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B.E. (Information Technology) Eighth Semester (C.B.S.)

Elective-IV : Wireless Sensor Networks

P. Pages : 2 **NRT/KS/19/3709**

Time : Three Hours * 0 8 2 2 * 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. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What are design challenges of WSN? Explain quality service challenges in WSN. **8**

b) List and explain the characteristics of a network. **6**

OR

2. a) Discuss various sensor network architectural elements in detail. **6**

b) Write a short note on WSN standards **any one.** **8**
i) IEEE 802.15.4 ii) Zig-bee

3. a) Give the classification of wireless sensor network. **7**

b) Draw and explain the structure of protocol stack for WSN. **6**

OR

4. a) Discuss WSN architecture. What are the differences of architectures between OSI, WLAN and WSN? **7**

b) With required diagram explain key issues in sensor node structure **6**

5. a) Explain MAC layer related sensor network properties. **6**

b) Explain S-MAC, DS-MAC and MS-MAC. **7**

OR

6. a) What is medium access control? Where is it situated? Give the function of MAC protocol. **6**

b) Briefly explain IEEE 802.15.4. MAC protocol and explain whether the MAC protocols of 802.11 & Bluetooth be used for WSN? Justify. **7**

7.	a)	Explain in detail about geographical routing.	**7**
	b)	Explain about the various highest level design issues.	**7**

OR

8.	a)	Write a short note on i) Low energy adaptive routing ii) Flooding	**14**
9.	a)	Explain the traditional transport protocol in detail.	**7**
	b)	Explain why TCP does not work well in WSN.	**6**

OR

10.	a)	What do you mean by Authenticity? Explain message authentication code and signature.	**7**
	b)	Give the design of transport protocol.	**6**
11.	a)	Discuss the traditional network management models.	**7**
	b)	Discuss the design issues involved in network management.	**6**

OR

12.	a)	Explain WSN management models.	**7**
	b)	How is Tiny OS different from mate OS and magnet OS? What are the main features of Tiny OS?	**6**

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The secret of getting ahead is getting started.

~ Mark Twain