

CONTENTS

| | |
|--|------|
| 1. UNITS AND MEASUREMENTS | |
| 1-1 Primary Units and Measurements | 1-1 |
| 1-2 Significant figures | 1-7 |
| 1-3 Precision of Measurements | 1-11 |
| 1-4 Density and Specific Gravity | 1-14 |
| 1-5 Additional Physical Properties of Matter | 1-51 |
| 2. THERMAL, ELECTRICAL AND MECHANICAL UNITS | |
| 2-1 Thermal Properties of Matter | 2-1 |
| 2-2 Electrical Units and Measurements | 2-36 |
| 2-3 Energy and Power | 2-49 |
| 3. REVIEW OF CHEMICAL FUNDAMENTALS (Part 1) | |
| 3-1 Gases | 3-1 |
| 3-2 Matter | 3-7 |
| 3-3 Inorganics | 3-16 |
| 4. REVIEW OF FUNDAMENTALS (Part 2) | |
| 4-1 Solutions | 4-1 |
| 4-2 Oxidation-Reduction | 4-31 |
| 4-3 Electrochemistry | 4-36 |
| 5. THERMOCHEMISTRY AND KINETICS | |
| 5-1 Thermochemistry | 5-1 |
| 5-2 Free Energy and Entropy | 5-27 |
| 5-3 Kinetics | 5-39 |
| 6. ORGANIC CHEMISTRY | |
| 6-1 Classification of Compounds | 6-1 |
| 6-2 Major Classes of Organic Compounds | 6-3 |
| 7. METALS AND ALLOYS | |
| 7-1 Physical Metallurgy | 7-1 |
| 7-2 Testing of Metals | 7-18 |
| 7-3 Metalworking | 7-36 |
| 8. FLUID MECHANICS | |
| 8-1 Fluid Flow | 8-1 |
| 8-2 Flow Measurement | 8-12 |
| 8-3 Pipes and Fittings | 8-19 |
| 9. ENGINEERING OPERATIONS | |
| 9-1 Crushing and Grinding | 9-1 |

| | |
|-------------------------------|-------|
| 9-2 Mixing and Blending | 9-10 |
| 9-3 Filtration | 9-13 |
| 9-4 Absorption and Extraction | 9-17 |
| 9-5 Drying and Humidification | 9-32 |
| 10. SAFETY PRACTICES | |
| 10-1 Fire Hazards | 10-1 |
| 10-2 Toxic Materials | 10-10 |
| 10-3 Electrical Hazards | 10-16 |
| 10-4 Radiation Hazards | 10-29 |
| 10-5 Personnel Protection | 10-33 |
| 10-6 Waste Disposal | 10-37 |
| Index follows Chapter 10 | |