



Magento 2 Certified Associate Developer

# Exam Study Guide



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# Contents

Introduction.....	1
<b>Topics and Objectives .....</b>	<b>2</b>
<b>1 Magento Architecture and Customization Techniques .....</b>	<b>2</b>
1.1 Describe the Magento module-based architecture .....	2
1.2 Describe the Magento directory structure .....	2
1.3 Utilize configuration and configuration variables scope .....	2
1.4 Demonstrate how to use dependency injection (DI) .....	2
1.5 Demonstrate ability to use plugins .....	2
1.6 Configure event observers and scheduled jobs .....	2
1.7 Utilize the CLI .....	3
1.8 Describe how extensions are installed and configured .....	3
<b>2 Request Flow Processing .....</b>	<b>3</b>
2.1 Describe how to use Magento modes .....	3
2.2 Demonstrate the ability to create a frontend controller with different response types (HTML / JSON / redirect) .....	3
2.3 Demonstrate how to use URL rewrites for a catalog product view to a different URL .....	3
<b>3 Customizing the Magento UI .....</b>	<b>3</b>
3.1 Demonstrate the ability to customize the Magento UI using themes .....	3
3.2 Demonstrate an ability to create UI customizations using a combination of a block and template .....	3
3.3 Identify the uses of different types of blocks .....	3
3.4 Describe the elements of the Magento layout XML schema, including the major XML directives .....	4
3.5 Create and add code and markup to a given page .....	4
<b>4 Working with Databases in Magento .....</b>	<b>4</b>
4.1 Describe the basic concepts of models, resource models, and collections .....	4
4.2 Describe how entity load and save occurs .....	4
4.3 Describe how to filter, sort, and specify the selected values for collections and repositories .....	4
4.4 Demonstrate an ability to use declarative schema .....	4
<b>5 Developing with Adminhtml .....</b>	<b>4</b>
5.1 Create a controller for an admin router .....	4
5.2 Define basic terms and elements of system configuration, including scopes, website, store, store view .....	4
5.3 Define / identify basic terms and elements of ACL .....	4
5.4 Set up a menu item .....	5
5.5 Create appropriate permissions for users .....	5

<b>6 Customizing Magento Business Logic .....</b>	<b>5</b>
6.1 Identify/describe standard product types (simple, configurable, bundled, etc.).....	5
6.2 Describe category properties in Magento .....	5
6.3 Define how products are related to the category .....	5
6.4 Describe the difference in behavior of different product types in the cart.....	5
6.5 Describe native shipment functionality in Magento.....	5
6.6 Describe and customize operations available in the customer account area .....	5
6.7 Add or modify customer attributes .....	5
6.8 Customize the customer address .....	5
<b>Magento 2 Certified Associate Developer Exam Example Questions .....</b>	<b>6</b>
Question 1 .....	6
Question 2 .....	6
Question 3 .....	6
Question 4 .....	7
<b>Answer Key.....</b>	<b>10</b>
Question 1 .....	10
Question 2 .....	10
Question 3 .....	10
Question 4 .....	10

## Exam Support Sheet – Online Proctored Tests



### PREPARE 24 Hours in Advance

- Download the software, ensure your PC / Mac is compliant
- Minimum 1mbps upload / download speed, ping 200ms or less
- **Standard English keyboards only**
- **Questions? Visit Kryterion's knowledge base at**

[https://kryterion.force.com/support/s/topic/0TO1W000000I5h3WAC/online-proctoring?language=en\\_US](https://kryterion.force.com/support/s/topic/0TO1W000000I5h3WAC/online-proctoring?language=en_US)



### External Web Cam REQUIRED – NO Integrated Cameras

- **External web camera required** for online proctored exam
- **You cannot use your computer's integrated camera**
- You must be clearly visible looking into the camera



### Phone Support

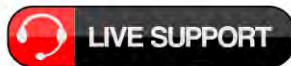
1-877-313-2008 (U.S.)

