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.**

**Ans:**

**\***  : expression

**'hello'** : value

**-87.8** : value

**-** : expression

**/** : expression

**+** : expression

**6** : value

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

**Ans :** Variables are reserved memory locations which stores some values. But string is a python data type which are identified as a contiguous set of characters represented in the quotation marks. Strings can be a value stored in a variable.

Example: in the expression a = “shivani”

a is a variable which stores the value shivani which is a string.

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

Three different data types in python are :

* **Number :** Number data type stores numeric values.Number objects are created when you assign a value to them.

**Example:** var1= 10.

Python supports four different numerical data types which are int, long, float and complex.

* **String :** strings in python are identified as a contiguous set of characters represented in the quotation marks. Python allows for either a pair of single or double quotes.

**Example:** “i am fine” is a string

* **List :** List contains items separated by commas and enclosed within square brackets( [ ] ). Lists are the most versatile of Pythons compound data types.

**Example:**  list = [‘shivani’ , 89 , 9.0 ]

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

**Ans :** An expression is a combination of operators and operands that is interpreted to produce some value. An expression is evaluated as per the precedence of operators. Expressions are evaluated to produce a value and it always produces a value.

For example : x = 2+3 , c = a+b are expressions.

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

**Ans :**

* An expression evaluates to value but a statement executes something.
* Evaluation of an expression always produces or returns a value but execution of a statement may or may not produces or displays a result value, it only does whatever the statement says.
* Expressions are mostly defined by the user but most statements are already pre-defined in a programming language.
* Expressions generally have a type but statements are of the type void.

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

bacon = 22

bacon + 1

Ans : The variable bacon contains the value 22, because the variable bacon has been incremented by 1 in second statement but the incremented value has not been assigned.

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

Ans : 'spam' + 'spamspam' = ‘spamspamspam’

'spam' \* 3 = ‘spamspamspam’

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

**Ans:** A variable name should start with a letter A to Z or a to z or an underscore followed by zero or more letters , underscore and digits 0 to 9.

So eggs is a valid variable name because it starts with a letter and is also followed by letters but 100 is invalid because it starts with digit 1 and a valid variable name can’t be started with a digit.

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

Ans : Function used to get the integer, floating-point number or string version of a value

are:

**int(x)** : converts x to an integer.

**float(x):** converts x to a floating point number.

**str(x):** converts x to a string.

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

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

Ans : The above expression will cause an error because the string concatenation operator(+) is used to concatenate the strings ,it can concatenate strings with only strings. But in above expression we are concatenating a string with an integer so it will cause an error. We can fix it as follows :

‘I have eaten’ + string(99) + ‘burritos.’