

Programme(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)	What is an Adhoc network? How do Adhoc networks differ from traditional wireless networks?	10
	b)	Explain the concept of cellular communication. What are the primary applications of the 5G cellular network?	10
2	a)	What are the key challenges of Mobile Adhoc networks? Explain with an example.	10
	b)	What are the main objectives of MAC protocol? Explain TDMA/FDMA/CDMA approach.	10
3	a)	What are different classes of MAC protocol? Explain the concept of carrier sense multiple access with collision avoidance (CSMA/CA).	10
	b)	Explain Hidden Terminal Problem and solution to address the problem.	10
4	a)	What is the importance of routing in Adhoc networks? Describe the different types of routing protocols used in Adhoc networks.	10
	b)	What is the difference between proactive and reactive routing protocols? Explain the functioning of the DSDV routing protocol.	10
5	a)	Describe the main components of wireless sensor networks and explain primary applications of wireless sensor networks.	10
	b)	What are the key challenges in designing WSNs? Explain the problems at the MAC layer of WSN.	10
6	a)	Describe the data communication model in WSNs. Explain the role of each model with an example.	10
	b)	What are the key issues of flooding approach in WSNs? Explain with examples.	10
7	a)	Explain the working principle S-MAC and SPIN protocol with examples and diagrammatic illustrations.	20