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- **Change fees after these deadlines** are \$95 to reschedule / cancel a Testing Center exam and \$50 to reschedule / cancel an Online Proctored exam

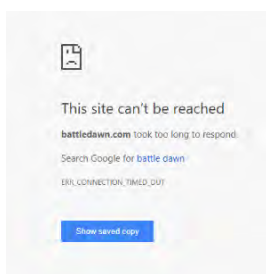


### Scheduled Date / Time

- Check that the Time is in the correct time zone, select your location or it defaults to US times: 1600H USA / Phoenix
- Ensure that all address fields are correctly filled out in your Kryterion account including state/city and country

### Browser Closed During Test?

- Simply restart the test – your time will automatically stop and all your answers will be saved
- Launch the test again and continue
- If you are having problems, change your browser – try Mozilla Firefox, Internet Explorer, or Chrome





## Introduction

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This exam is for a Magento developer who has learned the Magento framework at the basic level covered by the Magento 2 Development Essentials training. Candidates should have experience with PHP, MySQL, Apache/Nginx, and Linux. Those who pass this exam will earn the Magento 2 Associate Developer credential.

This exam will validate the skills and knowledge required for supervised contribution to Magento 2 implementation and customization projects. Specifically, this exam covers UI modifications, database changes, admin modifications, checkout process customizations, order management integrations and customizations, and catalog structure and functionality changes.

**The test is built for 2.3.x version of Magento Commerce and Magento Open Source.**

This exam consists primarily of scenario-based questions in a multiple-choice format.

Sample questions are provided at the end of this guide.

Test time: 90 minutes. Passing score: 68% or above, 60 questions. Available to take remotely or at a test center.

Exam topics and the percentage covered in the test:

• Magento Architecture & Customization Techniques	33%
• Request Flow Processing	7%
• Customizing the Magento UI	15%
• Working with Databases in Magento	18%
• Developing with Adminhtml	11%
• Customizing Magento Business Logic	16%

# Topics and Objectives

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## 1 Magento Architecture and Customization Techniques

### 1.1 Describe the Magento module-based architecture

**Describe module architecture.** What are the significant steps to add a new module? What are the different Composer package types? When would you place a module in the app/code folder versus another location?

### 1.2 Describe the Magento directory structure

**Describe the Magento directory structure.** What are the naming conventions, and how are namespaces established? How can you identify the files responsible for some functionality?

### 1.3 Utilize configuration and configuration variables scope

**Determine how to use configuration files in Magento.** Which configuration files are important in the development cycle?

**Describe development in the context of website and store scopes.** How do you identify the configuration scope for a given variable? How do native Magento scopes (for example, price or inventory) affect development and decision-making processes?

**Demonstrate an ability to add different values for different scopes.** How can you fetch a system configuration value programmatically? How can you override system configuration values for a given store using XML configuration?

### 1.4 Demonstrate how to use dependency injection (DI)

**Demonstrate the ability to use the dependency injection concept in Magento development.** How are objects realized in code? Why is it important to have a centralized object creation process?

**Identify how to use DI configuration files for customizing Magento.** How can you override a native class, inject your class into another object, and use other techniques available in `di.xml` (for example, `virtualTypes`)?

**Given a scenario, determine how to obtain an object using the ObjectManager object.** How would you obtain a class instance from different places in the code?

### 1.5 Demonstrate ability to use plugins

**Demonstrate an understanding of plugins.** How are plugins used in core code? How can they be used for customizations?

### 1.6 Configure event observers and scheduled jobs

**Demonstrate how to create a customization using an event observer.** How are observers registered? How are they scoped for frontend or backend? How are automatic events created, and how should they be used? How are scheduled jobs configured?



## 1.7 Utilize the CLI

**Describe the usage of `bin/magento` commands in the development cycle.** Which commands are available? How are commands used in the development cycle?

## 1.8 Describe how extensions are installed and configured

How would you install and verify an extension by a customer's request?

# 2 Request Flow Processing

## 2.1 Describe how to use Magento modes

Understand the pros and cons of using developer mode or production mode. How do you enable/disable maintenance mode?

## 2.2 Demonstrate the ability to create a frontend controller with different response types (HTML / JSON / redirect)

How do you identify which module/controller corresponds to a given URL? What would you do to create a given URL?

## 2.3 Demonstrate how to use URL rewrites for a catalog product view to a different URL

How is the user-friendly URL of a product or category defined? How can you change it? How do you determine which page corresponds to a given user-friendly URL?

# 3 Customizing the Magento UI

## 3.1 Demonstrate the ability to customize the Magento UI using themes

**Demonstrate the ability to customize the Magento UI using themes.** When would you create a new theme? How do you define theme hierarchy for a project?

## 3.2 Demonstrate an ability to create UI customizations using a combination of a block and template

How do you assign a template to a block? How do you assign a different template to a native block?

