MCQs

1. **Which of the following is a feature of Python?**
   * A) Strongly typed language
   * B) Interpreted language
   * C) Requires compilation before execution
   * D) Low-level programming
   * *Answer:\** B) Interpreted language
2. **What command is used to execute a Python program from the command line?**
   * A) run python filename.py
   * B) python filename.py
   * C) execute filename.py
   * D) start filename.py
   * *Answer:\** B) python filename.py
3. **Which of the following is NOT a valid Python data type?**
   * A) int
   * B) float
   * C) real
   * D) bool
   * *Answer:\** C) real
4. **What is the output of the following code: print(type(10))?**
   * A) <class 'int'>
   * B) <class 'float'>
   * C) <class 'str'>
   * D) <class 'bool'>
   * *Answer:\** A) <class 'int'>
5. **Which loop is guaranteed to execute at least once in Python?**
   * A) for loop
   * B) while loop
   * C) do-while loop
   * D) None of the above
   * *Answer:\** D) None of the above
6. **Which of the following methods can be used to convert a string to lowercase in Python?**
   * A) lower()
   * B) down()
   * C) to\_lowercase()
   * D) str\_lower()
   * *Answer:\** A) lower()
7. **What is the purpose of the else statement in Python?**
   * A) To execute a block of code when the if condition is true
   * B) To execute a block of code when the if condition is false
   * C) To repeat a block of code
   * D) To break out of a loop
   * *Answer:\** B) To execute a block of code when the if condition is false
8. **Which function in NumPy can be used to compute the dot product of two arrays?**
   * A) np.multiply()
   * B) np.product()
   * C) np.dot()
   * D) np.cross()
   * *Answer:\** C) np.dot()
9. **Which of the following statements is true about Python lists?**
   * A) Lists are mutable
   * B) Lists are immutable
   * C) Lists can store only one data type
   * D) Lists cannot be indexed
   * *Answer:\** A) Lists are mutable
10. **How can you rename columns in a Pandas DataFrame?**
    * A) df.columns.rename()
    * B) df.rename(columns=...)
    * C) df.rename\_col()
    * D) df.modify\_columns()
    * *Answer:\** B) df.rename(columns=...)
11. **What does the value\_counts() function in Pandas do?**
    * A) It returns the unique values in a DataFrame
    * B) It counts the frequency of unique values in a column
    * C) It counts the number of rows in a DataFrame
    * D) It counts the non-null values in a column
    * *Answer:\** B) It counts the frequency of unique values in a column
12. **Which keyword is used to define a function in Python?**
    * A) func
    * B) function
    * C) def
    * D) define
    * *Answer:\** C) def
13. **What will be the output of the following code? x = 5; y = 10; if x > 3 and y < 15: print("Condition True") else: print("Condition False")**
    * A) Condition True
    * B) Condition False
    * C) Error
    * D) No output
    * *Answer:\** A) Condition True
14. **Which of the following methods is used to add an element at a specific position in a list?**
    * A) insert()
    * B) append()
    * C) add()
    * D) extend()
    * *Answer:\** A) insert()
15. **Which Seaborn function is used to create box plots?**
    * A) boxplot()
    * B) barplot()
    * C) violinplot()
    * D) scatterplot()
    * *Answer:\** A) boxplot()
16. **Which argument in the plot() function is used to specify the color of the line in Matplotlib?**
    * A) color
    * B) linecolor
    * C) c
    * D) linestyle
    * *Answer:\** A) color
17. **What is the correct way to create a tuple in Python?**
    * A) my\_tuple = {1, 2, 3}
    * B) my\_tuple = [1, 2, 3]
    * C) my\_tuple = (1, 2, 3)
    * D) my\_tuple = <1, 2, 3>
    * *Answer:\** C) my\_tuple = (1, 2, 3)
18. **Which of the following is an immutable data type in Python?**
    * A) List
    * B) Set
    * C) Tuple
    * D) Dictionary
    * *Answer:\** C) Tuple
19. **How do you set the labels for the x and y axes in Matplotlib?**
    * A) plt.axis()
    * B) plt.xlabel() and plt.ylabel()
    * C) plt.label()
    * D) plt.axes()
    * *Answer:\** B) plt.xlabel() and plt.ylabel()
20. **Which of the following functions is used to concatenate multiple DataFrames?**
    * A) concat()
    * B) join()
    * C) merge()
    * D) append()
    * *Answer:\** A) concat()
21. **What will np.array([1, 2, 3]) + 5 return?**
    * A) [1, 2, 3, 5]
    * B) [6, 7, 8]
    * C) 5
    * D) None
    * *Answer:\** B) [6, 7, 8]
22. **What will be the output of the following code? for i in range(2, 5): print(i)?**
    * A) 1 2 3 4
    * B) 2 3 4
    * C) 2 3 4 5
    * D) 0 1 2 3 4
    * *Answer:\** B) 2 3 4
23. **What does the .corr() method in Pandas return?**
    * A) Covariance of variables
    * B) Correlation matrix of numerical columns
    * C) Counts of unique values
    * D) The range of numerical values
    * *Answer:\** B) Correlation matrix of numerical columns
24. **Which parameter in the scatter() function sets the size of the markers?**
    * A) s
    * B) size
    * C) scale
    * D) marker\_size
    * *Answer:\** A) s
25. **Which of the following functions can be used to generate a sequence of numbers in NumPy with a fixed step size?**
    * A) np.linspace()
    * B) np.arange()
    * C) np.range()
    * D) np.step()
    * *Answer:\** B) np.arange()