## Contents

**Introduction**  xxvii  
**Assessment Test**  xl  

### Chapter 1 Introducing Windows 8.1  1

- Navigating Windows 8.1  2
  - Using Gestures  4
  - Using Charms  5
  - Using Tiles  5
  - Using Alt Menus  6
  - Using the Start Menu  6
  - Showing Administrative Tools  7
  - Snapping Apps  9
- Using Windows 8.1 Shortcuts  10
- Understanding Authentication and Authorization  12
  - Account Types  12
  - PIN and Picture Passwords  15
- Using the Windows Command Prompt  17
  - Launching the Command Prompt  17
  - Launching with Administrator Privileges  18
  - Command Prompt Basics  19
  - Using `runas`  23
  - System Variables  24
  - Commands and Paths  25
  - Using Copy and Paste with the Command Prompt  33
  - Capturing the Output  35
  - Creating a Batch File  35
- Using Windows PowerShell and the PowerShell ISE  38
  - Windows PowerShell ISE  39
  - PowerShell Command Overview  42
  - Verbs and Nouns  44
  - Sending Output to a Text File  44
  - PowerShell Syntax  45
  - Running PowerShell Commands  48
  - Running PowerShell Scripts  49
  - Just a Glimpse  51
- Summary  52
- Exam Essentials  52
- Review Questions  54
**Chapter 2**  Planning the Windows 8.1 Installation  59
Choosing a Windows 8.1 Edition  60
   Windows RT and the Surface Tablet  63
   Software Assurance  64
Evaluating Hardware and Compatibility Requirements  64
   Considering x86 and x64 (32-Bit and 64-Bit)  65
   Determining Screen Resolution  65
Choosing Between an Upgrade and a Clean Install  66
   Windows.old Folder  67
   Upgrade Paths  67
   Windows 8.1 Upgrade Assistant  68
   Upgrade vs. Migration  69
Designing an Operating System Installation Strategy  70
   Windows 8.1 Images  71
   Design Considerations  78
Summary  82
   Exam Essentials  83
Review Questions  85

**Chapter 3**  Installing Windows 8.1  89
Performing a Local Installation  90
Installing and Configuring Windows To Go  94
   Installing Windows To Go  95
   Configuring Windows To Go  96
   Using Command-Line Tools  97
Creating and Installing a VHD  99
Designing a Solution for User Settings  102
   User Profiles  103
   Folder Redirection  107
   User Experience Virtualization  109
Migrating User Data  109
   Windows Easy Transfer  110
   User State Migration Tool  112
   Folder Redirection for Migration  122
Summary  122
   Exam Essentials  123
Review Questions  124

**Chapter 4**  Using Virtualization Technologies  129
Understanding Virtualization and Hyper-V  130
Reviewing Requirements for Hyper-V  132
Enabling Hyper-V 134
Configuring Virtual Switches 135
Creating Virtual Machines 138
Creating a VM for Windows 8.1 140
Installing Windows 8.1 in a VM 142
Creating a VM for Windows Server 2012 143
Installing Windows 2012 in a VM 144
Configuring Windows Server 2012 145
Promoting a Server to a DC 148
Joining Your Windows 8.1 System to a Domain 151
Logging On to the Domain 153
Creating and Manipulating Snapshots 154
Comparing Test and Production Networks 157
Configuring Virtual Machines 158
Designing a Virtual Application Strategy 159
Remote Desktop Services 160
Comparing RemoteApp and RemoteFX 161
Understanding App-V 162
Summary 162
Exam Essentials 163
Review Questions 164

Chapter 5 Networking 169

Understanding Network Connectivity in an Enterprise 170
Unicast, Multicast, and Broadcast 172
Understanding IP Addresses 173
IPv4 vs. IPv6 178
Resolving Names to IP Addresses 182
Basic Commands Used with Networking 185
Using the Network and Sharing Center 192
Understanding Network Locations Profiles 193
Configuring Network Locations 196
Configuring HomeGroup Settings 197
Configuring a Wired Network Interface Card 200
Configuring Wireless Network Settings 202
Resolving Connectivity Issues 210
Verifying Hardware and Cabling 211
Using Command Prompt Tools for Troubleshooting 213
Troubleshooting and Resolving Name Resolution Issues 214
Summary 216
Exam Essentials 216
Review Questions 218
### Chapter 6  Windows Firewall and Remote Access  223

