Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2019

CS3EL05 Ad-hoc Network

Programme: B.Tech. Branch/Specialisation: CSE

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Military vehicles on a battlefield with no existing infrastructure will deploy ..... network. **1**

(a) MANET (b) Cell Network

(c) LAN (d) Wi-Fi

ii. MANET is a network having **1**

(a) Stationary network with fixed topology

(b) Mobile nodes with fixed topology

(c) Mobile nodes with dynamic topology

(d) Stationary nodes with dynamic topology

iii. Which stream cipher is used for WEP encryption for wireless LAN IEEE 802.11 standard? **1**

(a) DES (b) AES (c) RC4 (d) None of these

iv. What is the type of network in which the routers themselves are mobile? **1**

(a) Wide Area Network (b) Mobile Ad hoc Network

(c) Mobile Network (d) Local Area Network

v. Which of the following is the routing protocol used in MANETs? **1**

(a) Shortest Path First

(b) Routing Information Protocol

(c) Distance Vector Protocol

(d) Ad hoc On -demand Distance Vector Protocol

vi. The geostationary satellite used for communication systems **1**

(a) Rotates with the earth

(b) Is positioned over equator

(c) Remains stationary relative to the earth

(d) All of these

P.T.O.

vii. Which of the following is a transport layer attack on MANET? **1**
(a) Blackhole attack (b) Wormhole attack
(c) Flooding attack (d) Jellyfish attack

viii. Which of the following is a resource consumption attack? **1**
(a) Blackhole attack (b) Wormhole attack
(c) Flooding attack (d) Jellyfish attack

ix. Count to infinity problem occurs in …. **1**
(a) Shortest path first algorithm
(b) Distance vector routing algorithm
(c) Hierarchical routing algorithm
(d) Link state routing algorithm

x. Which of the following is true: **1**
(a) MANET is similar to sensor network as both have mobility
(b) Sensor network is similar to wireless LAN as both have infrastructure availability
(c) MANET is similar to wireless LAN as both of them mobility
(d) None of these

Q.2 i. Explain the different requirements of mobile ad hoc network with certain examples. **4**

ii. What is meant by wireless channel? Explain the different characteristics of wireless channel. **6**

OR iii. What are the applications of mobile ad hoc network? Explain the architecture of mobile ad hoc network. **6**

Q.3 i. What is meant by Wi-Fi? Explain the IEEE standard on which Wi-Fi is applicable **4**

ii. Explain VPN- based security solution for wireless LAN. How can it be implemented? **6**

OR iii. Differentiate the IEEE standard 802.11 from 802.15 by mentioning certain examples. **6**

Q.4 i. Classify the different routing protocols of mobile ad hoc network by explaining them. **4**

ii. Why is routing in mobile ad hoc network different as compared to other type of networks? Explain at least one approach for enhancing security in routing protocols. **6**

OR iii. Differentiate between AODV and DSDV routing protocol by mentioning the different steps of the working of these routing protocols with examples. **6**

Q.5 i. What is shrew attack? Explain with example. **4**

ii. Explain the different challenges in security provisioning of mobile ad hoc network at transport layer **6**

OR iii. Explain the different vulnerabilities possible in wireless networks as compared to the vulnerabilities of wired networks. **6**

Q.6 i. What are the security requirements in Mobile Ad hoc networks? Explain. **4**

ii. What is meant by sensor network? Explain the need of sensor network by comparing it with mobile ad hoc network. **6**

OR iii. What are security aware routing approaches available for mobile ad hoc network? Compare them. **6**

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Marking Scheme
CS3EL05 Ad-hoc Network

Q.1	i.	Military vehicles on a battlefield with no existing infrastructure will deploy ..... network. (a) MANET		**1**
	ii.	MANET is a network having (c) Mobile nodes with dynamic topology		**1**
	iii.	Which stream cipher is used for WEP encryption for wireless LAN IEEE 802.11 standard? (b) AES		**1**
	iv.	What is the type of network in which the routers themselves are mobile? (b) Mobile Ad hoc Network		**1**
	v.	Which of the following is the routing protocol used in MANETs? (d) Ad hoc On -demand Distance Vector Protocol		**1**
	vi.	The geostationary satellite used for communication systems (d) All of these		**1**
	vii.	Which of the following is a transport layer attack on MANET? (d) Jellyfish attack		**1**
	viii.	Which of the following is a resource consumption attack? (c) Flooding attack		**1**
	ix.	Count to infinity problem occurs in …. (b) Distance vector routing algorithm		**1**
	x.	Which of the following is true: (b) Sensor network is similar to wireless LAN as both have infrastructure availability		**1**
Q.2	i.	List of requirements of mobile ad hoc network Examples.	2 marks 2 marks	**4**
	ii.	Definition wireless channel At least four characteristics of wireless channel.	2 marks 4 marks	**6**
OR	iii.	Applications of mobile ad hoc network Architecture of mobile ad hoc network.	3 marks 3 marks	**6**
Q.3	i.	Definition Wi-Fi IEEE standard on which Wi-Fi is applicable	1 mark 3 marks	**4**
	ii.	VPN- based security solution for wireless LAN Implementation	3 marks 3 marks	**6**
OR	iii.	Differentiate the IEEE standard 802.11 from 802.15 At least six differences 1 mark for each	(1 mark * 6)	**6**
Q.4	i.	Classification of routing protocols Explanation	1 mark 3 marks	**4**
	ii.	Reason routing in mobile ad hoc network different At least one approach for enhancing security	2 marks 4 marks	**6**
OR	iii.	At least four AODV and DSDV steps Example	4 marks 2 marks	**6**
Q.5	i.	Shrew attack definition Explanation with example.	1 mark 3 marks	**4**
	ii.	List of challenges in security provisioning At least three 2 marks for each	(2 marks * 3)	**6**
OR	iii.	List of vulnerabilities possible in wireless networks At least four points Explanation	2 marks 4 marks	**6**
Q.6	i.	Security requirements in Mobile Ad hoc networks At least four points Explanation	2 marks 4 marks	**4**
	ii.	Definition of sensor network Explanation	2 marks 4 marks	**6**
OR	iii.	Routing approaches At least four points Comparison At least four points 1 mark for each (1 mark * 4)	2 marks 4 marks	**6**

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