

همراه با اعطاء مدرک معتبر  
همراه با حمایت فنی رایگان از طریق ایمیل



# CWNA

## Edition 2016

### مالتی مدیای (شبکه بی سیم)

# CWNA-106

## به زبان فارسی ( ۱ DVD - ۲۳ ساعت )

۱ DVD شامل :

۱۵ بخش آموزشی با بیش از ۱۴۵ درس به زبان انگلیسی و تشریح فارسی ✓

۳۷ لابراتوار برای توضیح کامل و شفاف مطالب ✓

تشریح فناوری های جدید : 802.11n , 802.11ac, MDM, WiMAX ✓

Utilities شامل: ✓

آزمون بین المللی CWNA-106 ✓

Wireless LAN Ebooks, Wireless Tools ✓

Cisco Wireless Technologies ✓

### System Requirements

- Windows XP with SP 2
- 256 MB RAM
- CD-ROM or DVD
- 1024 x 768 High Resolution Video Card & Monitor

# **CWNA-106 (Certified Wireless Network Administrator)**

## **Chapter-1 Introduction to Wireless LANs**

- 1.1 History of WLANs**
- 1.2 Today's WLAN Standards**
- 1.3 Applications of WLAN**

## **Chapter-2 Radio Frequency (RF) Fundamentals**

- 2.1 Concepts of RF behavior**
- 2.2 RF Terminology**
- 2.3 VSWR (Voltage Standing Wave Ratio)**
- 2.4 Line of Sight**
- 2.5 Calculating Power**

## **Chapter-3 Spread Spectrum Technology**

- 3.1 Spread Spectrum and its applications**
- 3.2 Spread Spectrum Technology: FHSS**
- 3.3 Spread Spectrum Technology: DSSS**
- 3.4 Comparing FHSS vs. DSSS**

## **Chapter-4 Wireless LAN Infrastructure Devices**

- 4.1 Wireless LAN Infrastructure devices**
- 4.2 Access Point Options**
- 4.3 Configuration & Management**
- 4.4 Wireless Bridge**
- 4.5 Wireless Workgroup Bridge**
- 4.6 Wireless LAN client devices**
- 4.7 Wireless LAN gateway devices**

## **Chapter-5 Antennas and Accessories**

- 5.1 RF Antenna Types**
- 5.2 RF Antenna Concepts**
- 5.3 RF Antenna Installation**
- 5.4 PoE Devices**
- 5.5 WLAN Accessories: Amplifiers**
- 5.6 WLAN Accessories: Attenuators**
- 5.7 WLAN Accessories: Lightning Arrestors**
- 5.8 WLAN Accessories: RF Splitters**
- 5.9 WLAN Accessories: RF Connectors**
- 5.10 WLAN Accessories: RF Cables**
- 5.11 WLAN Accessories: RF Pigtail Adapter Cable**
- 5.12 WLAN Accessories: Frequency Convertors**
- 5.13 WLAN Accessories: Bandwidth Control Units**
- 5.14 WLAN Accessories: Test Kits**

## **Chapter-6 Wireless LAN Organizations and Standards**

- 6.1 FCC, ISM & UNII Bands**
- 6.2 Power Output Rules & WLAN Standards**
- 6.3 WLAN Organizations**

## **Chapter-7 802.11 Network Architecture**

- 7.1 Locating a Wireless LAN**
- 7.2 SSIDs**
- 7.3 Beacons**
- 7.4 WLAN Scanning**
- 7.5 Authentication & Association**
- 7.6 WLAN Authentication Methods**
- 7.7 Emerging Wireless Security Solutions**
- 7.8 Service Sets**
- 7.9 Roaming**
- 7.10 VPN Solutions**

## **7.11 Power Management Features**

## **Chapter-8 MAC & Physical Layers**

### **8.1 Wireless LAN Frames vs. Ethernet Frames**

### **8.2 Collision Handling**

### **8.3 Fragmentation**

### **8.4 Dynamic Rate Shifting**

### **8.5 Distributed Coordination Function**

### **8.6 Inter-Frame Spacing**

### **8.7 Slot Time**

### **8.8 Communication Process**

### **8.9 RTS / CTS**

### **8.10 Configuring RTS / CTS**

### **8.11 Modulation**

## **Chapter-9 Troubleshooting Wireless LAN Installations**

### **9.1 Multipath**

### **9.2 Troubleshooting Multipath**

### **9.3 Solutions for Multipath**

### **9.4 Hidden Node**

- **Solutions to Hidden Node Problem**

### **9.5 Near / Far**

### **9.6 System throughput**

- **Co-location**

### **9.7 Types of Interference / Narrow band Interference**

- **All band interference**
- **RF Signal Degradation & Interference**
- **Adjacent Channel & Co-Channel Interference**

