PEI6J005   WIRELESS & SENSOR NETWORK

University level: 80%

MODULE -I (12Hrs)

Sensor Network Concept: Introduction, Networked wireless sensor devices, Advantages of Sensor networks, Applications, Key design challenges.
Network deployment: Structured versus randomized deployment, Network topology, Connectivity, Connectivity using power control, Coverage metrics, and Mobile deployment.
Localization and Tracking: Issues and approaches, Coarse-grained and Fine-grained node localization. Problem formulations: Sensing model, collaborative localization.

MODULE -II (14 Hrs)

Tracking multiple objects: State space decomposition. Synchronization: Issues and Traditional approaches. Communication Protocols for Senor Networks: Application layer protocols for WSN, Transport Layer, Network Layer, Data Link Layer, and Physical Layer, Time synchronization. Wireless Characteristics: Link quality.

MODULE -III (10 Hrs)

Medium-access and sleep scheduling: Traditional MAC protocols, Energy efficiency in MAC protocols, Asynchronous sleep techniques, Sleep-scheduled techniques.
Energy-efficient and robust routing: Overview, Lifetime-maximizing energy-aware routing techniques, Geographic routing.

Text Books:

   1. Networking Wireless Sensors: BhaskarKrismachari, Cambridge University Press

References Books:

1.   *Wireless Sensor Networks: Edited by C.S Raghavendra, Krishna M, Sivalingam,Taieb Znati, Springer.*
2.   *Wireless Sensor Networks: An Information Processing Approach- by Feng Zhao, Leonidas Guibas, Morgan Kaufmann Series in Networking 2004.*
3.   *Wireless Sensor Networks: Technology, Protocols, and Applications: KazemSohraby, Daniel Minoli, TaiebZnati, Wiley Inter Science.*