KLS Gogte Institute of Technology, Belagavi

Department of Information Science Engineering | Academic Year: 2020-21(ODD SEM)

Program: B.E (Information Science Engineering) | Semester: VII

IA Test – I

Course Title: Adhoc Sensor Networks | Code: 18IS744

Adhoc

Max. Marks: 25 marks | Duration: 1 Hr | Date: 11/12/2021

Instructions:
1. Answer any two 10M questions.5M question is compulsory
2. Draw diagrams neatly wherever applicable

Q. No.		[L]	[CO]	[PO]	[M]
1	Explain Dynamic Source Routing in detail with the help of neat diagrams.	2	1	1	10
2	Distinguish between Multipoint relays and Topology Broadcast based on Reverse Path Forwarding Protocol with the help of a neat diagram.	4	1	1	10
3	Discuss Destination -Sequenced Distance-Vector Protocol and Wireless Routing Protocol in detail.	2	1	1	10
4	Discuss the characteristics of Broadcasting in a MANET.	2	2	1	5

Unit 1

K.L.S Gogte Institute of Technology, Belagavi

Department of Information Science and Engineering Academic Year: 2022-23

Program: B.E Semester: VII

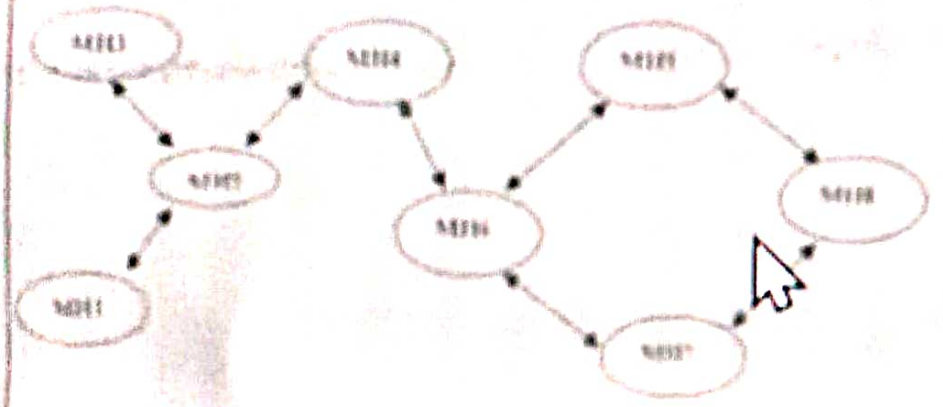
IA Test - I

Course Title: Adhoc Sensor Networks

Code: 18IS744 Max. Marks: 25

Date: 22/11/2022

Answer any FIVE questions

Q. No.		[LL]	[CO]	[PO]	
1	Explain the important characteristics of a MANET	1	1	1	
2	Apply Destination Sequenced Distance Vector routing protocol(DSDV) for the below ad hoc network and write the routing table at MH4 	3	2	2	
3	Discuss Topology based and Position based approaches for Routing over ad hoc networks	2	2	2	5
4	Discuss various Wireless technologies considering data rate, range and application focus	2	1	1	5
5	Explain the major Challenges in ad hoc sensor networking	2	1	2	5
6	Discuss Broadcast storm problem in a MANET.	2	2	2	5
7	Discuss in detail different applications of MANETs.	2	1	1	5

KLS Gogte Institute of Technology, Belagavi
Academic Year: 2022-23

Department of Information Science and Engineering
Program: B.E Semester: VII

IA Test – II

Course Title: Adhoc Sensor Networks
Code: 18IS744
Date: 30/12/2022

Max. Marks: 25

Answer any FIVE questions.

Q. No.		[L]	[CO]	[PO]	[M]
1	Explain TCP header format with a neat diagram,.	2	3	1	5
2	Explain the impact of MAC layer on TCP with a neat diagram.	2	3	1	5
3	Explain the application of sensors in Soil moisture monitoring.	2	5	4	5
4	A and B are the only two stations on Ethernet. Each has a steady queue of frames to send. Both A and B attempts to transmit a frame, collide and A wins first back off race. At the end of this successful transmission by A, both A and B attempt to transmit and collide. Calculate the probability that A wins the second back off race .	3	3	2	5
5	Compare Slow start and Congestion Avoidance congestion control algorithms.	2	3	1	5
6	Discuss in detail the following related to Mobility-Related approach: + TCP feedback • Fixed RTO ELFN Approach • TCP-DOOR ATCP protocol.	2	3	1	5
7	Explain the use of Sensors in Disaster Relief Management and Drinking Water Quality.	2	5	4	5

