Question Paper Code	12160

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 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. How does ad-hoc network differ from wireless networks? — *2,K2,CO1*
2. List the applications of WSN. — *2,K1,CO1*
3. State data dissemination. — *2,K1,CO2*
4. Define figure of merit. — *2,K1,CO2*
5. Give the demerits of Wake-up protocol. — *2,K1,CO3*
6. State few issues in the design of a MAC protocol. — *2,K2,CO3*
7. Write the three major tunable parameters for topology control in wireless sensor networks. — *2,K1,CO4*
8. Compare directed diffusion and IDSQ. — *2,K2,CO4*
9. List the components of node-level simulator. — *2,K1,CO5*
10. Mention the use of TOSSIM simulator in modeling WSN. — *2,K1,CO5*

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

11. a) Explain sensor node hardware components with neat diagrams. — *13,K2,CO1*

OR

   b) Examine the enabling technologies for wireless sensor networks. — *13,K2,CO1*

12. a) Describe the transceiver tasks and characteristics of a sensor node. — *13,K2,CO2*

OR

   b) Explain Protocol stack of WSN in detail with a neat diagram. — *13,K2,CO2*

13. a) Discuss the principle of Mediation Device protocol with a neat sketch. — *13,K2,CO3*

OR

   b) Evaluate the performance of MAC protocols for Wireless Sensor Networks and estimate the duty cycle. — *13,K2,CO3*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   ***12160***

14. a) Describe the various aspects and options for Topology control in WSN with relevant example protocols. *13,K2,CO4*

<div align="center">OR</div>

b) Explain how IDSQ algorithm dynamically querying sensors and route the data in WSN. *13,K2,CO4*

15. a) Explain how the Tiny-OS operating system supports resource constrained hardware platforms. *13,K2,CO5*

<div align="center">OR</div>

b) Discuss the challenges of sensor network programming. *13,K2,CO5*

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PART - C (1 × 15 = 15 Marks)

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16. a) Explain how an open-source network simulator can be used to simulate wireless/mobile networks and sensor networks. *15,K2,CO6*

<div align="center">OR</div>

b) Discuss the issues to be addressed using abstractions during the design of sensor network to ensure the correctness and efficiency of the system. *15,K2,CO6*