

1. What is the primary purpose of the `@Component` annotation in Spring?

- A) To indicate that a class is a controller in the web layer
- B) To mark a class as a Spring-managed component, allowing automatic detection and bean registration
- C) To specify database transaction boundaries
- D) To define bean configuration in XML files

2. Which of the following is a specialization of `@Component` used specifically for service layer classes?

- A) `@Repository`
- B) `@Controller`
- C) `@Service`
- D) `@Bean`

3. What does the `@Autowired` annotation do in Spring?

- A) It creates a new instance of a class
- B) It automatically injects bean dependencies by type
- C) It configures database connections
- D) It enables Aspect-Oriented Programming

4. In which scenario would using `@Autowired` on a constructor be preferred over field injection?

- A) When you want to reduce the amount of code
- B) When you need to make dependencies mutable
- C) When you want to ensure immutability and mandatory dependencies
- D) When you're using Java versions below 1.5

5. How does Spring differentiate between multiple beans of the same type when using `@Autowired`?

- A) It always chooses the bean with the alphabetically first name
- B) It throws a `NoSuchBeanDefinitionException`
- C) It uses the `@Primary` annotation or `@Qualifier` to resolve ambiguity
- D) It randomly selects one of the beans

Answer Key:

- 1. B) To mark a class as a Spring-managed component, allowing automatic detection and bean registration
- 2. C) `@Service`
- 3. B) It automatically injects bean dependencies by type
- 4. C) When you want to ensure immutability and mandatory dependencies
- 5. C) It uses the `@Primary` annotation or `@Qualifier` to resolve ambiguity