

B.E. Instrumentation Engineering (Model Curriculum) Semester-VII
IN704M / IN704M1 - Elective - Wireless Sensor Networks

P. Pages : 2

Time : Three Hours



GUG/S/25/14259

Max. Marks : 80

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- Notes : 1. All questions carry marks as indicated.
2. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Draw block diagram of wireless sensor Mode architecture and describe in details. **8**
b) Why multihop data transmission technique is used in WSN, illustrate with diagram. **8**

OR

2. a) Describe the following terminology used in WSN **8**
i) Network topology. ii) Sensor Mode.
iii) In network processing. iv) Dynamic Network.
b) Describe how WSN is deployed for agriculture forming. **8**
3. a) Draw generic protocol stack for WSN and describe functions of every layer. **8**
b) Illustrate why WSN is energy constraint network, what are its design requirements. **8**

OR

4. a) How WSN is Data Centric in nature. Describe Data Centric Protocol for WSN. **8**
b) Draw block diagram for software model of sensor node and describe its functionality. **8**
5. a) Illustrate the utility of Bluetooth Wireless Communication technology, how it is useful for wireless sensor networks. **8**
b) Describe the following modulation technique **8**
i) ASK ii) FSK

OR

6. a) How ZigBee wireless communication technology is useful for WSN describe its main features. **8**
b) In commercial wireless communication technologies it is desirable to have maximum bandwidth efficiency with sophisticated modulation methods, how such technologies are adopted for WSN. **8**
7. a) Draw open systems interconnection reference model and data link layer architecture and describe its functions. **8**

- b) Describe performance metrics for MAC protocol. How MAC protocol is adoptable for WSN. **8**

OR

- 8.** a) Describe the performance requirements parameters of MAC protocols – **8**
i) Delay ii) Throughput
iii) Robustness iv) Scalability

- b) Illustrate fixed assignment protocol- FDMA. **8**

- 9.** a) State the basic middleware functions for WSN. **8**

- b) Describe in brief Adaptive Middleware Framework (AMF) architecture. **8**

OR

- 10.** a) Describe how Middleware Service for Monitoring (MSM) is useful in WSN. **8**

- b) Illustrate different data storage schemes that are used in WSN. **8**
