**Variables – Basics**

1. What is a variable in Python?

Variables in Python are used to store or assign values.

Ex: a=100

1. How do you declare a variable in Python?

Declaring a variable:  
   a = 100  // here a is variable and 100 is value.

1. Can you change the value of a variable after declaring it in Python?

Yes, the value of a variable can be changed.

1. Does Python require declaring the variable type?

No, Python assigns the type from the value.

1. What will happen if you use a variable before assigning a value to it?

We get a Name error when calling an unknown value.

1. Is Python a case-sensitive language for variable names?

Yes, Python is case-sensitive.

1. Can a variable name start with a number in Python?

No.

1. What symbols are allowed in variable names apart from letters and numbers?

Underscore is allowed: \_

1. Is my\_var the same as My\_Var in Python?

No, both are different because Python is case-sensitive.

1. What is the difference between assignment = and equality == in Python?

= :is an operator that assigns value to a variable.  
= = : is an operator that checks if two values are equal

**Variables – Data Types & Examples**

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

Integer value is assigned as:  
    x = 100

1. How do you assign a floating-point value to a variable?

Floating point value is assigned as:  
    y = 20.4

1. How do you assign a string value to a variable?

String value is assigned as:  
    z = "Abhi" or x = 'Abhi'

1. What is the type of variable x = True?

Variable type is Boolean.

1. How do you check the type of a variable?

type() is the function used.  
     Example:  
     x = 100  
     type(x)

1. Can a variable change its type after assignment?

Yes

1. What will be the type of x = 3 + 4.5?

Float(7.5 i.e int+float=float)

1. Give an example of assigning multiple variables in one line.

a, b, c=1 , 2, 3

1. What is dynamic typing in Python?

Varibles that are not fixed and can hold any type and change their type during runtime.

1. What will happen if you assign x = "5" and then do x = x + 2?

It gives a TypeError because of adding a string and an integer.

**Strings – Basics**

1. How do you define a string in Python?

We define strings using single or double quotes: 'hello' or "hello"

1. What is the difference between single and double quotes in strings?

No difference,they are the same.

1. How do you create a multi-line string?

Multiline strings can be created using triple quotes: ' ' ' ' ' ' or """ """

1. How do you find the length of a string?

Use: len(string) to find length.  
     Ex: len("class") → Output: 5

1. How do you access the first character of a string?

Use string[0] to access characters.  
     Ex: "Abhigna"[0] → Output: 'A'

1. What is string slicing?

Slicing is to extract a part of a string.  
     string[start:end]  
     Ex:  my\_str = "Python"   -> my\_str[0:3]  -> Returns: ‘Pyt’

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

my\_str = "Python"  
     my\_str[0:3] returns ‘Pyt’

1. How do you concatenate two strings?

Concatenate using + operator:  
     "Pyt" + "on" → "Python"

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

"Hello" \* 3 → "HelloHelloHello"

1. Are strings mutable or immutable in Python?

Strings are immutable (can’t be changed).

**Type Casting – Basics**

1. What is type casting in Python?

Typecasting means converting one datatype to another.

Ex: int("123") → 123

1. How do you convert a string "123" to an integer?

 x = "123"

 y = int(x)  -> Output: 123

1. How do you convert a float 3.5 to an integer?

a = 3.5     b = int(a)

->Output: 3

1. How do you convert an integer 5 to a string?

a = 5     b = str(a)

-> Output: "5"

1. What happens if you try to convert a string "abc" to an integer?

There will be an error since "abc" is not numeric.

1. How do you convert a string "3.14" to a float?

 float("3.14")  -> Output: 3.14

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

 int(3.99)  -> Output: 3 (returns only integer part)

1. How do you check if a variable can be converted to a number safely?

Using try and except

1. What is the difference between str() and repr() in Python?
2. How do you convert a boolean True to an integer?

int(True) returns ->1  
 int(False) returns ->0