**Assignment 1**

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 –**

**Values** – “Hello”, -87.8 and 6 (an integer or string (collection of characters) which can be printed and stored in variable name for any operation)

**Expressions -** \*, -, /, + (it is a mathematical operator or combination of operators and values which can be combined or interpretated to create a new value)

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

**Answer –** Strings is a data type in pyhton which is collection of letters/characters. It is denoted by single, double orr triple quotes. Ex – ‘Hello’, “Hiii”

Variables are special name assigned to store any data type for future reference or calculation. The variables are case-sensitive, and its name always starts with alphabets or underscore (\_). Ex – a, shub, \_test123, k23h etc.

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

**Answer -** There are multiple data types in pyhton.

1. **Numeric Datatypes:**
2. Interger – They are values with whole integers numbers. Ex – 3,67,89,990
3. Float – They are values with decimal numbers. Ex- 3.14, 6.887, 4.0
4. **Sequence Datatypes:**
5. Strings – They are collection of letters other than numbers. Ex- “shubham”, “Hello”, “a”
6. Lists – It is a mutable collection of different datatypes denoted under []
7. Tuples – It is an immutable collection of datatypes denoted under ()
8. **Dictionary -** It is mutable collection of ordered datasets in form of key: value pairs.
9. **Set –** It is an unordered, unindexed and unchangeable collection of datasets
10. **Boolean –** They are logical data types which are either True or False.

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

**Answer –** Expressions are combination of operators (logical and airthematic), values and operands which is then interpretated to form a single value/output. They are the representation of a single value.

Examples: a+6 – 56, min(3,12) etc

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

**Answer-** The expressions evaluate and produces a single value or result which can be printed. Expressions are statements as well. Example spam = 10 is an assignment statement which returns a value 1o.

Whereas the statements do not produce a value rather they are instructions which the pyhton executes and evaluates but do not print any value on screen. There are multiple kinds of statements like if, for, while statements.

Example – while a<10: print (“Hello”)

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

bacon = 22

bacon + 1

**Answer-** bacon = 23

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

'spam' + 'spamspam'

'spam' \* 3

Answer = spamspamspam

spam spam spam

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

**Answer –** Variable name always starts from alphabet or underscore(\_). Hence 100 is an invalid variable name.

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

**Answer –** int(a), float(b), str(c)… where a,b, and c can be any value.

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

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

**Answer –** “I have eaten” + “99” + “burritos”.

Because the string is always enclosed in single or double quotes and string can not be concatenated to integer value (99).