A

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER M.TECH DEGREE EXAMINATION, DECEMBER 2017

Computer science and Engineering
(Computer Science and Engineering, Information Security)

01CS7157 : Ad-hoc and Sensor Networks (Elective IV)
Answer *any two full* questions from *each* part
Limit answers to the required points.

Max. Marks: 60   Duration: 3 hours

PART A

1.	a.	High-frequency X-rays and Gamma rays are not normally used for wireless communication. Explain why.	3
	b.	What are the functional difference between data gathering and data dissemination in wireless sensor networks. Explain efficient algorithms for implementing data gathering and dissemination .	6
2.	a.	What are the advantages of a clustered architecture over a layered architecture in a sensor network? Consider the third iteration of LEACH protocol. If the desired number of nodes per cluster is 10, what is the threshold calculated for a node during its random number generation?	4
	b.	Explain the methods used to improve the capacity of cellular networks.	5
3.	a.	Explain the characteristics of wireless channels .	4
	b.	Discuss various mechanism for location discovery in sensor networks.	5

PART B

4.	a.	Explain how s-mac protocol reduces energy wastage in wireless sensor networks.	3
	b.	List the characteristics of an Ideal Routing Protocol for Ad Hoc Wireless Networks.	3
	c.	What are the advantages and disadvantages of DSR protocol.	3
5.	a.	Explain how the performance of MACAW is improved when compared to the MACA protocol.	5
	b.	Explain the flow of control packets in the route establishment of DSR protocol.	4
6.	a.	Differentiate table driven and on demand protocol with the help of example topology.	4
	b.	Compare the pros and cons of using scheduling-based MAC protocols over reservation-based MAC protocols.	5

PART C

7.	a.	Explain Flexible QoS Model for Mobile Ad-Hoc Networks.	6
	b.	Discuss various battery scheduling techniques.	6
8.	a.	Discuss QoS Support Mechanisms of IEEE 802.11e.	6
	b.	Explain the classification of energy management schemes.	6
9.	a.	Briefly explain the active and passive network security attacks in Ad-hoc wireless networks.	6
	b.	Discuss the issues and challenges in providing qos in Ad-hoc wireless networks.	6