

1. What is a variable in Python? How is it different from a constant?
2. Explain the difference between mutable and immutable data types with examples.
3. List and describe any five built-in data types in Python.
4. What is type casting in Python? Give examples of implicit and explicit type casting.
5. What will be the output of the following code and why?

```
a = 10  
  
b = "20"  
  
print(a + int(b))
```

6. Differentiate between == and is operators with examples.
7. What are logical operators in Python? Explain with suitable examples.
8. What is the output of the following code? Explain your answer.

```
x = 5  
  
x += 3 * 2  
  
print(x)
```

9. Explain the use of if, elif, and else statements in Python with an example.
10. Write a Python program that checks whether a number is positive, negative, or zero.
11. Compare for and while loops with an example of each.
12. What is the purpose of the break and continue statements? Illustrate with examples.
13. Write a program to print all even numbers from 1 to 50 using a loop.
14. What is the difference between a built-in function and a user-defined function in Python?
15. Define a function that takes a list of numbers and returns the sum of all even numbers.
16. Explain the concepts of default arguments and keyword arguments in functions.
17. What is the difference between a list and a tuple in Python?
18. How is a set different from a list? Write a program to remove duplicate elements from a list using a set.

19. Explain how a dictionary works in Python. Write an example to show how to add, update, and delete a key-value pair.

20. Write the output of the following and explain:

```
my_dict = {'a': 1, 'b': 2}
```

```
print(my_dict.get('c', 'Not Found'))
```