

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2022
IT3EL05 Ad-hoc Networks

Programme: B.Tech.

Branch/Specialisation: IT

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. For which type of connection WPA security is used- **1**
(a) Ethernet (b) Infrared
(c) Wi-Fi (d) Bluetooth
- ii. Which of the following is an application of ad-hoc wireless network? **1**
(a) Military applications
(b) Collaborative and distributed computing
(c) Traffic distribution
(d) All of these
- iii. Which of the following is not a classification of MAC protocols? **1**
(a) Contention based protocols with restoration mechanism
(b) Contention based protocols with reservation mechanism
(c) Contention based protocols
(d) Contention based protocols with scheduling mechanism
- iv. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard? **1**
(a) THSS and FHSS (b) FHSS and DSSS
(c) Hybrid Technique (d) THSS and DSSS
- v. Identify the feature that makes routing complex in ad-hoc wireless networks- **1**
(a) Absence of router
(b) Absence of central coordinator
(c) Absence of gateway
(d) Absence of switches

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- vi. How many types of table updates are present in DSDV? **1**
 (a) 4 (b) 3 (c) 2 (d) 5
- vii. Which of the following is not a transport layer vulnerability? **1**
 (a) Mishandling of undefined, poorly defined
 (b) “fingerprinting” & other enumeration of host information
 (c) Overloading of transport-layer mechanisms
 (d) Unauthorized network access
- viii. The attacker using a network of compromised devices is known as- **1**
 (a) Internet (b) Botnet
 (c) Telnet (d) D-net
- ix. Which of the following is an objective of network security? **1**
 (a) Confidentiality
 (b) Integrity
 (c) Availability
 (d) All of these
- x. WSN stands for- **1**
 (a) Wireless sensor network
 (b) Wired sensed network
 (c) Wireless sensed network
 (d) Wired sensor network
- Q.2 i. What do you mean by ad-hoc network? **2**
 ii. What are the characteristics of wireless channel? **3**
 iii. Differentiate between the cellular network and ad-hoc network. **5**
 OR iv. Explain various design issues and challenges in ad-hoc network. **5**
- Q.3 i. Classify MAC protocol for ad-hoc networks and present an overview of the same. **4**
 ii. Explain the working of contention-based protocols and contention-based protocol with reservation mechanism. **6**
 OR iii. Discuss IEEE 802.11 (Wi-Fi) technology. Compare and contrast Wi-Fi with bluetooth technology. **6**
- Q.4 i. What is the need for routing protocols? Discuss the classification of routing protocols. **4**

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- ii. Explain route establishment in Destination Sequenced Distance Vector (DSDV) protocol with an example. **6**
- OR iii. Explain on demand routing protocol with an example. **6**
- Q.5 i. Classify transport layer protocols for ad-hoc wireless network. **2**
 ii. Why does TCP not perform well in an ad-hoc wireless network? **3**
 iii. Explain network security attacks in ad-hoc wireless network. **5**
 OR iv. Explain how security provisioning in ad hoc wireless networks differ from that in infrastructure-based networks. **5**
- Q.6 Attempt any two:
 i. What is wireless sensor network? Write its applications. **5**
 ii. Explain security-aware ad-hoc routing protocol. **5**
 iii. What are the major differences between ad-hoc wireless network and sensor network? **5**

Marking Scheme
IT3EL05 Ad-hoc Networks

Q.1	i)	c) Wi-Fi	1
	ii)	d) All of the above	1
	iii)	a) Contention based protocols with restoration mechanism	1
	iv)	b) FHSS and DSSS	1
	v)	b) Absence of central coordinator	1
	vi)	c) 2	1
	vii)	d) Unauthorized network access	1
	viii)	b) Botnet	1
	ix)	d) All of the above	1
	x)	a) Wireless sensor network	1
Q.2	i.	Ad Hoc Network definition 2 marks	2
	ii.	6 Characteristics of Wireless Channel, .5 mark for each	3
	iii.	At least 5 differences, 1 mark for each	5
OR	iv.	5 issues and challenges, 1 mark for each	5
Q.3	i.	MAC protocol classification 4 marks	4
	ii.	Contention-based protocols explanation with example 3 marks Contention-based protocol with reservation mechanism with example 3 marks	6
OR	iii.	IEEE 802.11 explanation 3 marks, comparison at least 3 points 3 marks	6
Q.4	i.	Need for Routing protocols 2 marks, classification 2 marks	4
	ii.	Route establishment in Destination Sequenced Distance Vector (DSDV) protocol 4 marks, example 2 marks	6
OR	iii.	On Demand Routing Protocol (AODV/DSR) explanation 6 marks	6
Q.5	i.	Classification 2 marks	2
	ii.	Explanation 3 marks	3
	iii.	Explanation 5 marks	5
OR	iv.	Explanation 5 marks	5
Q.6	i.	Wireless Sensor Network 2 marks, applications 3 marks	5

	ii.	Explanation 5 marks	5
	iii.	Differences 5 marks	5
