60 MCQs on JUnit Testing in Java

Basic Concepts

1. What is JUnit?
   a) A unit testing framework for Java
   b) A build tool for Java
   c) A dependency injection framework
   d) A logging framework
2. Which annotation is used to mark a method as a test method in JUnit 5?
   a) `@Test`
   b) `@Before`
   c) `@After`
   d) `@Ignore`
3. Which JUnit version introduced the `@BeforeEach` and `@AfterEach` annotations?
   a) JUnit 4
   b) JUnit 5
   c) JUnit 3
   d) JUnit 2
4. What is the purpose of the `@BeforeEach` annotation?
   a) To run a method before each test
   b) To run a method after each test
   c) To ignore a test
   d) To mark a method as a test
5. What is the purpose of the `@AfterEach` annotation?
   a) To run a method after each test
   b) To run a method before each test
   c) To ignore a test
   d) To mark a method as a test

Annotations

6. Which annotation is used to ignore a test in JUnit 5?
   a) `@Disabled`
   b) `@Ignore`
   c) `@Skip`
   d) `@NotTest`
7. Which annotation is used to run a method once before all tests in a class in JUnit 5?
   a) `@BeforeAll`
   b) `@BeforeClass`
   c) `@BeforeEach`
   d) `@BeforeTest`
8. Which annotation is used to run a method once after all tests in a class in JUnit 5?
   a) `@AfterAll`
   b) `@AfterClass`
   c) `@AfterEach`
   d) `@AfterTest`
9. Which annotation is used to group multiple test classes in JUnit 5?
   a) `@Suite`
   b) `@TestSuite`
   c) `@RunWith`
   d) `@Nested`
10. Which annotation is used to define a custom display name for a test in JUnit 5?
    a) `@DisplayName`
    b) `@TestName`
    c) `@Name`
    d) `@Label`

Assertions

11. Which method is used to assert that two objects are equal in JUnit 5?
    a) assertEquals()
    b) assertSame()
    c) assertTrue()
    d) assertNotNull()
12. Which method is used to assert that a condition is true in JUnit 5?
    a) assertTrue()
    b) assertFalse()
    c) assertEquals()
    d) assertNull()
13. Which method is used to assert that an object is null in JUnit 5?
    a) assertNull()
    b) assertNotNull()
    c) assertTrue()
    d) assertFalse()
14. Which method is used to assert that two objects refer to the same object in JUnit 5?
    a) assertSame()
    b) assertEquals()
    c) assertTrue()
    d) assertNotNull()
15. Which method is used to assert that an exception is thrown in JUnit 5?
    a) assertThrows()
    b) assertException()
    c) assertError()
    d) assertFail()

Test Lifecycle

16. What is the order of execution for the following annotations in JUnit 5?
    @BeforeAll , @BeforeEach , @Test , @AfterEach , @AfterAll
    a) @BeforeAll → @BeforeEach → @Test → @AfterEach → @AfterAll
    b) @BeforeEach → @BeforeAll → @Test → @AfterAll → @AfterEach
    c) @BeforeAll → @Test → @BeforeEach → @AfterEach → @AfterAll
    d) @BeforeEach → @Test → @AfterEach → @BeforeAll → @AfterAll
17. Which annotation is used to run a method before all tests in a class in JUnit 4?
    a) @BeforeClass
    b) @BeforeAll
    c) @BeforeEach
    d) @BeforeTest
18. Which annotation is used to run a method after all tests in a class in JUnit 4?
    a) @AfterClass
    b) @AfterAll
    c) @AfterEach
    d) @AfterTest
19. Which annotation is used to run a method before each test in JUnit 4?
    a) @Before
    b) @BeforeEach
    c) @BeforeAll
    d) @BeforeTest
20. Which annotation is used to run a method after each test in JUnit 4?
    a) @After
    b) @AfterEach
    c) @AfterAll
    d) @AfterTest

Parameterized Tests

21. Which annotation is used to create a parameterized test in JUnit 5?
    a) @ParameterizedTest
    b) @Test
    c) @Parameters
    d) @ValueSource
22. Which annotation is used to provide values for a parameterized test in JUnit 5?
    a) @ValueSource
    b) @Test
    c) @Parameters
    d) @ParameterizedTest
23. Which annotation is used to provide a CSV file as input for a parameterized test in JUnit 5?
    a) @CsvFileSource
    b) @CsvSource
    c) @ValueSource
    d) @Parameters
24. Which annotation is used to provide a method as a source for a parameterized test in JUnit 5?
    a) @MethodSource
    b) @ValueSource
    c) @CsvSource
    d) @Parameters
25. Which annotation is used to provide an enum as a source for a parameterized test in JUnit 5?
    a) @EnumSource
    b) @ValueSource
    c) @CsvSource
    d) @Parameters

Advanced Concepts

26. Which annotation is used to define a nested test class in JUnit 5?
    a) @Nested
    b) @Test
    c) @Suite
    d) @RunWith
27. Which annotation is used to define a custom test runner in JUnit 4?
    a) @RunWith
    b) @Test
    c) @Suite
    d) @Nested
28. Which annotation is used to define a test suite in JUnit 4?
    a) @Suite
    b) @RunWith
    c) @Test
    d) @Nested
29. Which annotation is used to define a timeout for a test in JUnit 5?
    a) @Timeout
    b) @Test
    c) @RunWith
    d) @Suite
30. Which annotation is used to define a repeated test in JUnit 5?
    a) @RepeatedTest
    b) @Test
    c) @RunWith
    d) @Suite

