B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023
Sixth Semester
Electronics and Communication Engineering
20ECEL602 – WIRELESS SENSOR NETWORKS
(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

Marks,
K-Level,CO

1. Categorize the topologies used in WSN. 2,K1,CO1
2. Differentiate between single hop and multi-hop networks. 2,K2,CO1
3. Define dynamic modulation scaling. 2,K1,CO2
4. Tabulate the hardware component of sensor node. 2,K1,CO2
5. Write the concept of wake up radio. 2,K1,CO3
6. Mention the advantages of Mediation device protocol. 2,K1,CO3
7. What is global addressing? 2,K1,CO4
8. Differentiate flooding and gossiping. 2,K2,CO4
9. Why is topology control necessary for WSN? 2,K2,CO5
10. What is sensor tasking? 2,K1,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Discuss enabling technologies in wireless sensor networks. 13,K2,CO1
    OR
    b) What are the different applications of wireless sensor networks in different fields? Explain in detail. 13,K2,CO1

12. a) Classify the sensor network scenario and illustrate with diagram. Also explain how mobility can appear in WSN. 13,K2,CO2
    OR
    b) Describe the Transceiver characteristics and structure used in the sensor node. 13,K2,CO2

13. a) Explain in detail low duty cycle MAC protocols. 13,K2,CO3
    OR
    b) Outline the low energy adaptive clustering hierarchy (LEACH) protocol for wireless sensor networks. 13,K2,CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create **11901**

14. a) Explain the various challenges of WSN routing protocols. 13,K2,CO4

OR

b) Describe the SPIN routing with the help of a neat diagram. Give its advantages and disadvantages. 13,K2,CO4

15. a) Explain the concept of localization and positioning in detail. 13,K2,CO5

OR

b) Discuss in detail the various algorithms of Time synchronization. 13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Examine the layers of operating system TinyOS that supports sensor network applications on Berkeley motes hardware platforms and demonstrate its Field Monitor application for sensing and sending measurements. 15,K3,CO6

OR

b) Discuss about the interface and configuration of the nesC language. 15,K3,CO6