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Autore	Woodward Bill
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Nota di contenuto	Fiber Optics Installer and Technician Guide; Front matter; Foreword; Acknowledgments; Contents at a Glance; Contents; Introduction; Assessment Test; Answers to Assessment Test; Chapter 1: History of Fiber Optics; Evolution of Light in Communication; Early Forms of Light Communication; The Quest for Data Transmission; Evolution of Optical Fiber Manufacturing Technology; Controlling the Course of Light; Extending Fiber's Reach; Evolution of Optical Fiber Integration and Application; Summary; Exam Essentials; Review Questions; Answers to Review Questions Chapter 2: Principles of Fiber Optic Transmission The Fiber Optic Link; Transmitter; Receiver; Optical Fibers; Connectors; Amplitude Modulation; Analog Transmission; Digital Data Transmission; Analog Data Transmission vs. Digital Data Transmission; Analog to Digital (A/D) Conversion; Sample Rate; Quantizing Error; Digital to Analog (D/A) Conversion; Pulse Code Modulation (PCM); Multiplexing; Decibels (dB); The Rules of Thumb; Absolute Power Gains and Losses; Summary; Exam Essentials; Review Questions; Answers to Review Questions;

### Chapter 3: Basic Principles of Light

Light as Electromagnetic Energy The Electromagnetic Spectrum; Refraction; What Causes Refraction?; Total Internal Reflection; Fresnel Reflections; Summary; Exam Essentials; Review Questions; Answers to Review Questions; Chapter 4: Optical Fiber Construction and Theory; Optical Fiber Components; Core; Cladding; Coating; Standards; Materials; Tensile Strength; Manufacturing Optical Fiber; Modified Chemical Vapor Deposition (MCVD); Outside Vapor Deposition (OVD); Vapor Axial Deposition (VAD); Plasma Chemical Vapor Deposition (PCVD); Modes; Refractive Index Profiles; Dispersion-Shifted Fiber Summary Exam Essentials; Review Questions; Answers to Review Questions; Chapter 5: Optical Fibers Characteristics; It All Adds Up; Dispersion; Modal Dispersion; Material Dispersion; Waveguide Dispersion; Chromatic Dispersion; Polarization-Mode Dispersion; How Dispersion Affects Bandwidth; Attenuation; Absorption; Scattering; Total Attenuation; Numerical Aperture; Bending Losses; Microbends; Macrobends; Equilibrium Mode Distribution; Fiber Specifications; Summary; Exam Essentials; Review Questions; Answers to Review Questions; Chapter 6: Safety; Basic Safety; Engineering Controls Personal Protective Equipment (PPE) Good Work Habits; Light Sources; Laser Service Groups; Laser Safety; Handling Fiber; Chemicals; Isopropyl Alcohol; Solvents; Anaerobic Epoxy; Site Safety; Electrical; Ladders; Trenches; Emergencies; Injury; Chemical Exposure; Fire; Summary; Exam Essentials; Review Questions; Answer to Review Questions; Chapter 7: Fiber Optic Cables; Basic Cable; Cable Components; Buffer; Strength Members; Jacket; Cable Types; Cordage; Distribution Cable; Breakout Cable; Armored Cable; Messenger Cable; Ribbon Cable; Submarine Cable; Hybrid Cable; Composite Cable Cable Duty Specifications

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#### Sommario/riassunto

For years, fiber optics was the future. Now, it's the present, and the time has come to act if you want to make a career in this fast-growing field. The Fiber Optics Installer and Technician Guide is a comprehensive resource designed to prepare you for the two leading fiber optics certifications, Fiber Optics Installer (FOI) and Fiber Optics Technician (FOT). This book's practical, objective-focused coverage includes: The history of fiber optics Principles of fiber optic transmission Optical fiber characteristics, construction, and theory Safety considerations Cables, connec

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