
- Q.2** (a) 1. Draw the architecture of wireless sensor node and explain in brief. (4)
 2. List out various design constraints for wireless sensor networks (3)
- (b) 1. Draw OSI reference model of wireless sensor network and explain in brief. (4)
 2. Briefly explain term *fairness* in wireless sensor networks. (3)
- OR**
- (b) Briefly explain various methods to reduce collision in wireless sensor networks. (07)
- Q.3** (a) 1. Briefly explain Self-Organizing Medium Access Control protocol for wireless sensor networks. (4)
 Briefly explain schedule selection and Co-ordination in S-MAC
 2. (3)
- (b) 1. Briefly explain Low energy Adaptive Clustering Hierarchy Based routing technique in wireless sensor Network. (4)
 2. List out various routing strategies in wireless sensor Networks (3)
- OR**
- Q.3** (a) Write short note on IEEE 802.15.4 LR-WPANs (7)
 (b) 1. Briefly explain SPIN-BC protocol in wireless sensor networks (4)
 2. List out various drawbacks of flooding technique in wireless sensor networks. (3)
- Q.4** (a) State various problems which makes TCP and UDP unsuitable for wireless sensor network
 1. Briefly explain Congestion Detection and Avoidance algorithm with reference to wireless (4)
 2. sensor network (3)
- (b) 1. State functions of Network management protocol in wireless sensor networks. (3)
 2. Briefly explain localization in wireless sensor networks. (4)
- OR**
- Q.4** (a) 1. Write short note on PSFQ protocol with reference to wireless sensor networks. (4)
 2. Briefly explain ATP for wireless sensor network. (3)
- (b) 1. Write short note on network management architecture for wireless sensor networks. (4)
 2. Explain Active localization in wireless sensor networks (3)
- Q.5** (a) List out various threats which can affect the security of wireless sensor networks (7)
 (b) Briefly explain admission control in wireless sensor Network (7)
- OR**
- Q.5** (a) Briefly explain Predictive Congestion Control (7)
 (b) State problems of bootstrapping security in wireless sensor network. (7)
