M.Tech. (Electronic Engineering (Communication) / VLSI / Electronics Engineering) Third Semester (C.B.C.S.)

Elective-IV (Open): Wireless Sensor Networks

P. Pages : 1 **NIR/KW/18/4306/4349/4328**

Time : Three Hours * 2 1 2 2 * Max. Marks : 70

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Due credit will be given to neatness and adequate dimensions.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.
10. Use of non programmable calculator is permitted.

1. Explain the basic Wireless Sensor technologies in detail. Also Explain the applications of it in detail. **14**

OR

2. a) What are the challenges for wireless sensor Networks. **7**

b) Explain the Network characteristics and design objectives of Wireless Sensor Network. **7**

3. a) Discuss in details about Energy Consumption of Sensor nodes. **7**

b) Explain Single node architecture of wireless Sensor network. **7**

OR

4. a) Write short notes on figures of merit and optimization Goals in WSN. **7**

b) Explain in short on Gateway concepts. **7**

5. a) Explain S-MAC protocols in details. **7**

b) Explain the following terms related to wireless technologies. **7**
i) Zigbee ii) IEEE 802.15.4.

OR

6. a) Explain Unicast geographic routing in detail. **7**

b) Explain the functionalities of Routing Protocols in detail. **7**

7. a) Write short notes on: **14**
i) Clustering ii) Network time protocols.

OR

8. a) Explain Reference- Broadcast synchronization (RBS) in detail. **7**

b) Explain the concept of sensor tasking & control. **7**

9. Write short notes on: **14**
i) Tiny aggregation ii) Data aggregation

OR

10. a) Explain Query Processing in Sensor. **7**

b) Explain Direct Diffusion methods. **7**

****