MANETS

Course code:	17TE7DCMAN		**Credits:**	03
L: P: T: S:	3:0:0:0		**CIE Marks:**	50
Exam Hours:	03		**SEE Marks:**	50

Course Objectives	
1.	Explore fundamental principal and various techniques of mobile Adhoc network
2.	To understand the Infrastructure less networks and their importance in the future directions for wireless communications
3.	To address security issues in Adhoc Wireless Network
4	Analyze different mobile Adhoc wireless network protocols
5	To analyze overall performance of MANET using Qos

Course Outcomes :After completion of the course, the graduates will be able to	
CO1	Explore fundamental concept and analyze various different MAC Protocols of MANET
CO2	To acquire knowledge of different routing protocols to address the issues of MANET
CO3	To analyze Issues in designing multicast routing protocols
CO4	To analyze design goals of transport layer protocol
CO5	To acquire knowledge on Issues and Challenges in Security Provisioning, Network Security Attacks and Key Management of MANET
CO6	To analyze issues and challenges associated with QoS and Energy management system

Mapping of Course outcomes to Program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS0 1	PSO 2	PSO 1
CO1	2	2	2	2	1	1		1				1	1	1	1

CO2	2	2	2	2	1	1		1				1	1	1	1
CO3	2	3	3	2	1	1		1				1	1	1	1
CO4	2	2	1	2	1	1		1				1	1	1	1
CO5	2	3	3	3	1	1		1				1	1	1	1

Course Content			
Module	**Contents**	**Hours**	**CO's**
1	**Ad-hoc Wireless Networks**: Introduction, Issues in Ad-hoc Wireless Networks, Ad-hoc Wireless Internet **MAC Protocols for Ad-hoc Wireless Networks**: Introduction, Issues in Designing a MAC Protocol, Design Goals of MAC Protocols, Classification of MAC protocols.	**8**	CO1
2	**Routing Protocols for Mobile Adhoc Wireless Networks**: Introduction, Issues in Designing a Routing Protocol for Ad-hoc Wireless Networks; Classification of Routing Protocols; Table Driven Routing Protocols; On-Demand RoutingProtocols, Hybrid Routing Protocol	**8**	CO2
3	**Multicast Routing in Mobile Ad-hoc Wireless Networks:** Introduction, Issues in Designing a Multicast Routing Protocol, Operation of Multicast Routing Protocols, An Architecture Reference Model for Multicast Routing Protocols, Classifications of Multicast Routing Protocols. **Tree-Based Multicast Routing Protocols:** Bandwidth-Efficient Multicast Routing Protocol, Multicast Routing Protocol Based On Zone Routing, Associativity-Based Ad Hoc Multicast Routing **Mesh-Based Multicast Routing Protocols:** On-Demand Multicast Routing Protocol	**8**	CO2 CO3
4	**Transport Layer and Security Protocols for Ad-hoc Networks**: Introduction, Issues in Designing a Transport Layer Protocol; Design Goals of a Transport Layer Protocol; Classification of Transport Layer Solutions; TCP over Ad Hoc wireless Networks; Other Transport Layer Protocols for Ad-hoc Networks; Security in Ad-hoc Wireless Networks, Issues and Challenges in Security Provisioning, Network Security Attacks and Key Management.	**8**	CO4
5	**Quality of Service in Ad-hoc Wireless Networks**: Introduction, Issues and Challenges in Providing QoS in Ad-hoc Wireless Networks, Classification of QoSSolutions, MAC Layer Solutions, Network Layer Solutions. **Energy ManagementAd-hoc Wireless Networks**: Introduction, Need for energy management in Ad-hoc Wireless Networks, Classification energy management in Ad-hoc Wireless Networks	**8**	CO5 CO6

CO6	2	3	3	3	1	1		1				1	1	1	1

Self-Study Component	
Module-1	Applications of MANET
Module-2	Study of Wireless routing protocol using NS2
Module-3	Study of weight based multicast protocol, Ad-hoc multicast Routing protocol utilizing Increasing ID-numbers Core-assisted Mesh protocol.
Module-4	Study of client server program in MANET using NS2
Module-5	Study of transmission and system power management schemes.
Note :No questions from illustrative examples and from Self-study component	

Text Books	
1.	C. Siva Ram Murthy & B. S. Manoj: Ad-hoc Wireless Networks, 2nd Edition, Pearson Education, 2011
References	
1	Ozan K. Tonguzand GianguigiFerrari: Ad-hoc Wireless Networks, John Wiley,2007.
2	XiuzhenCheng, Xiao Hung, Ding-Zhu Du: Ad-hoc Wireless Networking, Kluwer Academic Publishers,2004.

Assessment Pattern :

CIE : Continious Internal Evaluation Theory (50 Marks)

Bloom's Category	**Tests**	**Assignments**	**AAT1**	**AAT2**
Marks (Out of 50)	**30**	**10**	**05**	**05**
Remember				
Understand	5	2	1	1
Apply	10	2	1	1
Analyze	5	2	1	1
Evaluate	5	2	1	1
Create	5	2	1	1

***AAT: Alternate Assessment Tool**

SEE –Semester End Examination Theory (50 Marks)	
Bloom's Category	**Marks Theory (50)**
Remember	5
Understand	5
Apply	10