

Contents

An overview of unit contents 8

Introduction 13

Unit 1 Signal Processing 15

Unit 2 Logic Concepts 29

Unit 3 Semiconductor Devices 45

Unit 4 Microtechnology 61

Unit 5 Amplifiers 73

Unit 6 Filters 87

Unit 7 Transmission Media 99

Unit 8 Communication Systems 119

Unit 9 Sources of Information 133

Unit 10 Computers 151

Unit 11 Computer Networks 167

Unit 12 Instruments 185

Language Reference Section 199

Glossary of Electronic Terms 211

Key to the Exercises 255

References 291

An overview of unit contents

	Reading	Use of English (Cloze development)	Writing	Terminology Practice	Speaking
Unit 1 Signal Processing					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension Text Interpretation & comprehension Text 1: Translating Useful Signals Text 2: Analogue and Digital Signals	Definition of signal	Describing and comparing systems Analogue and Digital Processing	1. Gap filling Sensors and Actuators 2. Definitions	
Section B	The Future of Engineering (article)		Comparing viewpoints		Talking about career plans
Unit 2 Logic Concepts					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension Understanding diagrams Information transfer to a table Text 1: Historical Background Text 2: Combinational versus Sequential Logic Text 3: Bistable Devices Text 4: Logic Families	Boolean Algebra Definition of fault	Describing tree classification diagrams Design Technological Choice	1. Gap filling Function of the Inverter 2. Gap filling Logic Circuit Characterization 3. Definitions	
Section B	Interpreting graphics		Summarizing the main points		
Unit 3 Semiconductor Devices					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension Locating specific information Text 1: Semiconductors Text 2: Diodes Text 3: The Transistor Text 4: The Light-emitting Diode (LED)		Describing graphical presentations Transistor and Diode Characteristics	Definitions	
Section B	Professional Education		Form-filling		Identifying and commenting on specialized texts

An overview of unit contents

	Reading	Use of English (Cloze development)	Writing	Terminology Practice	Speaking
Unit 4 Microtechnology					
Section A	<ul style="list-style-type: none"> Vocabulary practice Text interpretation & comprehension Text 1: Integrated Circuits Text 2: Characteristics of Integrated Circuit Components		Information transfer IC Manufacturing Process	Gap filling From Vacuum Tubes to Transistors to Microchips	
Section B	What's All This Analogue Stuff Anyway? (article)		Summarizing attitudes		
Unit 5 Amplifiers					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension & practice Text comprehension Text 1: Types of Amplifiers Text 2: Operational Amplifiers	Efficiency	Describing components function and use	1. Gap filling Amplifier Circuit Symbol 2. Gap filling <ul style="list-style-type: none"> Negative Feedback The Architecture of a Two-stage Op-Amp 3. Definitions	
Section B	Matching headlines to extracts		Essay writing		Expressing opinions
Unit 6 Filters					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension Reading for important points Text 1: How Filters Work Text 2: Filter Transmission Text 3: Filter Types	About Filters	Describing diagrams Filter Characteristics	1. Gap filling Electromagnetic Susceptibility 2. Definitions	
Section B	Technology for art's sake (article)				Discussing an article

An overview of unit contents

	Reading	Use of English (Cloze development)	Writing	Terminology Practice	Speaking
Unit 7 Transmission Media					
Section A	<ul style="list-style-type: none"> Vocabulary comprehension Information transfer to a table Text 1: Guided Transmission Media Text 2: Unguided Transmission Media	Multiple Access and Broadcasting	Writing technical instructions	1. Definitions Gap filling The Different Types of Optical Fibers 2. Definitions	
Section B	Advertisements				Discussing advertisements
Unit 8 Communication Systems					
Section A	<ul style="list-style-type: none"> Note-taking Reading for important points Vocabulary practice Text 1: Some Historical Notes Text 2: The Communication Process Text 3: Modulation Text 4: Multiplexing		Describing a communication system	1. Gap filling The Laws of Electromagnetism 2. Gap filling Pulse-Code Modulation 3. Definitions	
Section B	Equations, Damned Equations and Statistics (article)		One-sentence summary		Talking about applied sciences
Unit 9 Sources of Information					
Section A	<ul style="list-style-type: none"> Vocabulary practice Text comprehension Ordering sentences Text 1: Television Text 2: Telephony Text 3: The Cellular Telephone System	Resolution in TV	Describing the audio information transfer process	Gap filling <ul style="list-style-type: none"> How Mobile Telephony Got Going Factors Affecting Data Communications Among Devices Acronyms	
Section B	Locating specific information				

An overview of unit contents

	Reading	Use of English (Cloze development)	Writing	Terminology Practice	Speaking
Unit 10 Computers					
Section A	<ul style="list-style-type: none"> Ordering paragraphs Passage interpretation & comprehension <p>Text 1: Historical Evolution of Computers</p> <p>Text 2: Microcomputers</p> <p>Text 3: The Microprocessor</p> <p>Text 4: The Memory</p> <p>Text 5: The Binary System</p>		Describing a block diagram	Definitions	
Section B	Career Opportunities		Summarizing the main points		Discussing job qualities and job satisfaction
Unit 11 Computer Networks					
Section A	<ul style="list-style-type: none"> Passage interpretation Vocabulary comprehension <p>Text 1: Basic Connectivity</p> <p>Text 2: LAN Technologies and Network Topologies</p>		Writing a report	1. Definitions The Internet 2. Gap filling Installing the LAN Hardware 3. Definitions	
Section B	Register in the User Guide				Register analysis
Unit 12 Instruments					
Section A	<ul style="list-style-type: none"> Vocabulary practice Summarizing Interpreting tables <p>Text 1: The Digital Multimeter</p> <p>Text 2: The Oscilloscope</p> <p>Text 3: Other Genovao Purpose Instruments</p>		Describing a process Design Process Flowchart	Definitions	
Section B	Scopes cleverly wed analog and digital (article)		Outlining advantages		