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring Windows Firewall</td>
<td>224</td>
</tr>
<tr>
<td>Firewall Limitations</td>
<td>227</td>
</tr>
<tr>
<td>Windows Firewall Exceptions</td>
<td>227</td>
</tr>
<tr>
<td>Windows Firewall with Advanced Security</td>
<td>229</td>
</tr>
<tr>
<td>Enabling a Port</td>
<td>232</td>
</tr>
<tr>
<td>Enabling a Protocol</td>
<td>234</td>
</tr>
<tr>
<td>Configuring Authenticated Exceptions</td>
<td>236</td>
</tr>
<tr>
<td>Configure Connection Security Rules (IPsec)</td>
<td>238</td>
</tr>
<tr>
<td>Configuring Remote Management</td>
<td>241</td>
</tr>
<tr>
<td>Remote Access Overview</td>
<td>241</td>
</tr>
<tr>
<td>Choosing the Appropriate Remote Management Tools</td>
<td>242</td>
</tr>
<tr>
<td>Configuring Remote Management Settings</td>
<td>243</td>
</tr>
<tr>
<td>Configuring Remote Desktop Settings</td>
<td>247</td>
</tr>
<tr>
<td>Configuring Remote Authentication</td>
<td>248</td>
</tr>
<tr>
<td>Connecting to a Remote System with Remote Desktop Connection</td>
<td>251</td>
</tr>
<tr>
<td>Supporting VPNs</td>
<td>254</td>
</tr>
<tr>
<td>DirectAccess</td>
<td>258</td>
</tr>
<tr>
<td>BranchCache</td>
<td>258</td>
</tr>
<tr>
<td>Supporting Mobile Devices</td>
<td>260</td>
</tr>
<tr>
<td>Sync Center</td>
<td>261</td>
</tr>
<tr>
<td>Supporting Broadband</td>
<td>263</td>
</tr>
<tr>
<td>Summary</td>
<td>264</td>
</tr>
<tr>
<td>Exam Essentials</td>
<td>265</td>
</tr>
<tr>
<td>Review Questions</td>
<td>267</td>
</tr>
</tbody>
</table>

### Chapter 7  Managing Windows 8.1 in a Domain  271

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workgroups vs. Domains</td>
<td>272</td>
</tr>
<tr>
<td>Domain Controllers</td>
<td>272</td>
</tr>
<tr>
<td>Joining a Domain</td>
<td>273</td>
</tr>
<tr>
<td>Authentication and Authorization in a Domain</td>
<td>275</td>
</tr>
<tr>
<td>Authentication</td>
<td>276</td>
</tr>
<tr>
<td>Authorization</td>
<td>276</td>
</tr>
<tr>
<td>Using Group Policy in a Domain</td>
<td>283</td>
</tr>
<tr>
<td>Group Policy and the GPMC</td>
<td>284</td>
</tr>
<tr>
<td>Group Policy Scope</td>
<td>286</td>
</tr>
<tr>
<td>Group Policy Nodes</td>
<td>288</td>
</tr>
<tr>
<td>Group Policy Settings</td>
<td>290</td>
</tr>
<tr>
<td>Summary</td>
<td>292</td>
</tr>
<tr>
<td>Exam Essentials</td>
<td>292</td>
</tr>
<tr>
<td>Review Questions</td>
<td>293</td>
</tr>
</tbody>
</table>
Chapter 8  Users and Groups  297
Overview of Windows 8.1 User Accounts 298
   Account Types 299
   Built-in Accounts 300
   Local and Domain User Accounts 301
Logging On and Logging Off 302
   Using Local User Logon Authentication 302
   Signing Out of Windows 8.1 303
Working with User Accounts 303
   Using the Local Users and Groups Utility 304
   Using the User Accounts Option in Control Panel 306
   Creating New Users 307
   Disabling User Accounts 311
   Deleting User Accounts 312
   Renaming User Accounts 313
   Changing a User’s Password 314
Managing User Properties 315
   Managing User Group Membership 316
Setting Up User Profiles, Logon Scripts, and Home Folders 317
Troubleshooting User Account Authentication 322
   Troubleshooting Local User Account Authentication 322
Using, Creating, and Managing Groups 323
   Using Built-in Groups 324
   Creating Groups 328
   Managing User and Computer Groups in Intune 332
Summary 333
Exam Essentials 333
Review Questions 334

Chapter 9  Managing Security  339
Managing Security 340
   Managing Security Configurations 340
   Group Policy Processing 341
   Using the Group Policy Results Tool 342
   Group Policy Caching 343
Managing and Applying LGPOs 343
   Configuring Local Security Policies 346
   Support Authentication and Authorization by Using Account Policies 347
   Using Local Policies 354
Configuring User Account Control 363
   Managing Privilege Elevation 363
   Registry and File Virtualization 366
Using Advanced Security Options 366
   Configuring the Action Center 367
   Performing a Manual Scan 367
   Configuring Windows Defender 369
   Other Security Options 371
Using BitLocker Drive Encryption 373
Understanding Smart Cards 374
Managing File and Folder Security 375
   Folder Options 375
   Securing Access to Files and Folders 379
Managing Network Access 380
   Creating Shared Folders 380
   Configuring Share Permissions 382
   HomeGroup 383
Using Windows Update 383
Using System Center 2012 386
   Microsoft System Center 2012 Endpoint Protection 386
Summary 386
Exam Essentials 387
Review Questions 388

