PET7J007 WIRELESS SENSOR NETWORK 3-0-0

MODULE-I (8 Hours)

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, Mobile deployment.

MODULE-II (6 Hours)

Localization and Tracking: Issues and approaches, Problem formulations: Sensing model, collaborative localization. Coarse-grained and Fine-grained node localization. Tracking multiple objects.

MODULE-III (8 Hours)

Wireless Communications: Link quality, shadowing and fading effects

Medium-access and sleep scheduling: Traditional MAC protocols, Energy efficiency in MAC protocols, Asynchronous sleep techniques, Sleep-scheduled techniques, and Contention-free protocols.

MODULE-IV (6 Hours)

Routing: Metric-based approaches, Multi-path routing, Lifetime-maximizing energy-aware routing techniques, Geographic routing.
Sensor network Databases: Data-centric routing, Data-gathering with compression,

ADDITIONAL MODULE (Terminal Examination Internal) (8 Hours)

State space decomposition; Synchronization: Issues and Traditional approaches, Fine-grained clock synchronization, and Coarse-grained data synchronization; Querying; Data-centric storage and retrieval; the database perspective on sensor networks; Security: Privacy issues, Attacks and countermeasures.

Text Books

1) Wireless Sensor Networks: An Information Processing Approach- by Feng Zhao, Leonidas Guibas , Morgan Kaufmann Series in Networking 2004.

References Books

1) Networking Wireless Sensors: Bhaskar Krismachari, Cambridge University Press
2) Wireless Sensor Networks: Edited by C.S Raghavendra, Krishna M, Sivalingam, TaiebZnati, Springer.
3) Wireless Sensor Networks: Technology, Protocols, and Applications: Kazem Sohraby, Daniel Minoli, TaiebZnati, Wiley Inter Science.