

Part A – Basic Scala MCQs (1–100)

Scala Fundamentals

Q1. Which of the following is the correct file extension for Scala files?

- A. `.sc`
- B. `.scala`
- C. `.scl`
- D. `.sl`

Answer: B

Q2. Which command starts the Scala REPL?

- A. `scalac`
- B. `scala`
- C. `sc`
- D. `sbt`

Answer: B

Q3. In Scala, `val` represents:

- A. Mutable variable
- B. Immutable variable
- C. Constant that can change
- D. None

Answer: B

Q4. Which keyword is used to define a function in Scala?

- A. `fun`
- B. `def`
- C. `function`
- D. `fn`

Answer: B

Q5. What is the default return type of a Scala method if not specified?

- A. `Any`
- B. `Unit`
- C. `Null`
- D. `Object`

Answer: B

Q6. Which of the following is true about Scala?

- A. It is statically typed
- B. It runs only on JVM
- C. It is dynamically typed
- D. It cannot be used with Java

Answer: A

Q7. What does `println(10/3)` return in Scala?

- A. `3.3333`
- B. `3`
- C. `3.0`
- D. Error

Answer: B

Q8. Which collection is immutable in Scala?

- A. `ArrayBuffer`
- B. `List`
- C. `Array`
- D. `HashMap`

Answer: B

Q9. Which of the following is true about `Option` in Scala?

- A. Represents nullable values
- B. Represents Either true/false
- C. Represents only `None`
- D. Replaces primitive types

Answer: A

Q10. What is the result of `Some(5).getOrElse(0)`?

- A. `None`
- B. `5`
- C. `0`
- D. Error

Answer: B

Object-Oriented Scala

Q11. Which keyword is used to define a class in Scala?

- A. `object`
- B. `class`
- C. `def`

D. `case`

Answer: B

Q12. What is a `case class` in Scala?

A. A normal class

B. Immutable class with built-in methods like `toString` and `equals`

C. Class that cannot be instantiated

D. Class used only in Spark

Answer: B

Q13. Which of the following allows creating a singleton in Scala?

A. `object`

B. `val`

C. `case class`

D. `def`

Answer: A

Q14. What is the primary constructor in Scala?

A. Defined inside the class body

B. Defined with parameters after the class name

C. Defined using `def`

D. Defined using `object`

Answer: B

Q15. Which keyword is used for inheritance in Scala?

A. `extends`

B. `inherits`

C. `:`

D. `derive`

Answer: A

Functional Programming

Q16. In Scala, functions are:

A. First-class citizens

B. Not objects

C. Always static

D. Always inline

Answer: A

Q17. What is the result of `List(1,2,3).map(_ * 2)`?

- A. `[2,3,4]`
- B. `[2,4,6]`
- C. `[1,4,9]`
- D. Error

Answer: B

Q18. Which higher-order function applies a function and flattens the result?

- A. `map`
- B. `flatMap`
- C. `filter`
- D. `reduce`

Answer: B

Q19. What is the result of `List(1,2,3).reduce(_+_)`?

- A. `6`
- B. `[1,2,3]`
- C. `[6]`
- D. Error

Answer: A

Q20. What does `lazy val` in Scala mean?

- A. Evaluated eagerly
- B. Evaluated only once when accessed
- C. Evaluated multiple times
- D. Not initialized

Answer: B

Collections & Pattern Matching

Q21. What is the result of `List(1,2,3).filter(_ > 1)`?

- A. `[1]`
- B. `[2,3]`
- C. `[1,2]`
- D. `[3]`

Answer: B

Q22. Which data structure is mutable in Scala?

- A. `List`
- B. `Vector`

C. `ArrayBuffer`

D. `Stream`

Answer: C

Q23. Which keyword is used in Scala for pattern matching?

A. `if`

B. `case`

C. `match`

D. Both B and C

Answer: D

Q24. What is the result of:

```
val x = 5
x match {
  case 1 => "One"
  case 5 => "Five"
  case _ => "Other"
}
```

A. "One"

B. "Five"

C. "Other"

D. Error

Answer: B

Q25. What does `Tuple(1, "Scala", 3.5)` create?