Chapter 10 Managing Files and Disks on Windows 8.1 393
Understanding Files and Folders 394
   File Basics 394
   About Folders 396
Configuring Folder Sharing 399
   Advanced Sharing Options 402
   Using Public Folders 402
   Advanced Sharing 403
   Configuring OneDrive 404
   Configuring HomeGroups 405
Managing File and Folder Security 410
   Folder Options 410
   Securing Access to Files and Folders 414
   Determining Effective Permissions 419
   Viewing Effective Permissions 420
   Determining NTFS Permissions for Copied or Moved Files 421
Managing Network Access to Folders 421
   Creating Shared Folders 422
   Configuring Share Permissions 423
   Dynamic Access Control 424
   NTFS Auditing 425
   Supporting Data Security by Using EFS 426
Managing Local Storage 427
  Managing Disk Volumes and Filesystems 428
  Configuring Disk Quotas 430
  Managing Storage Spaces 432
  Supporting Data Storage 433
Monitoring System Performance 434
  Configuring Indexing Options 435
Controlling Access to Removable Media 438
  BitLocker and BitLocker To Go 438
  Microsoft BitLocker Administration and Monitoring 440
Summary 440
Exam Essentials 441
Review Questions 442

Chapter 11 Managing Windows 8.1 Hardware and Printers 447
Configuring Devices and Device Drivers 448
  Signed and Unsigned Drivers 455
  Installing, Updating, and Disabling Drivers 457
  Managing Driver Packages 462
  Resolving Driver Issues 463
  Rolling Back Drivers 464
  Configuring Driver Settings 465
Installing and Sharing Printers 466
  Adding and Connecting to Printers 467
  Connecting to a Shared Printer 470
  Configure Location-Aware Printing 474
Monitoring and Managing Print Servers 476
  NFC Tap-to-Pair 477
Summary 478
Exam Essentials 478
Review Questions 480

Chapter 12 Monitoring System Performance and Recovery 485
Using Task Manager 486
  Reviewing the Enhancements 486
  Task Manager 487
  Using Task Manager 490
  Remediating Startup Issues by Using the Diagnostics and Recovery Toolkit 498
Using Event Viewer 498
  Configuring Event Logs 499
  Analyzing Event Logs 500
  Configuring Event Subscriptions 502
<table>
<thead>
<tr>
<th>Chapter 13</th>
<th>Recovery and Backup Options</th>
<th>527</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Protection</td>
<td>528</td>
<td></td>
</tr>
<tr>
<td>Enabling System Protection</td>
<td>528</td>
<td></td>
</tr>
<tr>
<td>File Recovery</td>
<td>531</td>
<td></td>
</tr>
<tr>
<td>Using File History</td>
<td>531</td>
<td></td>
</tr>
<tr>
<td>Creating a Recovery Drive</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td>541</td>
<td></td>
</tr>
<tr>
<td>Exam Essentials</td>
<td>541</td>
<td></td>
</tr>
<tr>
<td>Review Questions</td>
<td>542</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 14</th>
<th>Installing and Configuring Applications</th>
<th>547</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Store</td>
<td>548</td>
<td></td>
</tr>
<tr>
<td>Using the Windows Store</td>
<td>549</td>
<td></td>
</tr>
<tr>
<td>Navigating the Windows Store</td>
<td>550</td>
<td></td>
</tr>
<tr>
<td>Using Windows Intune</td>
<td>555</td>
<td></td>
</tr>
<tr>
<td>Supporting Desktop Apps</td>
<td>557</td>
<td></td>
</tr>
<tr>
<td>Configuring Application Restrictions</td>
<td>560</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td>561</td>
<td></td>
</tr>
<tr>
<td>Exam Essentials</td>
<td>561</td>
<td></td>
</tr>
<tr>
<td>Review Questions</td>
<td>562</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix A</th>
<th>Answers to Review Questions</th>
<th>565</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>566</td>
<td></td>
</tr>
<tr>
<td>Chapter 2</td>
<td>568</td>
<td></td>
</tr>
<tr>
<td>Chapter 3</td>
<td>569</td>
<td></td>
</tr>
<tr>
<td>Chapter 4</td>
<td>571</td>
<td></td>
</tr>
<tr>
<td>Chapter 5</td>
<td>574</td>
<td></td>
</tr>
</tbody>
</table>