

MANIPAL UNIVERSITY
SCHOOL OF INFORMATION SCIENCES

SECOND SEMESTER MASTER OF ENGINEERING - **ME** (EMBEDDED AND WIRELESS TECHNOLOGY)
DEGREE EXAMINATION – APRIL / MAY 2016

SUBJECT: EWT 610 – WIRELESS SENSOR NETWORKS

Saturday, April 30, 2016

Time: 10.00 – 13.00 Hrs.

Max. Marks: 100

1. With neat block diagram explain different architectures of a sensor network.
(10 marks)
2. Describe the applications of wireless sensor networks in Industrial process control, security and surveillance and home intelligence systems.
(10 marks)
3. Explain the transmission media factors influencing in the design of wireless sensor network.
(10 marks)
4. What are the most crucial points influencing PHY design in wireless sensor networks and describe some of the implications of these requirements
(10 marks)
5. With suitable flow diagram explain the skeleton of the different CSMA protocols
(10 marks)
6. Describe the implementations of the following protocols at the link layer
 - (i) Alternating bit ARQ protocol
 - (ii) Goback N ARQ protocol
(5+5=10 marks)
7. Explain the different address management tasks in wireless sensor networks
(10 marks)
8. With a neat sketch explain the operation of a pair-wise synchronization mechanism in a lightweight time synchronization (LTS) protocol
(10 marks)
9. What are the three main approaches exist to determine a node's position? Briefly describe them
(10 marks)
10. What are the fundamental operations of broadcasting, multicasting and geocasting? Explain about Blind Broadcast in wireless sensor networks?
(10 marks)
