1.What is a variable in Python?  
A variable is a name that stores the data

2. How do you declare a variable in Python?  
x = 10

3. Can you change the value of a variable after declaring it in Python?  
Yes, just assign a new value anytime.

4 Does Python require declaring the variable type?  
No, Python figures out the type automatically.

5. What will happen if you use a variable before assigning a value to it?  
 we’ll get a NameError.

6. Is Python a case-sensitive language for variable names?  
Yes. python is case-sensitive var and Var are different.

7. Can a variable name start with a number in Python?  
No, variable names can’t start with numbers.

8. What symbols are allowed in variable names apart from letters and numbers?  
Only underscore \_ is allowed.

9. Is my\_var the same as My\_Var in Python?  
No, they’re treated as different variables.

10. What is the difference between assignment = and equality == in Python?  
= is for assigning a value; == checks if two values are equal.

**Variables – Data Types & Examples**

1. How do you assign an integer value to a variable?  
x = 5

2. How do you assign a floating-point value to a variable?  
y = 3.14

3. How do you assign a string value to a variable?  
s = "hello" (or 'hello')

4. What is the type of variable x = True?  
Boolean (bool)

5. How do you check the type of a variable?  
Use type(x)

6. Can a variable change its type after assignment?  
Yes. For example, x = 5 then x = "five".

7. What will be the type of x = 3 + 4.5?  
Float, because adding int + float gives float.

8. Give an example of assigning multiple variables in one line.  
a, b = 1, 2

9.What is dynamic typing in Python?  
You don’t fix the type, Python handles it at runtime.

10.What will happen if you assign x = "5" and then do x = x + 2?  
You’ll get an error, can’t add string and int.

Strings – Basics

1. How do you define a string in Python?  
With single or double quotes, like 'hello' or "hello".

2. What is the difference between single and double quotes in strings?  
Functionally the same; helps handle quotes inside strings.

3. How do you create a multi-line string?  
Use triple quotes: """text"""

4. How do you find the length of a string?  
len(s)

5. How do you access the first character of a string?  
s[0]

6. What is string slicing?  
Getting part of a string using indices, like s[1:4].

7. What does my\_str[0:3] return if my\_str = "Python"?  
 "Pyt"

8. How do you concatenate two strings?  
"Hello" + "World" → "HelloWorld"

9. What is the result of "Hello" \* 3?  
"HelloHelloHello"

10. Are strings mutable or immutable in Python?  
Immutable (can’t change parts of them directly).

Type Casting – Basics

1. What is type casting in Python?  
Changing a value from one data type to another.

2. How do you convert a string "123" to an integer?  
int("123")

3. How do you convert a float 3.5 to an integer?  
int(3.5) → gives 3

4. How do you convert the integer 5 to a string?  
str(5)

5. What happens if you try to convert the string "abc" to an integer?  
It gives an error (ValueError).

6. How do you convert a string "3.14" to a float?  
float("3.14")

7. What will be the result of int(3.99)?  
3

8. How do you check if a variable can be converted to a number safely?  
Use try...except to catch errors.

9. What is the difference between str() and repr() in Python?  
str() is for readable text; repr() is for unambiguous, often more detailed representation.

10. How do you convert a Boolean True to an integer?  
int(True) → gives 1