Q. Code:484287

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Eighth Semester

CS18012 – MOBILE ADHOC NETWORKS

(Mechanical Engineering)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Able to analyse the challenges and design issues in mobile adhoc networks.	**3**
CO 2	Acquires knowledge on protocols used at the MAC layer and scheduling mechanisms.	**2**
CO 3	Able to understand the types of routing protocols used for unicast and multicast routing.	**2**
CO 4	Examine the network security solution and routing mechanism.	**3**
CO 5	Able to understand the energy management schemes and Quality of service solution in adhoc networks.	**2**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Differentiate an adhoc network and a cellular network with respect to bandwidth usage and cost effectiveness?	**1**	**2**
2.	What are some applications of adhoc networks?	**1**	**2**
3.	Enumerate the significance of MAC protocols.	**2**	**2**
4.	What are the different types of MAC protocols and how are they classified?	**2**	**2**
5.	Illustrate the hidden and exposed terminal issues in wireless networks.	**3**	**2**
6.	Explain the functionalities associated with multicast routing protocols.	**3**	**2**
7.	Compare and contrast AODV and DSR protocols in secure routing?	**4**	**3**
8.	Identify various types of network security attacks and their implications?	**4**	**3**
9.	How are QoS approaches classified?	**5**	**2**
10.	Why is energy management essential in adhoc wireless networks?	**5**	**2**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	Examine, in depth, the diverse applications facilitated by adhoc wireless networks.	**(14)**	**1**	**3**
	(OR)			
(b)	Evaluate the intricate design challenges faced in formulating MAC protocols for adhoc wireless networks.	**(14)**	**1**	**3**
12. (a)	Interpret the mechanics of contention-based protocols featuring reservation mechanisms, with necessary diagrams.	**(14)**	**2**	**2**
	(OR)			
(b)	Describe in detail about MAC Protocol that use directional antennas.	**(14)**	**2**	**2**
13. (a)	Illustrate the operational principles of hierarchical routing protocols with a neat diagram.	**(14)**	**3**	**2**
	(OR)			
(b)	Explain the principles of mesh-based routing protocols with suitable diagram.	**(14)**	**3**	**2**
14. (a)	Examine the issues and challenges posed by network security, considering their implications and potential solutions.	**(14)**	**4**	**3**
	(OR)			
(b)	Evaluate the significance and complexities of key management within network security,	**(14)**	**4**	**3**
15. (a)	Illustrate in detail how transmission power management employed to optimize energy usage in adhoc wireless networks?	**(14)**	**5**	**2**
	(OR)			
(b)	Describe the different network layer strategies for implementing quality of service (QoS) in adhoc wireless networks.	**(14)**	**5**	**2**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT

				LEVEL
16.	Interpret the principles guiding the design goals of a MAC protocol in adhoc wireless networks.	**(10)**	**2**	**5**