**1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.**

**These are the values**: 'hello', -87.8, 6 .

**These are the expressions**: - , /, +

**2. What is the difference between string and variable?**

A string is a specific type of data that represents a sequence of characters enclosed in quotation marks single or double quote.

A variable is a named reference to a value or an object in Python.

**3. Describe three different data types.**

There are numerous data types that can be used to represent different kinds of values.

Text Type: str

Numeric Types: int, float, complex

Sequence Types: list, tuple, range

Mapping Type: dict

Set Types: set, frozenset

Boolean Type: bool

Binary Types: bytes, bytearray, memoryview

None Type: NoneType

**Here are three commonly used data types:**

**1. Integer (int):**

An integer represents whole numbers without any fractional or decimal parts. It can be a positive number, a negative number, or zero.

For example: x = 10

y = -5

z = 0

**2.String (str):**

A string represents a sequence of characters enclosed within single quotes (' ') or double quotes (" ").

It is used to store textual data such as names, sentences, or any other collection of characters.

For example: name = "John Doe"

message = 'Hello, World!'

**3.List (list):**

A list is an ordered collection of items enclosed within square brackets [ ].

It can contain elements of different data types and allows for mutable operations such as adding, removing, and modifying elements. Lists are versatile and commonly used to store multiple values.

For example:

numbers = [1, 2, 3, 4, 5]

fruits = ['apple', 'banana', 'orange']

mixed = [10, 'hello', True]

**4. What is an expression made up of? What do all expressions do?**

An expression in Python is a combination of values, variables, operators, and function calls that evaluates to a single value. It can be as simple as a single variable or a complex combination of multiple components.

Expressions are used to perform computations, manipulate data, and produce results.

**5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?**

In Python, expressions and statements are two fundamental concepts, but they serve different purposes.

**1. Expressions:**

An expression is a piece of code that evaluates to a value. It can be a combination of variables, literals,

operators, and function calls. When you write an expression, Python evaluates it and produces a resulting value.

For example:

spam = 10

eggs = 5 + spam

**2. Statements:**

A statement is a complete instruction or command that performs an action. Unlike expressions, statements do not

necessarily produce a value. They can include variable assignments, function definitions, conditional structures

(like if-else statements), loops, and more. Here's an example:

For example:

if spam > eggs:

print("Spam is greater than eggs!")

else:

print("Eggs are greater than or equal to spam!")

**6. After running the following code, what does the variable bacon contain?**

bacon = 22

bacon + 1 , **It will increase the value of bacon by 1 ; bacon = 23**

**7. What should the values of the following two terms be?**

**'spam' + 'spamspam'**

**'spam' \* 3**

The result will be the same for both ; ‘spamspamspam’

**8. Why is eggs a valid variable name while 100 is invalid?**

We can’t assign a variable name starting from an integer although we can start any variable name by any alphabet of abz or ABZ.

**9. What three functions can be used to get the integer, floating-point number, or string version of a value?**

a. int(value)

b. float(value)

c. str(value)

**10. Why does this expression cause an error? How can you fix it?**

**'I have eaten ' + 99 + ' burritos.'**

The expression 'I have eaten ' + 99 + ' burritos.' causes an error because you are attempting to concatenate a string ('I have eaten ') with an integer (99) and another string (' burritos.'). In Python, you can only concatenate objects of the same type.

**This is the correct expression:** 'I have eaten ' + str(99) + ' burritos.'