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.

\*

'hello'

-87.8

-

/

6

--Value: ‘hello’ , -87.7, 6

--Expression: \* , - , / , +

2. What is the difference between string and variable

--String is a data type ,variable is reference to a value stored in memory

3. Describe three different data types.

--a.int : for integer values

--b.str : for string values

--c.dict: for dictionary key value pair

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

-- An expression consist of operators and operand

Operators: These are symbols that perform specific operations on the operands. Examples of operators include arithmetic operators (+, -, \*, /), comparison operators (>, <, ==), logical operators (and, or, not), and more

Operands: These are the values or variables that the operators act upon. Operands can be literals, variables, function calls, or other expressions. For example, in the expression `x + 5`, `x` and `5` are operands.

Parentheses: These are used to group parts of an expression and control the order of evaluation. They can be used to override the default precedence of operators.

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

--An expression is a combination of operators, operands, and other expressions that produces a value when evaluated. It can be as simple as a single literal or variable, or it can be more complex with multiple operators and operands. For example, 2 + 3 is an expression that evaluates to 5. Expressions can be used within statements or as part of larger expressions.

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

bacon = 22

bacon + 1

--23

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

'spam' + 'spamspam' :

-- ‘spamspamspam’

'spam' \* 3 :

--‘spamspamspam’

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

--Name can contain any letter so eggs is valid .

--100 is invalid because variable name cannot start with number.

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

-- int() , float() , str()

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 we are trying to concatenate a string with an integer value directly using the `+` operator. In Python, concatenating a string with another string is allowed, but concatenating a string with a non-string value, such as an integer, will result in a TypeError.

To fix this error, we can convert the integer value `99` to a string using the `str()` function.

'I have eaten ' + str(99) + ' burritos.'