### **9.8 Range Considerations**

## **Chapter-10 WLANSecurity**

- 10.1 WLAN Security**
- 10.2 WEP (Wired Equivalent Privacy)**
- 10.3 Solutions to WEP Weakness**
  - **WEP Keys**
  - **Static WEP Keys**
  - **Centralized Key Server**
- 10.4 AES (Advanced Encryption Standard)**
- 10.5 Filtering**
  - **By SSID**
  - **By MAC Address**
  - **By Protocol**
- 10.6 Attacks on WLANs**
  - **Passive**
  - **Active**
  - **Jamming**
  - **Man in the Middle**
- 10.7 Emerging Security Solutions**
  - **WEP Key Management**
  - **Wireless VPNs**
  - **TKIP**
  - **AES Based Solutions**
  - **Wireless Gateways**
  - **802.1x & EAP**
- 10.8 Corporate Security Policy**
- 10.9 Security Recommendations**

## **Chapter-11 Site Survey Fundamentals**

- 11.1 What is a Site Survey?**
- 11.2 Preparing for a Site Survey**
- 11.3 Site Survey Equipment**
- 11.4 Conducting a Site Survey**
- 11.5 Site Survey Reporting**

## **802.11 Key Topics**

- **WiFi Generations**
- **802.11 Standards**
- **Future U-NII Bands**
- **Wireless LAN Security**
- **Wireless Intrusion Prevention System**
- **Captive Portals**
- **Wireless LAN Vendors**

## **CWNA-106 Exam**

- **Questions and Answers**
- **FalshCards**

## **Appendix-A Today's Standards**

- **802.11n Standard**
- **802.11ac Standar**
- **Mobile Device Management**
- **Wimax Standar**

## **Appendix-B1 (Bonus) - Cisco Wireless Networking**

### **Cisco Wireless Technologies**

- **Wireless Networking Overview**
- **802.11 Standards**
- **Cisco Unified Wireless Solutions**
- **Split-MAC, Mesh, LWAPP, AWPP**
- **Wireless Security**
  - **Cisco Unified Wireless Security**

### **Integrating Cisco Wireless LANs**

- **Wireless QoS**
- **Wireless LAN Security Issues**
- **Cisco Unified Wireless Networks**

- Cisco Wireless Control Systems
- Configuring Switch Ports for Wireless LAN Use

## Appendix-B2 (Bonus) - Windows Wireless and Review

- **Windows Wireless Networking**
  - Wireless Networking
  - Wireless Attacks
  - Lab: Configuring Wireless LANs
- **Wireless Networking Review**
  - Wireless Architecture
  - Wireless Infrastructure
  - Wireless Standards
  - Infrared & Bluetooth
  - Wireless Security
  - Wireless Configuration

## Appendix-C - Wireless Vendors

- Cisco Wireless Prdoducts
- DLink Wireless Prdoducts
- Mikrotik Wireless Prdoducts

## CWNA Wireless LAN Labs

- Today's WLAN Standards
- Concepts of RF behavior
- Comparing FHSS vs. DSSS
- Access Point Options
- Wireless Bridge
- Wireless Workgroup Bridge
- Wireless LAN client devices
- Wireless LAN gateway devices
- RF Antenna Types

- **PoE Devices**
- **WLAN Accessories: Amplifiers**
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- **WLAN Accessories: Test Kits**
- **WLAN Organizations**
- **WLAN Scanning**
- **Emerging Wireless Security Solutions**
- **VPN Solutions**
- **Power Management Features**
- **Dynamic Rate Shifting**
- **RTS / CTS**
- **Modulation**
- **Multipath**
- **Hidden Node**
- **WEP**
- **Passive Attacks on Wireless LANs**
- **WEP Key Management**
- **Site Survey Equipment**

### **Utilities Folder**

- **Wireless LAN Articles**
- **CWNA Labs**
- **CWNA-106 Exam (Questions / Answers)**
- **Wireless E-Books**
- **Wireless Tools**