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B.E. (Computer Science & Engineering) Eighth Semester (C.B.S.)

Elective-IV : Advanced Wireless Sensor Network

P. Pages : 2 **NRT/KS/19/3696**

Time : Three Hours * 0 7 0 0 * Max. Marks : 80

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. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What are the challenges in WSNs. Explain with characteristics requirements. **6**

b) Explain hardware components of sensor node with diagram. **7**

OR

2. a) Differentiate between mobile ad hoc network and wireless sensor network. **6**

b) Explain energy consumption of sensor node in detail. **7**

3. a) Write a short note on- **6**
i) Concurrent programming
ii) Event based programming

b) Explain the structure of operating system and also explain protocol stack in detailed. **8**

OR

4. a) Explain DPM (Dynamic Power Management) concept in detail. **6**

b) Explain nesC with defining modules and interface component give example. **8**

5. a) Explain how the communication is performed in sensor network (gateway concept). **4**

b) Explain the differents types of Mobility. **3**

c) Explain requirements and design constraints of wireless MAC protocol? **6**

OR

6. a) Explain low duty cycle protocol and wakeup concepts. **7**

b) Explain various optimization Goals of WSN. **6**

7.	a)	What are the different name and address management task in WSNs.	**6**
	b)	What is data aggregation? What are the metrices used for data aggregation in WSN.	**7**

OR

8.	a)	Explain how the cluster communicate? Explain the concept to construct independent set in WSNs.	**7**
	b)	Explain Geographic Adaptive Fidelity (GAF) protocol in detail.	**6**
9.	a)	Explain broadcast and multicast routing in WSNs.	**6**
	b)	Draw and explain an overview possible multicast approaches used in WSN.	**7**

OR

10.	a)	Explain the concept of content based networking and forwarding with an example.	**7**
	b)	Explain how the efficiency of data aggregation can be measured.	**6**
11.	a)	Explain advanced in network processing concept in detail.	**7**
	b)	What are the security consideration in wireless sensor network.	**7**

OR

12.	a)	Write a short note on **any three**.	**14 (5+5+4)**

i) Denial of service attacks.

ii) Syndrome coding.

iii) Target detection & Tracking.

iv) Localized edge detection.

v) Contour/Edge detection.

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All our dreams can come true if we have the courage to pursue them.

~ Walt Disney