Table of Contents

Introduction..... ix

Chapter 1: Search Engine Optimization and Its Objectives..... 1

1.1 Search Engine Basics..... 2

1.2 An Introduction to SEO..... 6

1.3 Layout of Search Result Pages..... 7

1.4 Algorithm-Based Ranking System..... 8

Relevance and Importance..... 10

1.5 Search Engine Success Factors..... 11

On the Page SEO group..... 12

Off the Page SEO Group..... 13

Violations..... 15

1.6 Determining Search Intent and Delivering Relevant and Fresh Content..... 15

Estimating Content Quality..... 18

Link Analysis..... 18

Evaluating Social Media Signals..... 18

Disambiguation and Freshness..... 19

1.7 Analyzing Ranking Factors..... 19

Negative Ranking Factors..... 20

Some More Ranking Factors..... 21

1.8 Using Advanced Search Techniques..... 22

1.9 Vertical Search Techniques..... 23

Image Search..... 24

Video Search..... 25

News Search..... 26

Book and Blog Search..... 26

1.10 Country-Specific Search Engines..... 27

1.11 Determining SEO Objectives..... 29

Strategic Goals of a SEO Practitioner..... 29

Understanding Search Engine Traffic and Visitor Intent..... 31

Developing SEO Plans Prior to Site Development..... 32

SEO for Raw Traffic 34
SEO for E-Commerce Sales 34
SEO for Mindshare/Branding 35
SEO for Lead Generation and Direct Marketing 36
SEO for Reputation Management 37
SEO for Ideological Influence 37
Summary 38
Review Exercise 38
Multiple Choice Questions 38
Descriptive Questions 40

Chapter 2: Developing an SEO Friendly Website 47
2.1 Accessibility of Website to Search engine 48
2.2 Defining Your Site's Information Architecture 52
Site Architecture/Structure Design Principles 53
Flat and Deep Architectures of a Website 56
2.3 Site Auditing to Identify SEO Problems 59
2.4 Web Analytics and Current Server Statistics Software 61
2.5 Determining Top Competitors in SEO 64
2.6 Search Engine Indexing Status 66
2.7 Benchmarking Current Rankings, Traffic Source, and Volumes 67
2.8 Conduct SWOT analysis 69
2.9 Keyword Generation 71
2.10 Using Google Analytics 72
2.11 Creating and Optimizing Pay-Per-Click Campaigns 73
Summary 75
Review Exercise 75
Multiple Choice Questions 75
Descriptive Questions 77

Chapter 3: Responsive Web Designing with HTML5 and CSS3 87
3.1 Getting Started with HTML5, CSS3, and Responsive Web Design 88
3.2 Media Queries 89
3.3 Supporting Differing Viewports 91

Viewports v/s Screen Size 92
3.4 Embracing Fluid Layout 93
Fixed-Width Layouts 93
Fluid or Liquid Layouts 95
3.5 Flexible Images 96
3.6 Proportion-Based Grids 96
3.7 HTML 5 for Responsive Design 97
New Features of HTML5 97
Structuring an HTML Document 102
Editors and Browsers Supported by HTML5 105
Creating and Saving an HTML Document 106
Validating an HTML Document 109
Viewing an HTML Document 112
Hosting Web Pages 112
Exploring Elements 113
Horizontal Rules 131
Line Breaks 132
Paragraph 132
Exploring Multimedia Elements 133
Exploring the FIGURE and FIGCAPTION Elements 147
Exploring ARIA Accessibility 148
Exploring Offline Web Applications 149
Exploring Web Communication 150
Detecting HTML5 and CSS 3 Features Using Modernizr 153
Summary 153
Review Exercise 154
Multiple Choice Questions 154
Descriptive Questions 156

Chapter 4: CSS3 for Designing and Developing Pages 161
4.1 Basics of CSS3 162
Understanding the Syntax of CSS 163
Inserting CSS in an HTML Document 165
4.2 CSS3 Selectors 169

The Universal Selector 169
The Type Selector 170
The Class Selector 170
The ID Selector 171
The Child Selector 171
The Descendant Selector 171
The Adjacent Sibling Selector 172
The Attribute Selectors 172
The Query Selector 173
4.3 Pseudo-Classes and Pseudo-Elements 176
Exploring Pseudo-Classes 176
Exploring the Pseudo-Elements 191
4.4 Typography 193
Popular Font Families 194
Exploring Font Properties in CSS 196
Introducing Web Font 201
4.5 CSS Color Modes 203
The Opacity Property 204
The RGBA Value Format 205
HSL and HSLA Values Format 206
Using Color Properties 206
4.6 Stunning Aesthetics with CSS3 212
Using the text-shadow Property 216
Exploring Gradient Properties 217
Exploring Background of a Web Page 221
4.7 CSS3 Transitions 238
4.8 CSS3 Transformations 242
4.9 Animations 243
Summary 244
Review Exercise 245
Multiple Choice Questions 245
Descriptive Questions 247

Chapter 5: Forms with HTML5 and CSS3 251
5.1 Exploring the FORM Element 252
5.2 Exploring the INPUT Element 254
Describing the text Type 256
Describing the color Type 258
Describing the search Type 259
Describing the tel Type 259
Describing the url Type 259
Describing the email Type 260
Describing the password Type 260
Describing the datetime-local Type 261
Describing the datetime, date, month, week, and time Types 262
Describing the number and range Types 263
Describing the file Type 263
Describing the hidden Type 264
Describing the checkbox Type 266
Describing the radio Type 267
Describing the submit Type 269
Describing the reset Type 270
5.3 Exploring the BUTTON Element 271
5.4 Exploring the Multiple-Choice Elements 274
The SELECT Element 274
The OPTION Element 275
The OPTGROUP Element 276
5.5 Exploring the TEXTAREA and LABEL Elements 278
5.6 Exploring the FIELDSET and LEGEND Elements 281
5.7 Describing the DATALIST Element 283
5.8 Submitting a Form 284
The enctype Attribute 285
The action Attribute 287
The method Attribute 288
Using the enctype, action, and method Attributes 288
5.9 Styling HTML5 Forms with CSS3 290
Summary 294
Review Exercise 295

Multiple Choice Questions 295
Descriptive Questions 297

Chapter 6: RIA and Mashup 299
6.1 Characteristics of RIA 300
6.2 Moving From Web 1.0 to Web 2.0 302
Web 2.0 Ecosystem 303
Technology enabler for Web 2.0 303
6.3 Web Mashup Ecosystems 304
6.4 Mashup Technologies 306
Mashing on the Web Server 306
RUI Using AJAX 308
Mashing with JSON 309
6.5 RIA: AJAX versus Traditional Approach 310
Evolution of Web Application 311
Problems with Technologies 320
AJAX—The Solution 321
Creating a Sample AJAX Application 323
6.6 Technical Background 331
JavaScript and AJAX 331
JSON Alternative to XML 346
Syndication 347
REST and WS 348
Summary 357
Review Exercise 357
Multiple Choice Questions 357
Descriptive Questions 359

LAB Session 365
Lab 1 Setting Practical on SEO 367
Lab 2 Practical to Demonstrate Responsive Web Design 393
Lab 3 Practical to Demonstrate Google Mashup 411

Index 419