

**PCSS31A / PECS311 - Wireless Sensor Networks**

P. Pages : 1

Time : Three Hours



**GUG/W/24/11043**

Max. Marks : 70

- Notes :
1. All questions carry marks as indicated.
  2. Assume suitable data wherever necessary.
  3. Illustrate your answers wherever necessary with the help of neat sketches.
  4. Solve **any five** questions.

1. a) What are the requisites for robust wireless sensor networks? Discuss in brief. 7  
b) Discuss the difference between MANETs and WSN's. 7
2. a) What are the factors to be considered for physical layer design? 7  
b) Describe the low duty cycle protocols and wake up concepts in SMAC protocols. 7
3. a) Describe the process of address and name management in wireless sensor networks. 7  
b) Explain Geographic routing in detail. 7
4. a) What is the need of gateways in WSN? Hence explain WSN to internet communication and internet to WSN communication. 7  
b) What are the ways and means to reduce energy consumption in WSN's? 7
5. a) What are Cluster? How the clusters formed. Describe hierarchical network formed by clustering. 7  
b) Discuss the design principles in WSN. 7
6. a) Describe the most commonly considered aspects of energy efficiency. 7  
b) What are the factors that influence time synchronization in WSN's? Hence describe tight weight time synchronization protocols. 7
7. a) Describe the three categories of sensor nodes. 7  
b) What is nodal level software platform? Explain TinyOS with example. 7
8. Write a short note on **any two**. 14
  - a) Energy Efficiency routing.
  - b) Node level Simulator.
  - c) State center programming.
  - d) Sensor tracking and control.

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