**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**

**Answer 1:** Values: ‘hello’, -87.8, 6 Expressions: \*, -, /, +

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

**Answer 2:** String is a type of information that is stored in a variable while a variable is a place/element to store any information.

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

**Answer 3:** Three different data types are Integer (int), Float (float) and String (str).

Integers as 0,1,-5

Float as 5.8, 69.96

String as “noida”

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

**Answer 4:** An expression is made up of a combination of values, variables, operators, and function calls that are evaluated to produce a result. In simpler terms, an expression represents a computation that can be carried out to produce a single value.

The basic components of an expression include:

* Values: These can be literals (like numbers or strings) or the result of evaluating sub-expressions.
* Variables: Represent placeholders for values. They are typically used to store and reference data.
* Operators: These are symbols or keywords that perform operations on values or variables. Examples include addition (+), subtraction (-), multiplication (\*), division (/), and more.
* Function Calls: Expressions can also include calls to functions, which are reusable blocks of code designed to perform a specific task. Functions take input values, process them, and return a result.

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

**Answer 5:** An expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a single value while A statement is a complete line of code that performs a specific action. It is a standalone unit of execution.

Examples of expressions include 2 + 3, x \* y, or len("hello") while Examples of statements include assignment statements (spam = 10), control flow statements (like if, while, for), and function calls.

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

**bacon = 22**

**bacon + 1**

**Answer 6:** Bacon will contain 23 as in 1st line of code bacon store the value 22 and in next line it is increasing by 1.

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

**'spam' + 'spamspam'**

**'spam' \* 3**

**Answer 7:** In both cases, answer will be – “spamspamspam”. From 1st statement, string concatenation will happen and in 2nd statement multiplication of a string is happening by integer.

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

**Answer 8:** eggs is a valid variable name while 100 is invalid because:

1. A variable should be start with a letter and not with any number.
2. “eggs” is case sensitive as well.
3. 100 itself is a value which cannot take another value in place unlike eggs in which any value can be stored.

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

**Answer 9:**

For integer conversion - int(), for float conversion - float() and for string conversion – str()

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

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

**Answer 10:** Here in this expression, we are trying to concatenate two strings and one integer (99) which will show a value error. To fix this error, we can convert the integer into string and then concatenate. Correct code will be:

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