Code No: R204105J **R20** **Set No. 1**

IV B.Tech I Semester Advanced Supplementary Examinations, May – 2024

WIRELESS NETWORK SECURITY

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

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UNIT - I

1 a) Compare and contrast the characteristics of various wireless security threats, such as communications jamming and rogue network access points. [7]

b) Design a block diagram showing the architecture of a rogue network access point and its potential impact on network security. [7]

(OR)

2 a) Describe the techniques used by attackers to exploit vulnerabilities in wireless networks and compromise network security. [7]

b) Outline the steps to detect and mitigate a man-in-the-middle (MITM) attack in a wireless network. [7]

UNIT - II

3 a) Describe the process of establishing a secure SSH connection for terminal access and file transfer over wireless networks. [7]

b) Explain the significance of cryptographic protocols such as SSL/TLS and IPsec in ensuring the security of wireless communications. [7]

(OR)

4 a) Propose and explain a cryptographic protocol framework for securing wireless communication in IoT devices. [7]

b) Discuss the evolution of wireless LAN security protocols from WEP to WPA3, highlighting the improvements in security features. [7]

UNIT - III

5 Identify and prioritize the security threats faced by wireless devices in a corporate environment and propose countermeasures to mitigate these risks. [14]

(OR)

6 Explain the role of wireless infrastructure technologies (e.g., FDMA, TDMA, CDMA) in providing reliable and secure communication services to mobile users. [14]

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UNIT - IV

7 Create a block diagram illustrating the architecture of a Cellular Digital Packet Data (CDPD) network, including components such as Mobile Data Intermediate System (MD-IS) and Mobile Data Base Station (MDBS). [14]

(OR)

8 a) Contrast the architectural differences between IEEE 802.11 (Wi-Fi) and IEEE 802.15 (Bluetooth) wireless standards and analyze their respective strengths and weaknesses in supporting different types of wireless applications. [9]

b) Explain the cryptographic algorithms and protocols used in Wireless LAN Security Protocols. [5]

UNIT - V

9 a) Contrast the deployment strategies for wireless LANs in enterprise campus designs versus small office/home office (SOHO) settings, analyzing factors such as cost, scalability and management complexity. [7]

b) Discuss the security considerations and best practices for implementing wireless LANs in enterprise campus designs, including strategies for securing access points, authenticating users and encrypting data transmissions. [7]

(OR)

10 Create a block diagram illustrating the architecture of a wireless LAN deployment in an enterprise campus environment, including components such as access points, wireless controllers and network management systems. [14]

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IV B.Tech I Semester Regular/Supplementary Examinations, December – 2024

WIRELESS NETWORK SECURITY

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ONE Question from Each unit
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UNIT - I

1 a) Explain the concept of Communication Jamming along with examples. [7]
b) Write short notes on Rogue client in detail. [7]

(OR)

2 a) Explain the History of wireless Technologies in detail. [7]
b) Explain the importance of Uncontrolled terrain in wireless security. [7]

UNIT - II

3 a) What are the Layers of OSI Model and explain each layer in detail. [7]
b) List out different functions of Data link layer in detail. [7]

(OR)

4 Explain the following terms related to Data link layer in detail [7]
(i) Logic link control (ii) Media access control [7]

UNIT - III

5 Explain the following terms in detail [5]
(i) Wireless router (ii) Wireless repeater (iii) Wireless adapters [5]
[4]

(OR)

6 a) How do Wireless Devices work? Explain with an example. [7]
b) With examples describe the advantages of Wireless Devices. [7]

UNIT - IV

7 a) Draw the Cellular Digital Packet Data network architecture and explain its operation. [7]
b) Explain the concept of Mobile Data Base Station. [7]

(OR)

8 a) Draw the Mobitex Architecture and explain its operation. [7]
b) List out different CDPD Security issues in detail. [7]

UNIT - V

9 a) Explain the concept of Kiosk/Roaming Agent Design along with examples. [7]
b) List the advantages and disadvantages of Retail and manufacturing design. [7]

(OR)

10 a) Explain the importance of Warehouse Design along with example. [7]
b) Write short notes on SOHO design? [7]

Code No: R204105J **R20** **Set No. 2**

IV B.Tech I Semester Regular/Supplementary Examinations, December – 2024

WIRELESS NETWORK SECURITY

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

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UNIT - I

1		Explain the operation of following terms in detail (i) Rogue client (ii) Dos Jamming	[7] [7]
		(OR)	
2		Explain the operation of Man-in-the-Middle Attack in detail.	[14]

