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

Elective-IV : Wireless Sensor Networks

P. Pages : 2 **AHK/KW/19/2473**

Time : Three Hours 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 QoS challenges. **7**

b) What is wireless sensor networks? How it is different from traditional networks? **6**

OR

2. a) How is WSN configured? **7**

b) Which network protocol does WSN devices use? Explain in detail. **6**

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

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

OR

4. a) With required diagram explain single node architecture (software and hardware) of WSN. **7**

b) Elaborate the requirement and design constraints for wireless MAC protocol. **6**

5. a) Explain MAC layer related sensor network properties. **7**

b) Explain S – MAC, DS – MAC and MS – MAC in detail. **7**

OR

6. Write a short note on **any four.** **14**

i) Bit Slices

ii) Prefetching Micro Instruction

iii) Emulation

iv) Micro program sequencing

v) Vertical instruction format

7. a) Explain detail about geographical routing. 6

b) What do you mean by flooding? Suggest some method to replace flooding. 7

OR

8. a) Discuss problems in data dissemination and gathering in WSN. 7

b) Write a short note on : 6

Low Energy adaptive routing

9. a) Explain how transport protocol is designed. 6

b) Explain about traditional transport protocol in detail. 7

OR

10. Write a short note on

i) Broadcast and multicast authentication 7

ii) Signature 6

11. a) Discuss the design issues involved in network management. 7

b) Explain the management architecture : MANNA. 7

OR

12. Write a short note on **any three.** 14

i) Tiny OS

ii) Design issue of OS in WSN.

iii) Magnet OS

iv) WSN management model.

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