A. Array

B. Tuple3

C. List

D. Map

Answer: B

I'll stop **Part A here at Q25** as a sample. (The full Part A has 100 MCQs → covering more on collections, concurrency, traits, implicit conversions, type system, etc.)

Part B – Spark/ETL with Scala MCQs (101–200)

Spark Basics

Q101. In Spark, the entry point for programming with Scala is:

- A. `SparkJob`
- B. `SparkSession`
- C. `SparkDriver`
- D. `RDD`

Answer: B

Q102. Which method reads a CSV file into DataFrame?

- A. `spark.read.csv("file.csv")`
- B. `spark.csv("file.csv")`
- C. `spark.load.csv("file.csv")`
- D. `read.csv("file.csv")`

Answer: A

Q103. What does `rdd.collect()` do?

- A. Saves data to HDFS
- B. Brings all data to driver
- C. Persists RDD in memory
- D. Deletes the RDD

Answer: B

Q104. Which is true about RDDs?

- A. Immutable
- B. Mutable
- C. Stored in arrays
- D. Always persisted by default

Answer: A

Q105. Which of the following is an action in Spark?

- A. `map`
- B. `filter`
- C. `reduce`
- D. `flatMap`

Answer: C

ETL Transformations

Q106. Which operation removes duplicate rows in Spark DataFrame?

- A. `dropDuplicates()`
- B. `unique()`
- C. `distinct()`
- D. Both A & C

Answer: D

Q107. Which method is used to write DataFrame as a Parquet file?

- A. `df.save("parquet")`
- B. `df.write.parquet("path")`
- C. `df.toParquet("path")`
- D. `spark.write.parquet("path")`

Answer: B

Q108. Which method converts a DataFrame column to a timestamp in Spark?

- A. `to_date()`
- B. `to_timestamp()`
- C. `cast("date")`
- D. Both B & C

Answer: D

Q109. Which Spark function is used to perform aggregations?

- A. `groupBy()`
- B. `agg()`
- C. `reduceByKey()`
- D. All of the above

Answer: D

Q110. What is the difference between `map()` and `flatMap()` in Spark?

- A. Both same
- B. `flatMap` flattens results
- C. `map` only for RDDs
- D. `flatMap` only for DataFrames

Answer: B

Spark SQL & DataFrames

Q111. Which of the following registers a DataFrame as SQL temporary view?

- A. `df.registerTable()`
- B. `df.createOrReplaceTempView("table")`
- C. `df.sqlView("table")`
- D. `df.as("table")`

Answer: B

Q112. Which function is used to select specific columns in Spark?

- A. `df.filter()`
- B. `df.select()`
- C. `df.project()`
- D. `df.columns()`

Answer: B

Q113. What is the output of:

```
val df = Seq((1, "A"), (2, "B")).toDF("id", "name")
df.count()
```

- A. 0
- B. 1
- C. 2
- D. Error

Answer: C

Q114. What is the default shuffle partitions in Spark 3.x?

- A. 100
- B. 200
- C. 500
- D. 1000

Answer: B

Q115. Which Spark SQL function replaces null with a default value?

- A. `fillna()`
- B. `replace()`
- C. `coalesce()`
- D. `when()`

Answer: A

ETL Pipeline Oriented

Q150. Which Spark API is best for structured ETL workflows?

- A. RDD
- B. DataFrame
- C. Dataset
- D. Both B & C

Answer: D

Q151. Which Spark method is used to join two DataFrames?

- A. `df.union()`
- B. `df.join()`
- C. `df.merge()`
- D. `df.concat()`

Answer: B

Q152. What does `.persist(StorageLevel.MEMORY_ONLY)` do?

- A. Saves data to disk
- B. Caches data in memory only
- C. Deletes RDD
- D. Moves data to driver

Answer: B

Q153. In Spark ETL, which function is used to rename a column?

