Total number of printed pages: 2

UG/7th/UCSE716

2024

Adhoc and Sensor Network

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	1. What is an Adhoc network? Describe the main characteristics of Adhoc networks.	10
	b)	Explain the concept of mobile Adhoc networks (MANETs). What are the primary applications of Adhoc networks?	10
2	a)	How do Adhoc networks differ from traditional wireless networks? What are the key challenges in designing Adhoc networks?	10
	b)	What are the main objectives of MAC protocol, and different classes of MAC protocol? Explain TDMA/FDMA/CDMA approach.	10
3	a)	What is the IEEE 802.11 standard, and how is it used in Adhoc networks? Explain the concept of carrier sense multiple access with collision avoidance (CSMA/CA).	10
	b)	What is the importance of routing in Adhoc networks? Describe the different types of routing protocols used in Adhoc networks.	10
4	a)	What is the difference between proactive and reactive routing protocols? Explain the functioning of the Adhoc On-Demand Distance Vector (AODV) routing protocol.	10
	b)	How does mobility impact the performance of Adhoc networks? Describe the concept of quality of service (QoS) in Adhoc networks.	10
5	a)	Describe the main components of a sensor node. What are the primary applications of wireless sensor networks?	10
	b)	Explain the concept of data aggregation in WSNs. What are the key challenges in designing WSNs?	10
6	a)	Describe the concept of event-driven communication in WSNs. Explain the role of clustering in WSNs.	10
	b)	How does mobility impact the performance of WSNs? Explain with an example.	10

7	a)	Explain the working principle of SPIN protocol with a diagrammatic illustration and list SPIN family protocol.	10
	b)	Explain the working principle of S-MAC protocol with an example and diagrammatic illustration.	10

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