Exam.Code:0919
Sub. Code: 33463

2076
B.E. (Computer Science and Engineering)
Seventh Semester
CS-704D: Wireless Sensor Network

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting two questions each from Section B-C.

x-x-x

SECTION-A

Q1. a) Explain the characteristics of wireless channel.
b) What are the hardware components of a sensor?
c) Why is Wake-Up Radio Needed?
d) What is the working principle of traingulation in WSN?
e) What are efficient programming techniques for implementation of sensor networks? 5x2

SECTION-B

Q2. Explain and draw in detail the complete architecture of Mobile Adhoc Networks along with working of all software and hardware components. 10

Q3. Discuss the design considerations of a single sensor node in a Wireless Sensor Network. How do cost, size, memory, processing power, and energy influence node design? Also explain the role and requirements of operating systems. 10

Q4. Explain the working of Sensor-MAC protocol. Discuss its features, advantages, disadvantages and applications. 10

SECTION-C

Q5. Explain the concept of clustering in WSNs. Discuss the roles of cluster heads, cluster members and the advantages of clustering. Also compare centralized and distributed clustering algorithms with suitable examples. 10

Q6. What are the different techniques used to improve Quality of Service in WSN? Explain traffic prioritization, congestion control, load balancing and resource reservation. 10

Q7. Write short notes on:
(i) Node level software platforms
(ii) State-centric programming 10

x-x-x