Unit 5 - Environmental monitoring

KLS Gogte Institute of Technology, Belagavi

Department of Information Science and Engineering Academic Year: 2022-23

Program: B.E Semester: VII

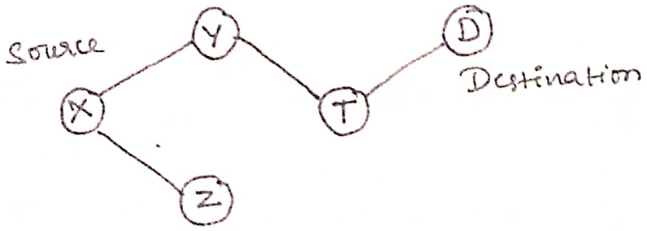
Compensatory IA

Course Title: Adhoc Sensor Networks

Code: 18IS744

Date: 11/01/2023 Max. Marks: 25

Answer any FIVE questions.

Q. No.		[L]	[CO]	[PO]	[M]
1	For the following ad hoc network, use Adhoc On demand distance vector routing protocol to determine the path from Node X to Node D. 	3	1	2	5
2	Describe scalable broadcast algorithm and explain how Random Delay Timer calculated.	2	2	1	5
3	Explain Explicit Link Failure Notification (ELFN) approach mobility related solutions for TCP over Ad Hoc.	2	3	1	5
4	Explain Fast retransmit congestion control algorithm.	2	3	1	5
5	List and discuss the advantages of WSN over Wired Network. And also Explain why traditional routing protocols are not well suited for WSN	2	4	1	5
6	Discuss the concept of Mobile Sensors in detail.	2	5	1	5
7	Explain in detail the applications of Sensors in Body Area Network	2	5	1	5

Ease of deployment

Scalability

Fault tolerance,

~~IP~~ IA compensatory. Questions

Unit 1 : TORA

Dynamic source Routing Protocol

Adhoc on demand distance vector

Unit 2 : Broadcasting → wireless ~~Ad~~ based scheme.

Rebroadcasting schemes.

Multipoint Relaying

Scalable broadcast algorithm

Unit - 3 : TCP feedback

ELFN approach

fast restransmit → congetion conn Algorithm

Unit 4 : Mobile sensors.

Advantages of WSN over wired n/w.

Challenges faced by WSN.

Unit 5 : ✓ Application of sensors in body area n/w

✓ environmental monitoring

✓ Heath care monitoring.

USN :

Seventh Semester B.E. Semester End Examination, FEBRUARY_APRIL_2022

Course Code : 18IS744/16IS752

ADHOC SENSOR NETWORKS

Time: 3 hrs

Max. Marks :100

Instructions : 1. Answer any FIVE Full Questions selecting at least ONE Question from Each Unit
2. Draw neat diagrams wherever applicable

	L	CO	PO	M
MODULE 1				
1a. State and Explain the challenges faced by the Ad Hoc networks.	[2]	[1]	[1]	[10]
1b. Discuss Ad Hoc On Demand Distance Vector protocol in detail with neat diagrams	[2]	[1]	[1]	[10]
OR				
2a. Discuss MANET issues with the help of a neat diagram along with its important characteristics.	[2]	[1]	[1]	[10]
2b. Explain Destination-Sequenced Distance Vector Protocol and Wireless routing Protocol in detail.	[2]	[1]	[1]	[10]
MODULE 2				
3a. Outline the various characteristics of a Broadcast problem. Identify the drawbacks of flooding generated broadcast storm.	[2]	[2]	[1]	[10]
3b. Show how Jitter and Random Delay Timer can solve the problem of collisions. Explain the methods of implementation of random-access delay.	[3]	[2]	[2]	[10]
OR				
4a. Explain the different broadcast protocols probabilistic scheme, Counter based scheme and Location based scheme in detail.	[2]	[2]	[1]	[10]
4b. Explain the Location Based Scheme LBM scheme1 protocol in detail with the help of a neat diagram.	[2]	[2]	[1]	[10]
MODULE 3				
5a. Explain in detail the TCP header format with the help of a neat diagram.	[2]	[3]	[1]	[10]
5b. Discuss in detail the following related to Mobility-Related approach: 1) Fixed RTO 2) TCP-DOOR	[2]	[3]	[1]	[10]
OR				
6a. Discuss the meaning of any 5 basic terms related to TCP	[2]	[3]	[1]	[10]
6b. Explain the effects of Partitions on TCP.	[2]	[3]	[1]	[10]
MODULE 4				
7a. Identify the various challenges of Wireless Sensor Networks	[2]	[4]	[1, 2]	[10]
7b. Explain clustering of Sensor Networks in detail with neat diagrams.	[2]	[4]	[3]	[10]
OR				
8a. Discuss regularly placed clusters with neat diagrams	[2]	[4]	[1]	[10]
8b. Discuss the concept of Mobile Sensors in detail.	[2]	[4]	[1]	[10]
MODULE 5				
9a. Discuss the applications of Sensors in Green House Monitoring.	[2]	[5]	[1]	[10]
9b. Discuss the applications of Sensors in Body Area Network	[2]	[5]	[1]	[10]
OR				
10a. Explain the use of Sensors in Disaster Relief Management and Drinking Water Quality.	[2]	[5]	[4]	[10]
10b. Discuss about the deployment of Sensors and Network formation along with WSN and Query Injection/Response with neat diagrams.	[2]	[5]	[1]	[10]