True/False Questions

31. JUnit 5 is backward compatible with JUnit 4. (True/False)
32. The `@Test` annotation is used to mark a method as a test in both JUnit 4 and JUnit 5. (True/False)
33. The `@Before` annotation in JUnit 4 is equivalent to the `@BeforeEach` annotation in JUnit 5. (True/False)
34. The `@AfterClass` annotation in JUnit 4 is equivalent to the `@AfterAll` annotation in JUnit 5. (True/False)
35. The `@Ignore` annotation in JUnit 4 is equivalent to the `@Disabled` annotation in JUnit 5. (True/False)

Scenario-Based Questions

36. Which annotation should be used to initialize a database connection before all tests in a class?
    a) `@BeforeAll`
    b) `@BeforeEach`
    c) `@BeforeClass`
    d) `@BeforeTest`
37. Which annotation should be used to clean up resources after each test?
    a) `@AfterEach`
    b) `@AfterAll`
    c) `@AfterClass`
    d) `@AfterTest`
38. Which annotation should be used to ignore a failing test temporarily?
    a) `@Disabled`
    b) `@Ignore`
    c) `@Skip`
    d) `@NotTest`
39. Which annotation should be used to group multiple test classes into a suite?
    a) `@Suite`
    b) `@RunWith`
    c) `@Nested`
    d) `@TestSuite`
40. Which annotation should be used to define a custom display name for a test?
    a) `@DisplayName`
    b) `@TestName`
    c) `@Name`
    d) `@Label`

Code-Based Questions

41. Which of the following is the correct way to write a JUnit 5 test method?

```java
@Test
void testMethod() {
    assertEquals(2, 1 + 1);
}
```

    a) Correct
    b) Incorrect
42. Which of the following is the correct way to write a JUnit 4 test method?

```java
@Test
public void testMethod() {
    assertEquals(2, 1 + 1);
}
```

a) Correct
b) Incorrect

43. Which of the following is the correct way to assert that an exception is thrown in JUnit 5?

```java
@Test
void testException() {
    assertThrows(ArithmeticException.class, () -> {
        int result = 1 / 0;
    });
}
```

a) Correct
b) Incorrect

44. Which of the following is the correct way to write a parameterized test in JUnit 5?

```java
@ParameterizedTest
@ValueSource(ints = {1, 2, 3})
void testParameterized(int number) {
    assertTrue(number > 0);
}
```

a) Correct
b) Incorrect

45. Which of the following is the correct way to write a repeated test in JUnit 5?

```java
@RepeatedTest(3)
void testRepeated() {
    assertEquals(2, 1 + 1);
}
```

a) Correct
b) Incorrect

Remaining Questions (46–60)

46. Which method is used to assert that two arrays are equal in JUnit 5?
    a) assertArrayEquals()
    b) assertEquals()
    c) assertSame()
    d) assertTrue()
47. Which method is used to assert that a condition is false in JUnit 5?
    a) assertFalse()
    b) assertTrue()
    c) assertEquals()
    d) assertNull()
48. Which method is used to assert that an object is not null in JUnit 5?
    a) assertNotNull()
    b) assertNull()
    c) assertTrue()
    d) assertFalse()
49. Which method is used to assert that two objects do not refer to the same object in JUnit 5?
    a) assertNotSame()
    b) assertEquals()
    c) assertTrue()
    d) assertNotNull()
50. Which method is used to assert that a test fails in JUnit 5?
    a) fail()
    b) assertFail()
    c) assertException()
    d) assertError()
51. Which annotation is used to define a custom test runner in JUnit 5?
    a) @ExtendWith

b) `@RunWith`
c) `@Suite`
d) `@Nested`

52. Which annotation is used to define a test suite in JUnit 5?
    a) `@Suite`
    b) `@RunWith`
    c) `@Test`
    d) `@Nested`

53. Which annotation is used to define a timeout for a test in JUnit 4?
    a) `@Test(timeout = 1000)`
    b) `@Timeout(1000)`
    c) `@Test`
    d) `@RunWith`

54. Which annotation is used to define a repeated test in JUnit 4?
    a) `@RepeatedTest`
    b) `@Test`
    c) `@RunWith`
    d) `@Suite`

55. Which annotation is used to define a custom display name for a test in JUnit 4?
    a) `@DisplayName`
    b) `@TestName`
    c) `@Name`
    d) `@Label`

56. Which annotation is used to define a nested test class in JUnit 4?
    a) `@Nested`
    b) `@Test`
    c) `@Suite`
    d) `@RunWith`

57. Which annotation is used to define a custom test runner in JUnit 5?
    a) `@ExtendWith`
    b) `@RunWith`
    c) `@Suite`
    d) `@Nested`

58. Which annotation is used to define a test suite in JUnit 5?
    a) `@Suite`
    b) `@RunWith`
    c) `@Test`
    d) `@Nested`

59. Which annotation is used to define a timeout for a test in JUnit 4?
    a) `@Test(timeout = 1000)`
    b) `@Timeout(1000)`
    c) `@Test`
    d) `@RunWith`

60. Which annotation is used to define a repeated test in JUnit 4?
    a) `@RepeatedTest`
    b) `@Test`
    c) `@RunWith`
    d) `@Suite`

Conclusion

These 60 MCQs cover all aspects of **JUnit Testing in Java**, from basic concepts to advanced features. Use them to test your understanding and prepare for your exam. Good luck!