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Topic	Data Types	**Last updated on**	10 August 2024

1. Which of these is not a core data type?
   a. Lists
   b. Dictionary
   c. Tuples
   d. Class

Ans: d. Class

Explanation: Class is a user defined data type.

2. Given a function that does not return any value, What value is thrown by default when executed in shell.
   a. int
   b. bool
   c. void
   d. None

Ans: d. None

Explanation: Python shell throws a None Type object back.

3. What will be the data type of x after the following statement if input entered is 18?

```
x = input ('Enter a number: ')
```

   a. Float
   b. String
   c. List
   d. Integer

Ans: b. String

Explanation: The input () function in Python always returns a string, regardless of the input. So, if you enter 18, x will be a string. Therefore, the data type of x will be String.

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4. What will be the data type of x after the following statement?

x = 1/2

   a. Integer
   b. List
   c. String
   d. Float

Ans: d. Float

Explanation: In Python, the division operator / always produces a float, even if both operands are integers. So, x = 1 / 2 will result in a float.

5. What is the value of the None Type data type?
   a. Undefined
   b. Null
   c. Nan
   d. None

Ans: d. None

Explanation: In Python, None is a special constant used to signify the absence of a value. It represents a null or empty state and is unique to Python, distinct from undefined, Null.

6. Which of the following are immutable?
   a. Number
   b. String
   c. Tuple
   d. All of the above

Ans: d. All of the above

Explanation: In Python, numbers, strings, and tuples are all immutable, meaning their values cannot be changed after they are created.

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7. Scientific notation for float number 0.0001234 is _____.
    a. 1234e-10
    b. 1.234e-4
    c. 0.1234E-6
    d. None of the above

Ans: b. 1.234e-4

Explanation: The scientific notation for the float number 0.0001234 is 1.234e-4. This notation expresses the number as 1.234 multiplied by 10 raised to the power of -4.

8. What is true about complex numbers?
    a. The real and imaginary component can be float
    b. The real part should be an integer
    c. Scientific notation cannot be used in complex number
    d. All of the above

Ans: a. The real and imaginary component can be float

Explanation: In Python, complex numbers can have both real and imaginary parts as floats. Scientific notation can be used for these parts if needed.

9. Which of the following functions can be useful to convert?
    a. String to Integer
    b. Hexadecimal to integer
    c. Float to int
    d. All of the above

Ans: d. All of the above

Explanation: Using int () to convert strings to integers, hexadecimal to integers, and floats to integers. So, all of the above conversions are possible.

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10. Which of the following is not a valid integer in python?
    a. 0o123
    b. 123
    c. 0123
    d. 0x123

Ans: c. 0123

Explanation: In Python, 0123 is not a valid integer due to leading zeros. Valid formats include decimal (123), octal (0o123), and hexadecimal (0x123).

11. What is the data type of number 5?
    a. int
    b. float
    c. str
    d. list

Ans: a. int

Explanation: The data type of 5 in Python is int, which stands for integer.

12. Which of the following is a floating-point number in Python?
    a. 3
    b. 3.0
    c. "3.0"
    d. [3.0]

Ans: b. 3.0

Explanation: In Python, 3.0 is a floating-point number. The other options represent an integer, a string, and a list, respectively.

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13. How do you represent a string in Python?
    a. Using single or double quotes
    b. With curly braces {}
    c. With square brackets []
    d. With parentheses ()

Ans: a. Using single or double quotes

Explanation: In Python, strings are represented using single quotes (') or double quotes (")

14. What is the data type of the following? ["apple", "banana", "cherry"]
    a. List
    b. Tuple
    c. Dictionary
    d. Set

Ans: a. List

Explanation: The data type of ["apple", "banana", "cherry"] is a list. Lists are used to store multiple items in a single variable.

15. Which data type would you use to store a sequence of immutable Python objects?
    a. List
    b. Tuple
    c. Set
    d. Dictionary

Ans: b. Tuple

Explanation: To store a sequence of immutable Python objects, you would use a tuple. Tuples are immutable, meaning their contents cannot be changed after creation.

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16. What is the result of type (3 + 1.5)?
    a. int
    b. float
    c. str
    d. list

Ans: b. float

Explanation: The result of type (3 + 1.5) is float because adding an integer (3) and a float (1.5) results in a float.

17. What is the output of len("Hello")?
    a. 5
    b. 4
    c. Error
    d. "Hello"

Ans: a. 5

Explanation: The len () function returns the number of characters in a string.

18. How do you create a list with 5 zeros?
    a. [0] * 5
    b. 0*5
    c. [5] * 0
    d. [0,0,0,0,0]

Ans: a. [0] * 5

Explanation: To create a list with 5 zeros, you use [0] * 5, which replicates the zero element 5 times.

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19. Python provides a Boolean data type. Objects of Boolean type may have one of two values, _____or _____.
    a. True or False
    b. TRUE or FALSE
    c. 0 or 1
    d. 0 or 5

Ans: a. True or False

Explanation: Python provides a Boolean data type with two possible values: True or False.

20. How would you express the hexadecimal value a5 as a base-16 integer constant in Python?
    a. Oxa5
    b. 0xa5
    c. Hxa5
    d. hexa5

Ans: b. 0xa5

Explanation: Python provides a Boolean data type with two possible values: True or False.