UNIT - II

3		Explain the following terms in detail (i) Connection-Oriented Service (ii) Connectionless service	[7] [7]
		(OR)	
4	a)	Explain the importance SSH protocol in detail.	[7]
	b)	List out few comparisons of Secure Socket Layer and Transport Layer Security.	[7]

UNIT - III

5	a)	Explain the concept of Layers in Physical Security along with diagrams.	[7]
	b)	Write short notes on how to prevent data leakage in detail.	[7]
		(OR)	
6	a)	Draw the block diagram of Frequency Division Multiple Access and explain.	[7]
	b)	List out advantages and disadvantages of FDMA.	[7]

UNIT - IV

7	a)	What is Wireless Application Protocol? Explain.	[7]
	b)	Write short notes on Mobile Data Intermediate System?	[7]
		(OR)	
8	a)	Explain different Wireless Standards and Technologies in detail.	[7]
	b)	List out different advantages and disadvantages of CDPD?	[7]

UNIT - V

9	a)	Explain the concept of Enterprise Guest Network along with example.	[7]
	b)	Write short notes on RF Containment?	[7]
		(OR)	
10		Explain the implementation of Enterprise Point-to-Point Configuration along with diagram.	[14]

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Set No. 3

IV B.Tech I Semester Regular/Supplementary Examinations, December – 2024

WIRELESS NETWORK SECURITY

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 70**

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ONE Question from Each unit
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UNIT - I

1 Explain the following terms in detail [7]
(i) Communication Jamming (ii) Uncontrolled Terrain [7]

(OR)

2 a) Explain the state of the wireless Security industry. [7]
b) Write short notes on MITM Attack. [7]

UNIT - II

3 a) Explain the concept of Wired Equivalent Privacy protocol in detail. [7]
b) List out different drawbacks of Wired Equivalent Privacy. [7]

(OR)

4 Explain the following terms related to IP security [7]
(i) Uses of IP Security (ii) Components of IP Security [7]

UNIT - III

5 a) Draw the block diagram of Time Division Multiple Access and explain. [7]
b) List out and explain few comparisons of FDMA and TDMA. [7]

(OR)

6 a) List out salient features of CDMA in detail. [7]
b) Explain the Forward Channel and Reverse channel of CDMA. [7]

UNIT - IV

7 a) Explain the concept of WAP Security Model in detail. [7]
b) Explain about Mobitex security issues. [7]

(OR)

8 a) Explain the following terms in detail [5][5]
(i) ETSI (ii) Home RF (iii) Ultra wide band Radio [4]

UNIT - V

9 a) Explain the concept of Intrusion Detection Systems in detail. [7]
b) Write short notes on Enterprise Design1 model along with example. [7]

(OR)

10 Explain the procedure for 802.1x implementation along with diagram. [14]

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Set No. 4

IV B.Tech I Semester Regular/Supplementary Examinations, December – 2024

WIRELESS NETWORK SECURITY

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UNIT - I

1		Explain the following terms in detail (i) Attacker Equipment (ii) Rogue Network Access Point	[7] [7]
		(OR)	
2	a)	List out different Technologies of wireless network security and explain.	[7]
	b)	Explain about history wireless security in detail.	[7]

UNIT - II

3	a)	Draw the IP Security Architecture and explain its operation.	[7]
	b)	Explain the operation of WTLS along with diagram.	[7]
		(OR)	
4		Explain the following terms in detail (i) Uni-cast session key (ii) Multicast key	[7] [7]

UNIT - III

5	a)	Explain the principles of Spread Spectrum process along with diagram.	[7]
	b)	Write short notes on Frequency Hopping Spread Spectrum in detail.	[7]
		(OR)	
6	a)	Explain the concept of Personal Digital Cellular in detail.	[7]
	b)	What are the common causes of information leaks at organizations?	[7]

UNIT - IV

7		Explain the following terms in detail (i) Spread spectrum OFDM (ii) IEEE 802 Standards	[7] [7]
		(OR)	
8	a)	Explain the concept of OFDM in detail.	[8]
	b)	Write short notes on WAP Gateway?	[6]

UNIT - V

9	a)	Explain the procedure to Implementing wireless LAN's- Security Considerations in detail.	[7]
	b)	Write short notes on Physical Security considerations?	[7]
		(OR)	
10	a)	What are the different Network Security considerations in detail?	[7]
	b)	Write short notes on VPN tunnelling.	[7]