

Python Interview Questions and Answers

1. Differentiate between lists and tuples.

Lists are mutable and use [], tuples are immutable and use ().

2. What are negative indices?

They access elements from the end. Example: list[-1] gives the last item.

3. How long can an identifier be in Python?

No fixed limit, but it should be readable.

4. How would you convert a string into lowercase?

Use string.lower()

5. What is the pass statement in Python?

It is a null operation; used as a placeholder.

6. Explain help() and dir() functions in Python.

help() shows documentation, dir() lists attributes.

7. How do you get a list of all the keys in a dictionary?

Use list(dict.keys())

8. What is slicing?

Extracting a portion using [start:end:step]

9. How would you declare a comment in Python?

Use # before the comment.

10. How will you check if all characters in a string are alphanumeric?

Use string.isalnum()

11. How will you capitalize the first letter of a string?

Use string.capitalize()

12. With Python, how do you find out which directory you are currently in?

Use `os.getcwd()`

13. How do you insert an object at a given index in Python?

Use `list.insert(index, item)`

14. How do you reverse a list?

Use `list.reverse()` or `list[::-1]`

15. What is the Python interpreter prompt?

It is `>>>` shown in the Python shell.

16. How does a function return values?

Using the `return` keyword.

17. How would you define a block in Python?

Using indentation.

18. Why do we need `break` and `continue` in Python?

`break` exits a loop, `continue` skips to the next iteration.

19. In one line, show us how you'll get the max alphabetical character from a string.

`max('string')`

20. Can you name ten built-in functions in Python and explain each in brief?

Examples: `print()`, `len()`, `type()`, `int()`, `str()`, `sum()`, `sorted()`, `min()`, `max()`, `input()`

21. How will you convert a list into a string?

Use `' '.join(list)`

22. How will you remove a duplicate element from a list?

Convert it to a set: `list(set(my_list))`

23. What is a dictionary in Python?

A collection of key-value pairs.

24. Explain the //, %, and ** operators in Python.

//: floor division, %: remainder, **: power

25. What do you know about relational operators in Python?

==, !=, >, <, >=, <=

26. What are assignment operators in Python?

=, +=, -=, *=, /=, //=, **=, %=

27. Explain logical operators in Python.

and, or, not

28. Tell us about bitwise operators in Python.

&, |, ^, ~, <<, >>

29. What data types does Python support?

int, float, str, list, tuple, dict, set, bool, NoneType, etc.

30. How would you convert a string into an int in Python?

Use int('123')

31. How do you take input in Python?

Use input()

32. What is recursion?

A function calling itself.

33. What does the function zip() do?

Combines elements of multiple iterables.

34. How do you calculate the length of a string?

Use len(string)

35. Explain Python List Comprehension.

Syntax: [expression for item in iterable]

36. How do you get all values from a dictionary?

Use dict.values()

37. Toggle case for a string?

Use string.swapcase()

38. Print everything except spaces.

```
for ch in string: if ch != ' ': print(ch, end="")
```

39. Print string 5 times.

```
print(string * 5)
```

40. Purpose of bytes() in Python?

To create immutable byte sequences.

41. What is a control flow statement?

Statements like if, for, while, break, continue

42. Convert string list to numbers.

Use list(map(int, str_list))

43. Data type to store names?

List of tuples or dictionaries

44. Work with non-decimal numbers?

Use bin(), oct(), hex(), or int(x, base)

45. Arguments for range()?

```
range(stop), range(start, stop), range(start, stop, step)
```

46. What is PEP 8?

Python style guide.

47. Swap two numbers?

```
a, b = b, a
```

48. Multiple assignments?

x, y, z = 1, 2, 3

49. Break infinite loop?

Use break

50. Benefits of Python?

Readable, versatile, cross-platform, huge libraries

51. What are Python modules?

Reusable .py files that can be imported.

52. Common built-in modules?

os, sys, math, random, datetime, re, json

53. Local vs global variables?

Local inside function, global outside.

54. What is a lambda function?

Anonymous function: lambda x: x+1