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

Elective – IV : Wireless Sensor Networks

P. Pages : 2 **TKN/KS/16/7712**

Time : Three Hours * 0 7 4 7 * 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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) List and explain the characteristics of a network. **5**

b) Elaborate in detail the various applications of network. **9**

OR

2. a) Discuss various sensor network architectural elements in detail. **5**

b) Write a short note on WSN standards **9**
i) IEEE 802.15.4 ii) Zig-bee.

3. a) Explain with neat sketch the structure of sensor node. **5**

b) Draw and explain various sensor network architectures in detail. **8**

OR

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

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

5. a) What is medium access control? Where is it situated? Give the functions of MAC protocol. **5**

b) Explain the following contention based protocols. **5**
i) CSMA ii) ALOHA.

c) Illustrate with neat sketch the hidden terminal problem in CSMA. **3**

OR

6. a) Write a note on following **any three.** **13**
i) S-MAC ii) Traffic adaptive medium access.
iii) DS-MAC iv) Self-organizing MAC.

7. a) What do you understand by data dissemination & gathering. **3**

b) Discuss various routing challenges and design issues involved in WSN. **7**

c) Explain in short flooding and its variants. **3**

OR

8. Write short note on. **13**
i) Low energy adaptive routing.
ii) Geographical routing.

9. a) Explain the traditional transport protocol in detail. **7**

b) Give the design of transport protocol. **7**

OR

10. a) Write a note on the following **any three** **14**
i) Authenticating public key
ii) Broadcast authentication.
iii) Multicast authentication.
iv) Signature.

11. a) Discuss the traditional network management models. **7**

b) Discuss the design issues involved in network management. **6**

OR

12. a) Explain the management architecture: MANNA. **7**

b) Write short notes on: **6**
i) Tiny OS
ii) Mate OS
iii) Magnet OS

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