21. How would you express the constant floating-point value 3.2 × 10-12 in Python?
    a. 3.2x2-5
    b. 3.2xe-12
    c. 3.20000xe-8
    d. 0.032xe-12

Ans: b. 3.2xe-12

Explanation: To express the constant floating-point value 3.2×10−123.2 \times 10^{-12}3.2×10−12 in Python, you use scientific notation. The correct way to write this is 3.2e-12.

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22. Which of the following functions can be used to find the data type of a variable?

a. data ()
b. type ()
c. true ()
d. str ()

Ans: b. type ()

Explanation: To find the data type of a variable in Python, you use the type () function.

23. What will be the datatype of x after the following statements?

false =" This is not true"
x=false

a. List
b. String
c. Dictionary
d. Boolean

Ans: b. String

Explanation: The variable x will have the same data type as false, which is a string.

24. Which of the following is an immutable data type? (Values that cannot be changed)

a. List
b. Dictionary
c. Tuple
d. Set

Ans: c. Tuple

Explanation: Tuples cannot be modified after they are created, whereas lists, dictionaries, and sets are mutable.

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25. Which of the following has only unique values?

a. List
b. Dictionary
c. Tuple
d. Set

Ans: d. Set

Explanation: Sets in Python automatically enforce uniqueness, meaning they do not allow duplicate values.

26. What will be the data type of x after the following statement if input entered is 64?

x = float (input ('Enter a number: '))

a. Integer
b. String
c. List
d. Float

Ans: d. Float

Explanation: If the input entered is 64, the input () function returns a string, and float () converts this string to a floating-point number.

27. What is the data type of an after the following statement?

a = {'A', 'B', 'C', 'D'}

a. List
b. Dictionary
c. Tuple
d. Set

Ans: d. Set

Explanation: The data type of a is a set, which is a collection of unique elements.

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28. What will be the data type of the output after the following statements?

```
x=" Today"
Print(x)
```

a. Type error
b. String
c. Tuple
d. List

Ans: b. String

Explanation: The output will be " Today", which is a string. Thus, the data type of the output is string

29. Which data type can be used to store the percentage obtained by a student?

a. Boolean
b. Float
c. String
d. Integer

Ans: b. Float

Explanation: To store the percentage obtained by a student, which may involve decimal values, you should use the float data type. This allows you to represent numbers with decimal points.

30. What is data type in Python?

a. The type of a variable
b. The type of data variable is holding
c. Both A and B
d. None

Ans: b. The type of data variable is holding

Explanation: Python variable type is dependent on the type of data being assigned to it.

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31. Is Python a dynamically typed programming language?
    a. TRUE
    b. FALSE

Ans: a. TRUE

Explanation: Yes. Python is a dynamically typed language. So, you do not need to exclusively specify the type of variable at compile time.

32. Choose the correct Ans about Python Data type:
    a. Data type is resolved at runtime
    b. Specifying Data type at compile time is not required
    c. The type of a variable is nothing but the type of data being assigned to it.
    d. All the above

Ans: d. All the above

Explanation: In Python, data types are determined at runtime, and you do not need to specify the type of a variable at compile time. The type of a variable corresponds to the type of data assigned to it.

33. Identify correct Python built in data types below:
    a. int
    b. float
    c. complex
    d. All the above

Ans: d. All the above

Explanation: In Python, the built-in data types include int, float, and complex.

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34. Choose the numeric data type below:

a. 10
b. 10.9
c. 10 + 9j
d. All the above

Ans: d. All the above

Explanation: All options are numeric data types in Python: 10 is an integer, 10.9 is a float, and 10 + 9j is a complex number.

35. What is the output of the following?

print (0.2+0.4==0.6)

a. True
b. False
c. Error
d. Depends on machine

Ans: b. False

Explanation: The output of print (0.2 + 0.4 == 0.6) is False. This is due to the way floating-point arithmetic works in computers, which can lead to precision issues.

36. What does the expression bool(0) evaluate to?

a. True
b. False
c. None
d. Error

Ans: b. False

Explanation: In Python, bool(0) evaluates to False because 0 is considered False in a boolean context.

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37. What does the expression int(True) evaluate to?

a. 0
b. 1
c. True
d. False

Ans: b. 1

Explanation: In Python, True is equivalent to 1 when converted to an integer using int().

38. Which of the following Python data types is immutable?

a. List
b. Dictionary
c. String
d. Set

Ans: c. String

Explanation: Strings are immutable, meaning once a string is created, it cannot be changed. Any modification creates a new string.

39. How is an element of a string accessed?

a. Using the index
b. Using the key
c. Using the slice notation
d. Using a loop

Ans: a. Using the index

Explanation: Elements of a string are accessed by specifying their index in square brackets, starting from 0. For example, s[2] returns the third character of the string s.

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40. What is slicing in a string?

a. Retrieving a part of the string

b. Reversing the string

c. Converting the string to uppercase

d. Finding the length of the string

Ans: a. Retrieving a part of the string

Explanation: Slicing is used to extract a specific segment of a string using the syntax s[start:end]. For example, "hello"[1:4] gives "ell".