- A. `df.renameColumn()`
- B. `df.withColumnRenamed()`
- C. `df.alterColumn()`
- D. `df.changeColumn()`

Answer: B

Q154. Which function is used for window-based aggregations in Spark?

- A. `window()`
- B. `over()`
- C. `groupBy()`
- D. Both A & B

Answer: D

Scala & Spark/ETL MCQs – Full Set (200)

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- B. `Unit`
- C. `Null`
- D. `Object`

Answer: B

Q6. Scala is primarily:

- A. Statically typed
- B. Dynamically typed
- C. Weakly typed
- D. Untyped

Answer: A

Q7. What does `println(10/3)` return in Scala?

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- A. 6
- B. `[1,2,3]`
- C. `[6]`
- D. Error

Answer: A

Q20. What does `lazy val` in Scala mean?

- A. Evaluated eagerly
- B. Evaluated only once when accessed
- C. Evaluated multiple times
- D. Not initialized

Answer: B

Collections & Pattern Matching (Q21–Q40)

Q21. What is the result of `List(1,2,3).filter(_ > 1)`?

- A. `[1]`
- B. `[2,3]`
- C. `[1,2]`
- D. `[3]`

Answer: B

Q22. Which data structure is mutable in Scala?

- A. `List`
- B. `Vector`
- C. `ArrayBuffer`
- D. `Stream`

Answer: C

Q23. Which keyword is used in Scala for pattern matching?

- A. `if`
- B. `case`
- C. `match`
- D. Both B and C

Answer: D

Q24. What is the result of:

```
val x = 5
```

```
x match {  
  case 1 => "One"  
  case 5 => "Five"  
  case _ => "Other"  
}
```

- A. "One"
- B. "Five"
- C. "Other"
- D. Error

Answer: B

Q25. What does `Tuple(1, "Scala", 3.5)` create?

- A. Array
- B. Tuple3
- C. List
- D. Map

Answer: B

Q26. Which method returns the head of a list?

- A. `first()`
- B. `top()`
- C. `head`
- D. `peek()`

Answer: C

Q27. Which method removes duplicates from a list?

- A. `unique()`
- B. `distinct`
- C. `dropDuplicates`
- D. `remove()`

Answer: B

Q28. Which keyword defines a trait?

- A. `trait`
- B. `interface`
- C. `abstract`
- D. `mixin`

Answer: A

Q29. Traits in Scala are similar to:

- A. Java interfaces

- B. Java abstract classes
- C. Both A & B
- D. None

Answer: C

Q30. Which of the following is NOT a Scala collection?

- A. `List`
- B. `Map`
- C. `Set`
- D. `Record`

Answer: D

Q31. Which of the following defines an immutable map?

- A. `Map()`
- B. `mutable.Map()`
- C. `HashMap()`
- D. `ArrayMap()`

Answer: A

Q32. What is the output of:

```
val arr = Array(1,2,3)
arr(0)
```

- A. 0
- B. 1
- C. Error
- D. None

Answer: B

Q33. Which method adds elements at the end of a `ListBuffer`?

- A. `+=`
- B. `append`
- C. `:+`
- D. All of the above

Answer: D

Q34. Which of these is used for infinite sequences?

- A. `Seq`
- B. `Stream`
- C. `List`

D. `Range`

Answer: B

Q35. Which method sorts a collection in Scala?

A. `sort()`

B. `sortBy()`

C. `sorted`

D. Both B & C

Answer: D

Q36. In Scala, which operator is right-associative?

A. `::`

B. `:+`

C. `++`

D. `--`

Answer: A

Q37. What is the result of `"Scala".reverse`?

A. `alaSc`

B. `alacS`

C. `Scala`

D. `Error`

Answer: B

Q38. Which is used to define anonymous functions in Scala?

A. `=>`

B. `->`

C. `:`

D. `fn`

Answer: A

Q39. What is the result of `(1 to 5).sum`?

A. 15

B. 10

C. 5

D. Error

Answer: A

Q40. Which is the base class of all classes in Scala?

A. `Any`

B. `Object`

C. `Root`

D. [Top](#)

Answer: A