

Here are **20 Python interview questions paired with concise answers**, presented in a clean Q&A format without topic headings:

1. **What is Python?**
A versatile, high-level, interpreted programming language known for its clean syntax, dynamic typing, extensive libraries, and wide range of applications (techbeamers.com, hackr.io).
2. **Is Python compiled or interpreted?**
Python code is typically compiled into bytecode and then interpreted by the Python Virtual Machine; implementations like CPython do both ([geeksforgeeks.org](https://www.geeksforgeeks.org)).
3. **What benefits does Python offer?**
It's simple to read, portable, extensible, open-source, supports dynamic typing, automatic memory management, multiple paradigms, and has a rich standard library ([guru99.com](https://www.guru99.com)).
4. **What is PEP 8?**
The official style guide for writing readable, consistent Python code ([pythonguides.com](https://www.pythonguides.com), [guru99.com](https://www.guru99.com)).
5. **Define mutable and immutable types.**
Mutable types (like lists, dicts, sets) can change after creation; immutable types (like strings, tuples, numbers) cannot ([almabetter.com](https://www.almabetter.com)).
6. **Difference between list and tuple?**
Lists are mutable and generally slower; tuples are immutable and faster ([edureka.co](https://www.edureka.co)).
7. **Explain slicing.**
A way to extract subsequences using the [start:stop:step] syntax .
8. **What does the pass statement do?**
It's a no-operation placeholder used in empty code blocks ([interviewbit.com](https://www.interviewbit.com)).
9. **How do break and continue work?**
break exits the loop entirely; continue skips the rest of the current iteration and moves to the next one ([pythonguides.com](https://www.pythonguides.com)).
10. **What is an iterator?**
An object with `__iter__()` and `__next__()` methods, capable of returning elements one at a time .
11. **What is `__init__`?**
A constructor method called when creating an instance of a class ([interviewbit.com](https://www.interviewbit.com)).
12. **What is `self` in class methods?**
It refers to the specific instance of the class from within its methods .
13. **Explain pickling and unpickling.**
Pickling serializes objects to byte streams; unpickling restores them ([guru99.com](https://www.guru99.com)).
14. **What is a docstring?**
A string literal placed right after function, class, or module definitions used for documentation .

15. What is unit testing in Python?

Using frameworks like unittest to test individual components of code separately (interviewbit.com).

16. How do you handle exceptions?

Use try to wrap code, except to catch errors, finally for cleanup, and raise to throw exceptions manually .

17. What is the difference between == and is?

== checks value equality, while is checks if two references point to the exact same object (pythonguides.com).

18. How do you merge two dictionaries?

In Python 3.9+, use `{**d1, **d2}`, or use `d1.update(d2)` to merge in place (pythonguides.com).

19. How do you find the max/min key by value in a dict?

Use `max(d, key=d.get)` or `min(d, key=d.get)` .

20. What are Python's built-in data types?

Common types include strings, integers, floats, lists, tuples, sets, dictionaries, and arrays (interviewbit.com).