## 3.3 Identify the uses of different types of blocks

When would you use non-template block types?

### **3.4 Describe the elements of the Magento layout XML schema, including the major XML directives**

How do you use layout XML directives in your customizations? How do you register a new layout file?

### **3.5 Create and add code and markup to a given page**

How do you add new content to existing pages using layout XML?

## **4 Working with Databases in Magento**

### **4.1 Describe the basic concepts of models, resource models, and collections**

What are the responsibilities of each of the ORM object types? How do they relate to one another?

### **4.2 Describe how entity load and save occurs**

How do you use the native Magento save/load process in the development process?

### **4.3 Describe how to filter, sort, and specify the selected values for collections and repositories**

How do you select a subset of records from the database?

### **4.4 Demonstrate an ability to use declarative schema**

How do you add a column using declarative schema? How do you modify a table added by another module? How do you delete a column? How do you add an index or foreign key using declarative schema? How do you manipulate data using data patches? What is the purpose of schema patches?

## **5 Developing with Adminhtml**

### **5.1 Create a controller for an admin router**

How would you create an admin controller? How do you ensure the right level of security for a new controller?

### **5.2 Define basic terms and elements of system configuration, including scopes, website, store, store view**

How would you add a new system configuration option? What is the difference in this process for different option types (secret, file)?

### **5.3 Define / identify basic terms and elements of ACL**

How would you add a new ACL resource to a new entity? How do you manage the existing ACL hierarchy?

## **5.4 Set up a menu item**

How do you add a new menu item to a given tab? How do you add a new tab to the Admin menu?

## **5.5 Create appropriate permissions for users**

How are menu items related to ACL permissions? How do you add a new user with given set of permissions?

# **6 Customizing Magento Business Logic**

## **6.1 Identify/describe standard product types (simple, configurable, bundled, etc.)**

How would you obtain a product of a specific type, and what tools (in general) does a product type model provide?

## **6.2 Describe category properties in Magento**

How do you create and manage categories?

## **6.3 Define how products are related to the category**

How do you assign and unassign products to categories?

## **6.4 Describe the difference in behavior of different product types in the cart**

How are configurable and bundle products rendered? How can you create a custom shopping cart renderer?

## **6.5 Describe native shipment functionality in Magento**

How do you customize the shipment step of order management?

## **6.6 Describe and customize operations available in the customer account area**

How would you add another tab in the “My Account” section? How do you customize the order history page?

## **6.7 Add or modify customer attributes**

How do you add or modify customer attributes in a setup script?

## **6.8 Customize the customer address**

How do you add another field to the customer address entity using a setup script?

# Magento 2 Certified Associate Developer Exam Example Questions

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See the Answer Key following the questions for answers.

## Question 1

You are building an extension that will be sold on the Magento Marketplace. This extension depends on `Magento_Catalog`.

How is a Magento database upgrade performed?

- A. Automatically when a new module version is detected
- B. Manually on the CLI
- C. Manually in the Admin UI
- D. When the cache is cleared and the module change is present

## Question 2

You're tasked with investigating a custom page layout declared in `MyCompany/MyModule` that isn't loading. You've determined that this is the result of your XML configuration.

Which 2 files do you investigate to locate the issue?

- A. `MyCompany/MyModule/view/frontend/layouts.xml`
- B. `MyCompany/MyModule/view/frontend/layout/page.xml`
- C. `MyCompany/MyModule/view/page_layout/custom.xml`
- D. `MyCompany/MyModule/view/frontend/page_layout/custom.xml`

## Question 3

A merchant would like to manually specify the order of products per category.

How is this done?

- A. This requires a customization.
- B. There is a position field on the category management page which allows you to define the order of a product in the category.
- C. There is a position field on the product management page which defines a position of the product in all categories.
- D. Custom ordering is disabled by default, but can be enabled in System Configuration.

## Question 4

What happens when a customer adds two of the same simple products with different custom options to the cart?

- A. They will be shown as one line item which lists both variations alongside their quantities.
- B. An exception will be thrown because multiple variations of custom options for a simple product cannot be added to the cart.
- C. They will be shown as two separate line items.
- D. Magento will replace the first variation with the second one.





## Answer Key

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### Question 1

**Answer: B**

### Question 2

**Answers: A and D**

### Question 3

**Answer: B**

### Question 4

**Answer: C**