Course Code : 16IS752

Seventh Semester B.E. MAKEUP Examination, MARCH_MAY_2022
ADHOC SENSOR NETWORKS

Time: 3 hrs

Max. Marks :100

Instructions: 1. Answer any FIVE Full Questions selecting at least ONE Question from Each Unit
2. Draw neat diagrams wherever applicable

MODULE 1

	L	CO	PO	M
1a. Discuss the different challenges faced by Ad Hoc Networks.	[2]	[1]	[1]	[10]
1b. Explain Multipoint Relays and Topology based on Reverse Path Forwarding Protocol	[2]	[1]	[1]	[10]

OR

2a. Discuss Dynamic Source Routing with neat diagrams for route discovery and route reply.	[2]	[1]	[1]	[10]
2b. Explain Temporally Ordered Routing Algorithm (TORA) with neat diagram.	[2]	[1]	[1]	[10]

MODULE 2

3a. Discuss in detail the Flooding Generated Broadcast Storm with the help of a neat diagram.	[2]	[2]	[1]	[10]
3b. Show how Jitter and Random Delay Timer can solve the problem of collisions. Explain the methods of implementation of random-access delay.	[3]	[2]	[2]	[10]

OR

4a. Discuss Flooding with Self Pruning and Scalable Broadcast Algorithm in detail	[2]	[2]	[1]	[10]
4b. What is multipoint relaying? Differentiate between Ad Hoc Broadcast Protocol and Multipoint Relaying.	[4]	[2]	[1]	[10]

MODULE 3

5a. Explain TCP header format in detail with the help of a neat diagram	[2]	[3]	[1]	[10]
5b. Compare the different congestion control algorithms such as Slow start, Congestion Avoidance and Fast retransmit.	[2]	[3]	[1]	[10]

OR

6a. Explain the effects of partitions on TCP.	[2]	[3]	[1, 2]	[10]
6b. Explain TCP-Feedback, Explicit Link Failure Notification (ELFN) approach mobility related solutions for TCP over Ad Hoc.	[2]	[3]	[1]	[10]

MODULE 4

7a. Discuss the different issues related to Clustering of Sensor Networks with neat diagrams.	[2]	[4]	[1]	[10]
7b. Identify and explain in brief the different challenges faced by WSN.	[2]	[4]	[1, 2]	[10]

OR

8a. Discuss about clustering of Sensors in detail along with their coverage area.	[2]	[4]	[3]	[10]
8b. List and discuss the advantages of WSN over Wired Network. And also Explain why traditional routing protocols are not well suited for WSN.	[2]	[4]	[1]	[10]

MODULE 5

9a. Discuss the application of Sensors in Disaster Relief Management and Soil Moisture Monitoring

[2] [5] [1] [10]

9b. Describe the application of sensors in Body Area Network

[2] [5] [1] [10]

OR

10a. Write a short notes on:

1) Environmental Monitoring.
2) Health care Monitoring.

[2] [5] [4] [10]

10b. Discuss about the deployment of Sensors and Network formation along with WSN and Query Injection/Response with neat diagrams.

[2] [5] [1] [10]